Foreword

- Huawei HiAI is an open artificial intelligence (AI) capability platform for smart devices, which adopts a "chip-device-cloud" architecture, opening up chip, app, and service capabilities for a fully intelligent ecosystem. This assists developers in delivering a better smart app experience for users by fully leveraging Huawei's powerful AI processing capabilities.
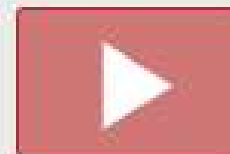
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Objectives

After this course, you will be able to:

- Master the usage of Huawei HiAI platform.

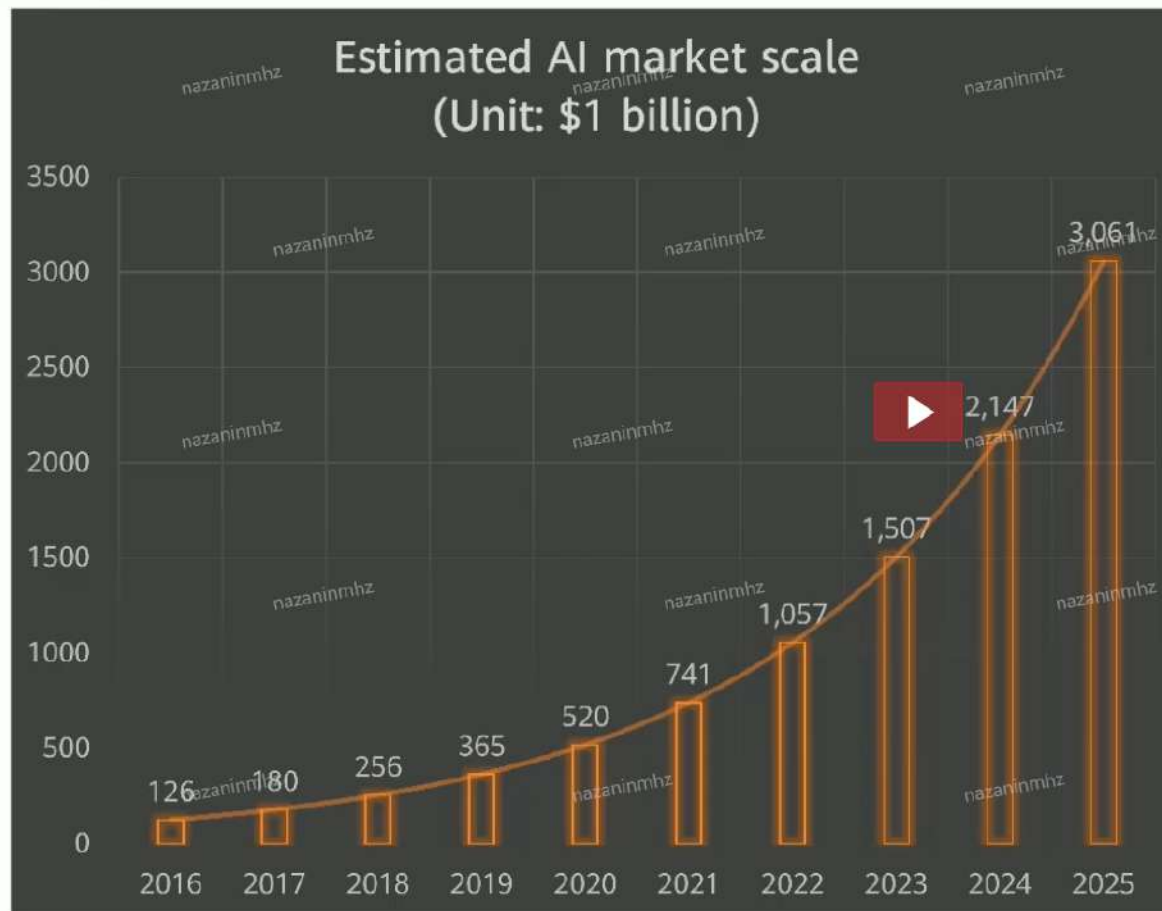- Understand the powerful functions of Huawei HiAI platform.

