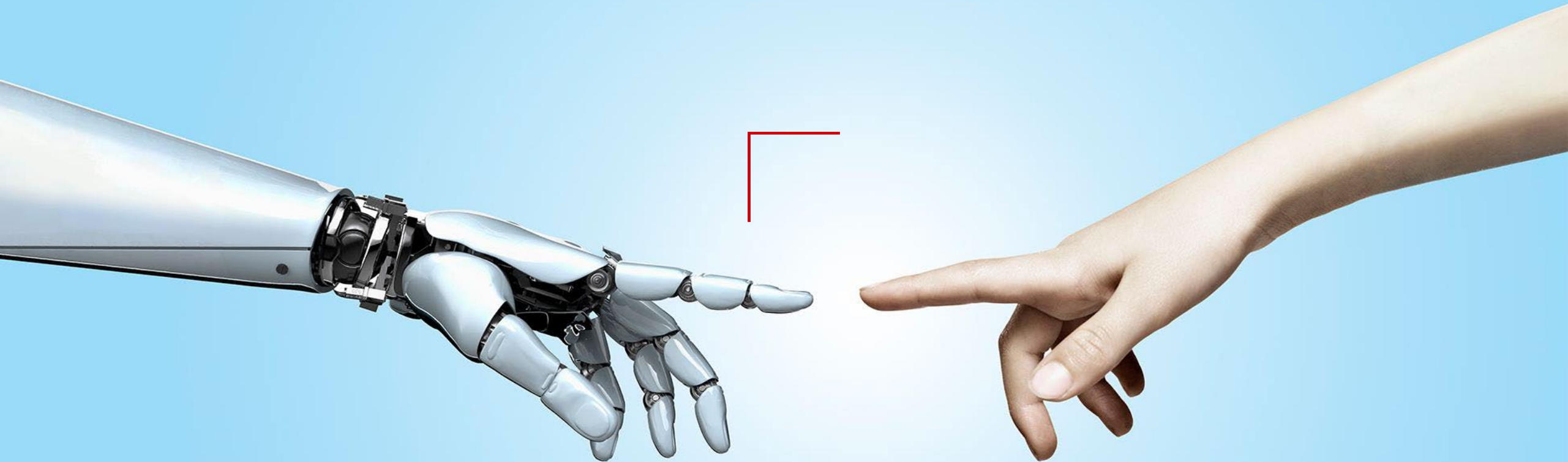


Huawei Smart Education Solutions Overview



Security Level:



Contents



Trends and Challenges

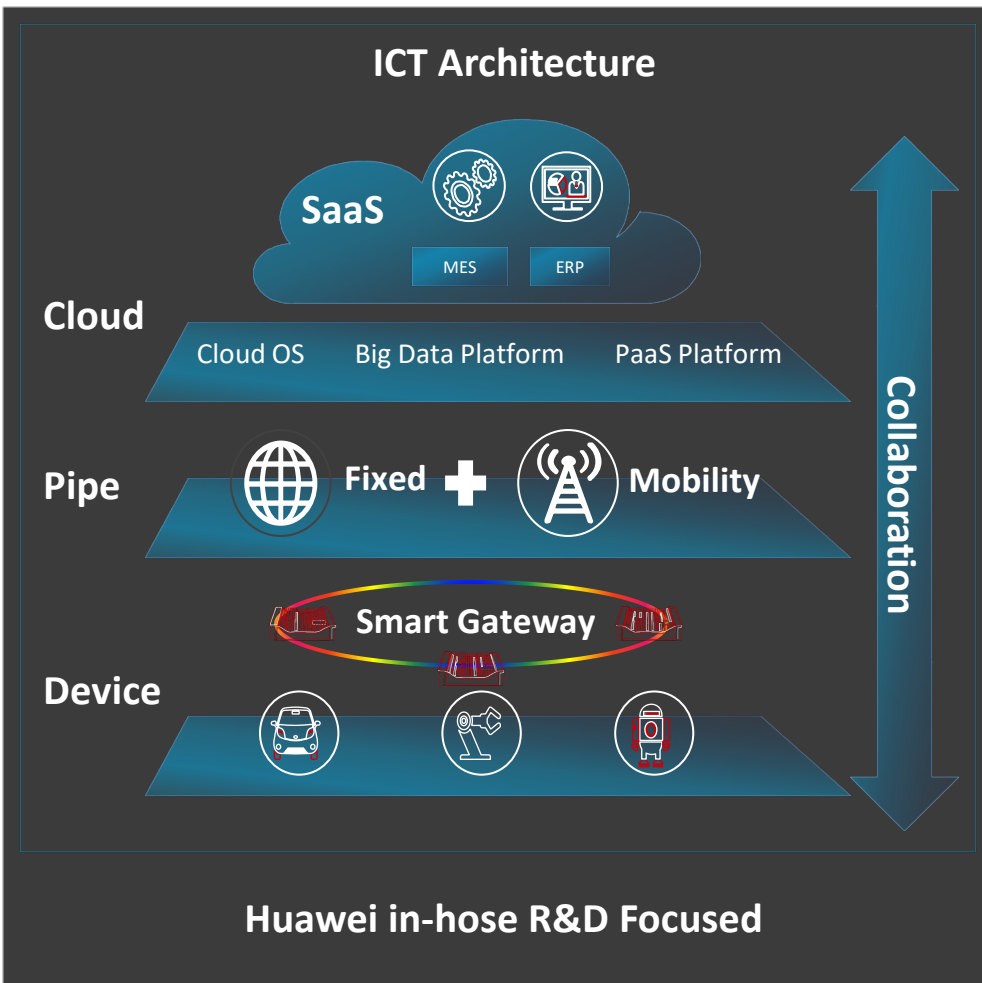


Huawei Smart Education Solutions

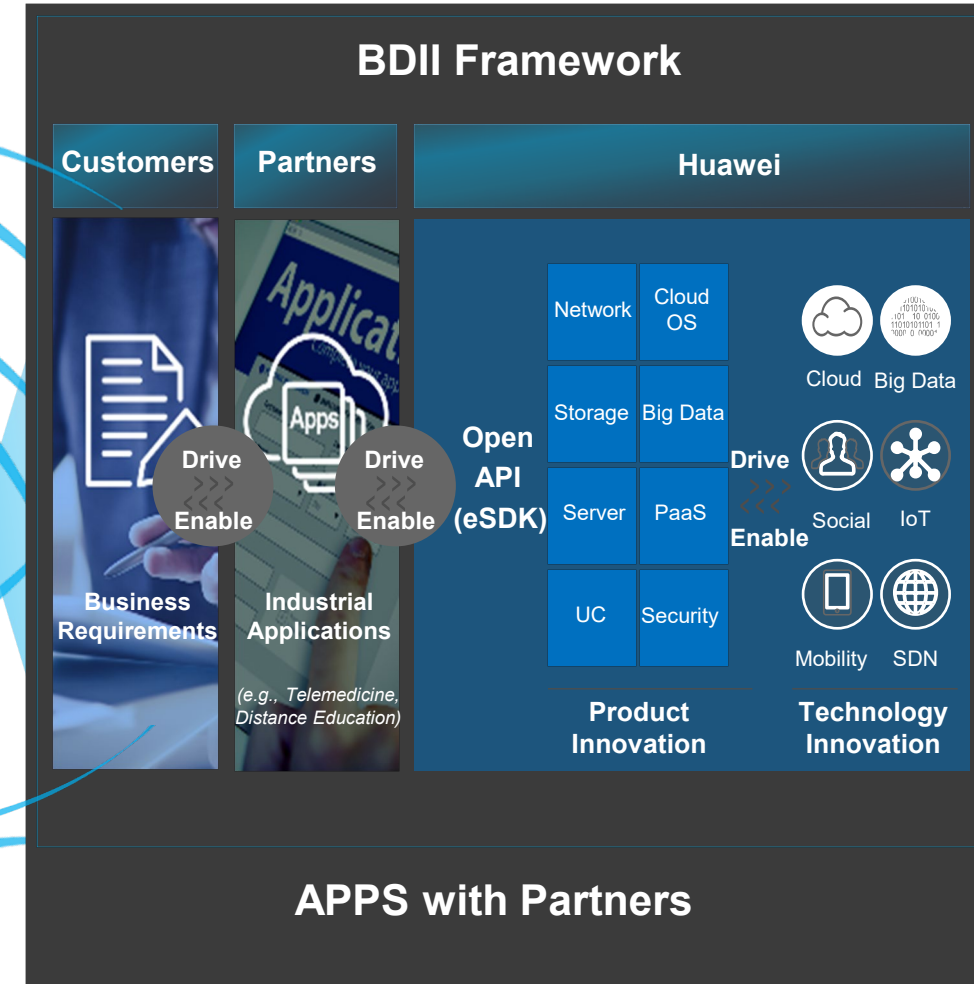
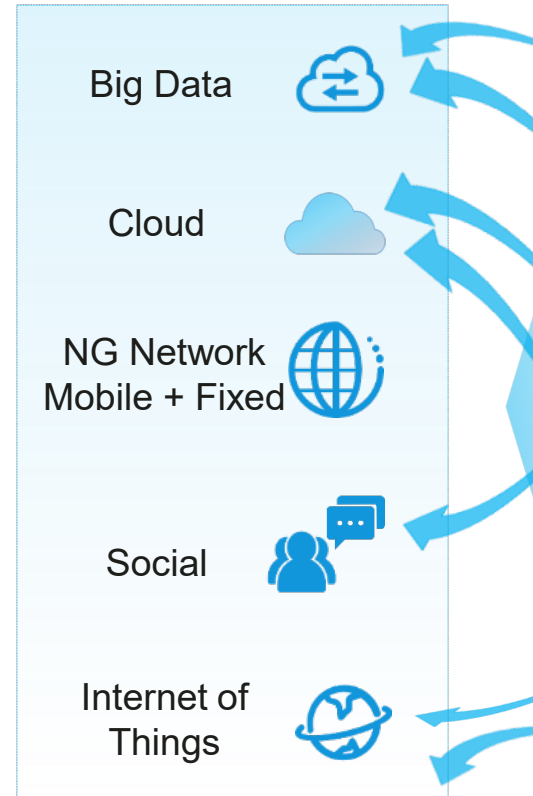