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Huge Opportunities: Foreseeable AI Ubiquity in a $3 Trillion Market

Estimated AI market scale (Unit: $1 billion)

Year	Value
2016	126
2017	180
2018	256
2019	365
2020	520
2021	741
2022	1,057
2023	1,507
2024	2,147
2025	3,061

Involved industries: automobile, finance, consumer goods and retail, medical care, education, manufacturing, communications, energy, tourism, culture and entertainment, transportation, logistics, real estate, and environmental protection

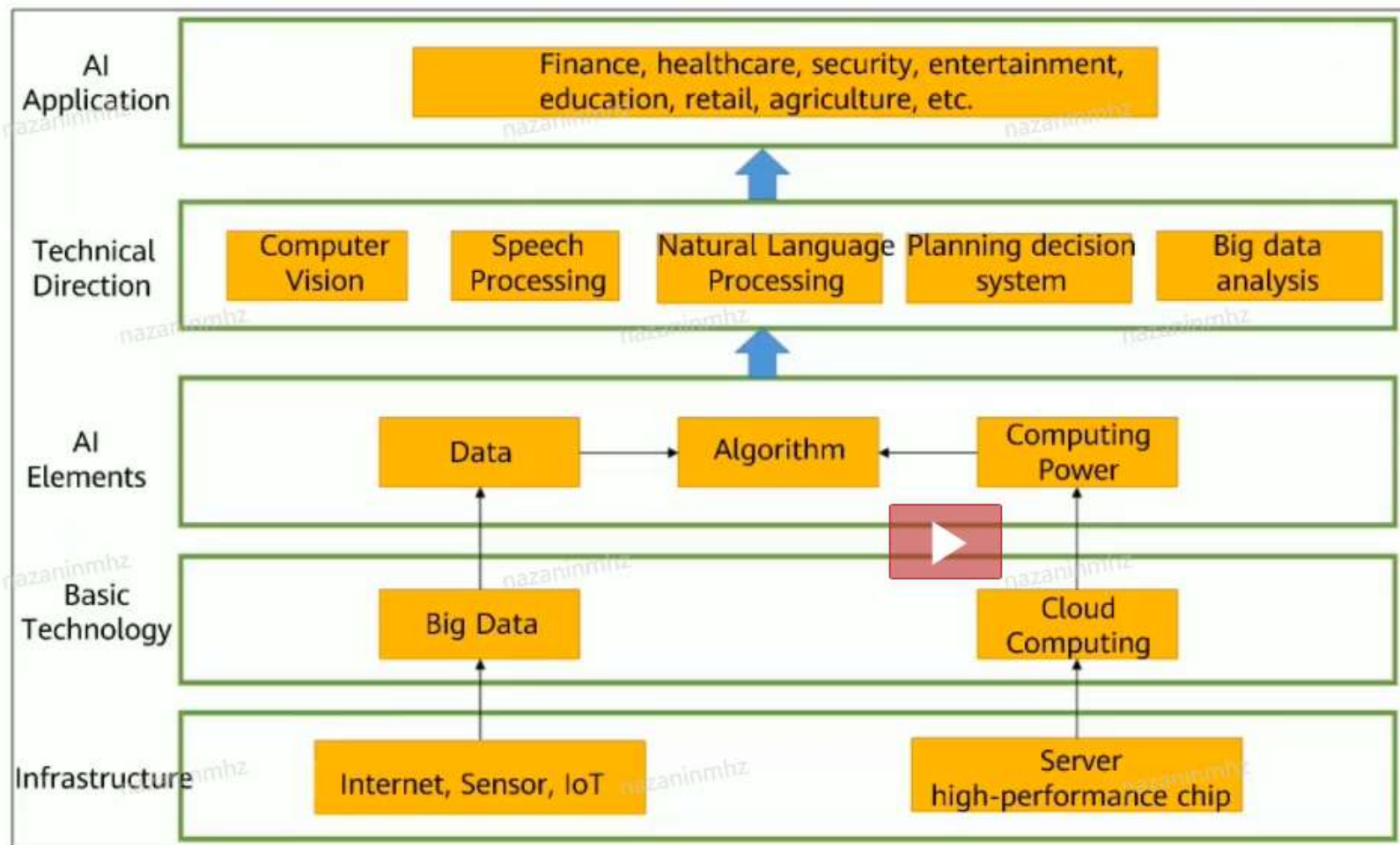- Computing power breakthrough
- Algorithm breakthrough
- Data breakthrough

Data source: Forrester, Transparency Market Research, Chinese Association for Artificial Intelligence, and Roland Berger

Activate Windows
Go to Settings to activate Windows.

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Architecture of the AI Application Platform

AI Application	Finance, healthcare, security, entertainment, education, retail, agriculture, etc.
Technical Direction	Computer Vision · Speech Processing · Natural Language Processing · Planning decision system · Big data analysis
AI Elements	Data → Algorithm ← Computing Power
Basic Technology	Big Data · Cloud Computing
Infrastructure	Internet, Sensor, IoT · Server high-performance chip

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Challenges in AI Capability Development and Application

High thresholds	Low efficiency	Diverse requests	Slow iteration
Demanding requirements	Long training cycles	Fragmented experience	Limited capability enhancement
6 months: ML & DL 2 months: Statistics 4 months: Linear algebra 3 months: Calculus	Data collection and cleansing Model training and optimization Customized experience improvement	The entire training cycle must be repeated for each scenario. Lack of inheritability or transferability	Difficulties in model upgrade Difficulties in valid data acquisition
15 months	3–8 months	N-fold workload	

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HiAI 3.0 – Enabling Ultimate Experience in All-Scenario Smart Life

HiAI 1.0

Single Device

HiAI 2.0

Multiple Devices

HiAI 3.0

Distributed

- Ultimate Experience
- Resource Sharing
- Computing Power Sharing
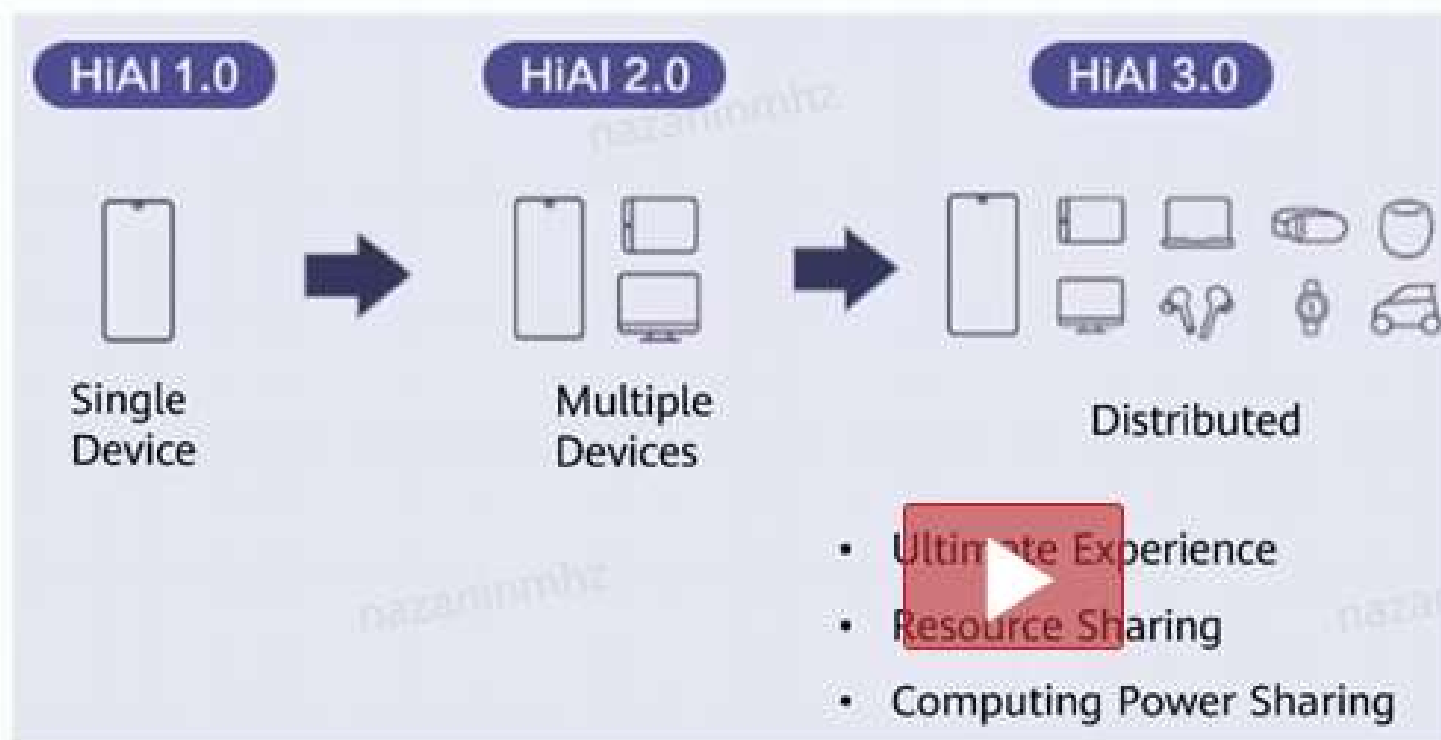
- 4000+ partners
- Over 96 million daily active users
- Over 600 billion monthly calls

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Huawei HiAI 3.0: Enabling Distributed All Scenarios by AI

Cloud 1000+ atomized services

Device 40+ application programming interfaces (APIs)

Chip 300+ operators

Huawei HiAI Service

Service capability openness for mutual benefits
Push services based on user requirements in an active manner.

Huawei HiAI Engine

AI capability openness for simplicity
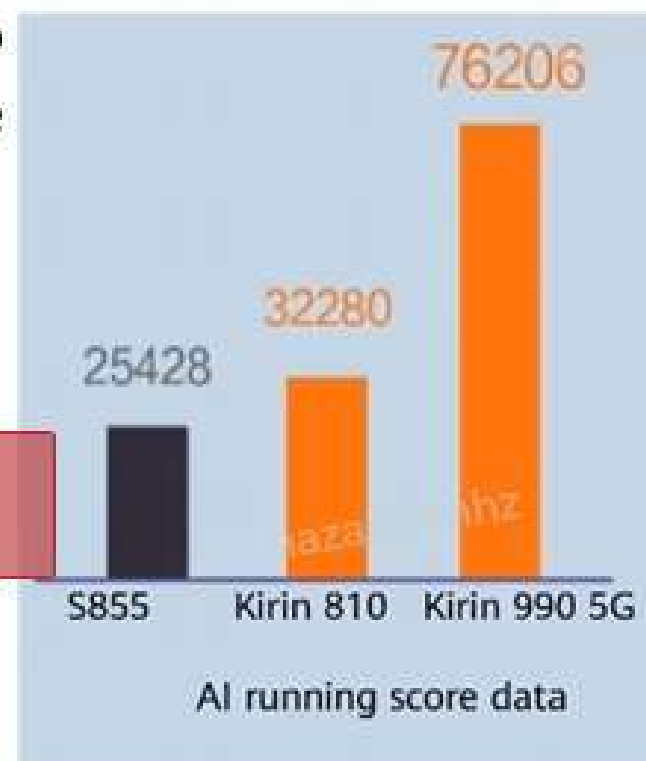Integrate multiple AI capabilities into apps simply, making apps smarter and more powerful.

Huawei HiAI Foundation

Chip capability openness for high efficiency
Quickly convert and migrate existing models to obtain optimal performance based on heterogeneous scheduling and network process unit (NPU) acceleration.

HiAI Foundation

- HiAI Foundation APIs constitute an AI computing library of a mobile computing platform, enabling developers to efficiently compile AI apps that can run on mobile devices.

  - Leveraging high performance and high precision of Kirin chips, better device-end AI performance will be delivered by more powerful computing power.

  - Support the largest number of operators (300+) in the industry and more frameworks, greatly improving flexibility and compatibility.

  - The Honghu, Kirin, and AI camera chips enable AI capabilities for more devices.

AI running score data

HiAI Engine

- HiAI Engine opens app capabilities and integrates multiple AI capabilities into apps, making apps smarter and more powerful.

  □ Provide handwriting recognition and dynamic gesture recognition capabilities, with 40+ underlying APIs.

  □ Computer vision and speech recognition will develop toward a distributed mode, assisting developers in delivering more all-scenario smart life experience.

Distributed AI helps sports healthy and safe driving
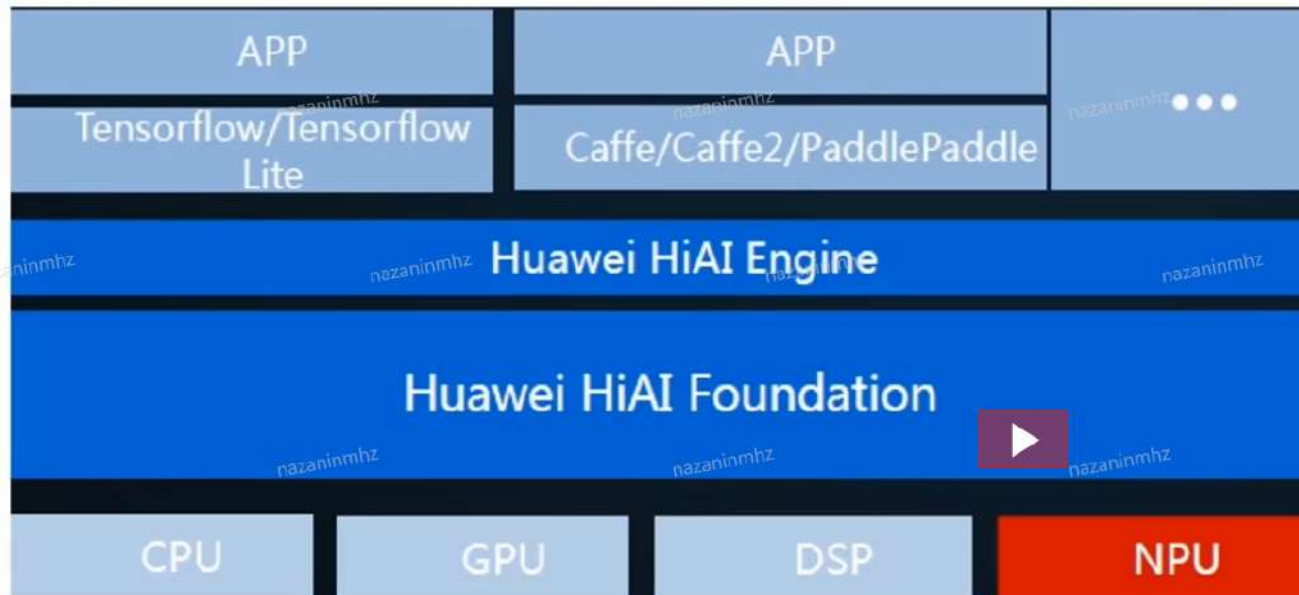
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HiAI Service

- HiAI Service enables developers to reuse services on multiple devices, such as mobile phones, tablets, and large screens, with only one service access, efficiently implementing distribution.

Architecture of the HiAI Mobile Computing Platform

APP	APP	
Tensorflow/Tensorflow Lite	Caffe/Caffe2/PaddlePaddle	•••

Huawei HiAI Engine

Huawei HiAI Foundation

CPU	GPU	DSP	NPU

Supports diverse mainstream front-end frameworks.

Provides various upper-layer function service APIs to ensure efficient running on mobile devices.

Allows flexible scheduling of heterogeneous resources, meeting developers' demand to accelerate neural network model computing and operator computing
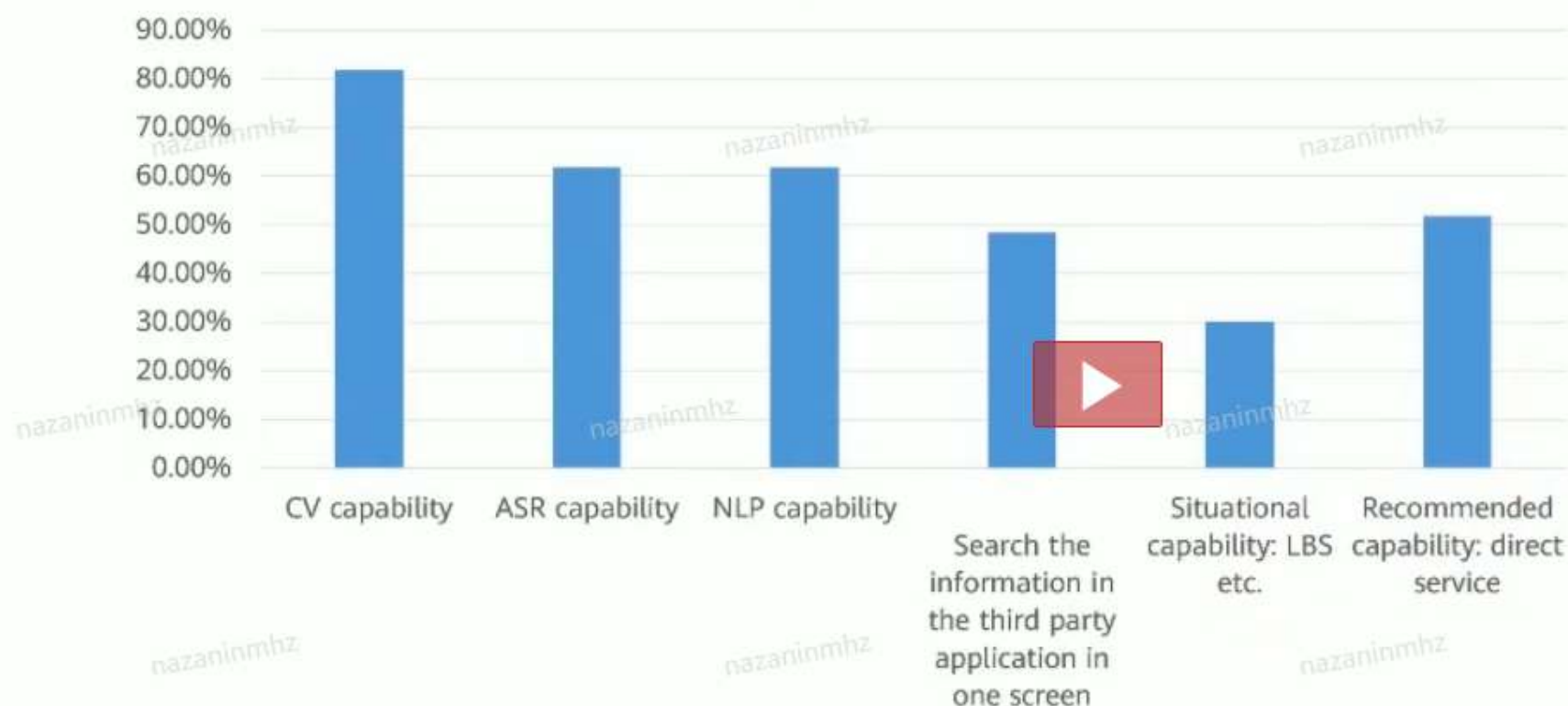
Tool chain

Comprehensive documents

Different types of APIs

Source codes enabling quick start

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AI Capability Provider, Accelerating Application Development

Research results of developers' demands for HiAI capabilities: more than 60% pay attention to CV, ASR, NLU

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1. AI Industry Ecosystem

2. Huawei HiAI Platform

3. **Developing Apps Based on Huawei HiAI Platform**

Connecting Developers and Stimulating Innovation to Achieve Win-Win ecosystem

Offline connection for in-depth communication

- Salons in cities
- HiAI open courses
- Technical symposiums

USD1 billion investment, stimulating innovations in all scenarios

- Openness and innovation of device capabilities
- All-scenario digital service innovation
- Cloud service ecosystem co-construction

Innovation competition for continuous development

- AI application innovation contest
- Creativity contest for future application
- AR application innovation contest

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Summary

- We believe that AI can make life better by bringing unprecedented convenience for both back end and devices. However, this requires actual application scenarios that allow more enterprises and developers to play a part in improving user experience substantially. Huawei is willing to work with partners to jointly promote intelligent transformation of industries with more developers and enterprises based on the HiAI3.0 platform.

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