Successful Stories

Top 10 Higher Education Business & Technology Trends



Enabling ICT Technology

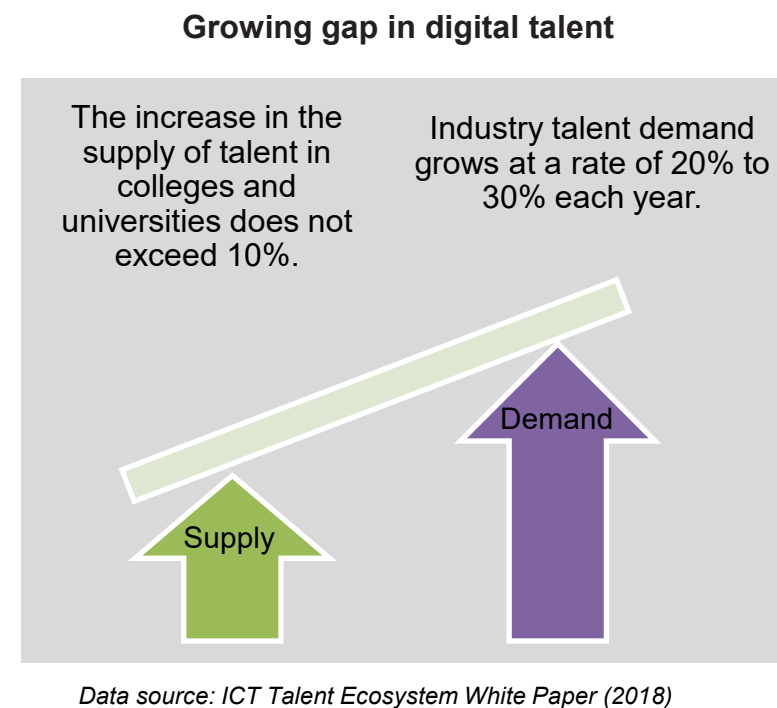
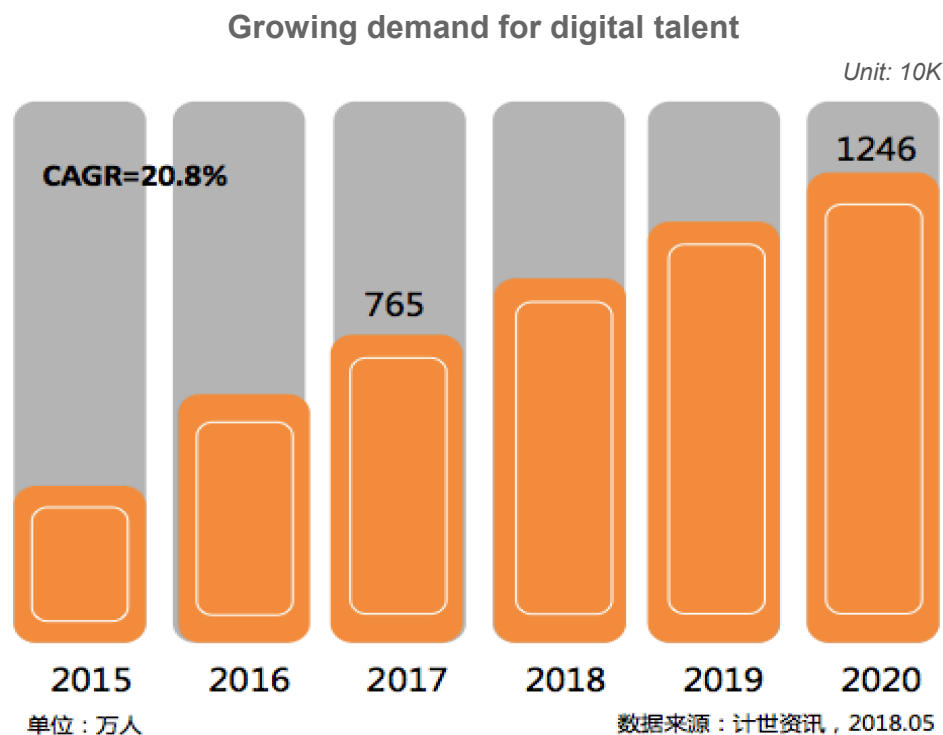


Source: Gartner (December 2020)


Digital economy development is faced with talent shortage

With the further advancement of digital transformation, the demand for digital talent is increasing rapidly in various industries. **Talent shortage** has become a key factor affecting the development of the digital economy.

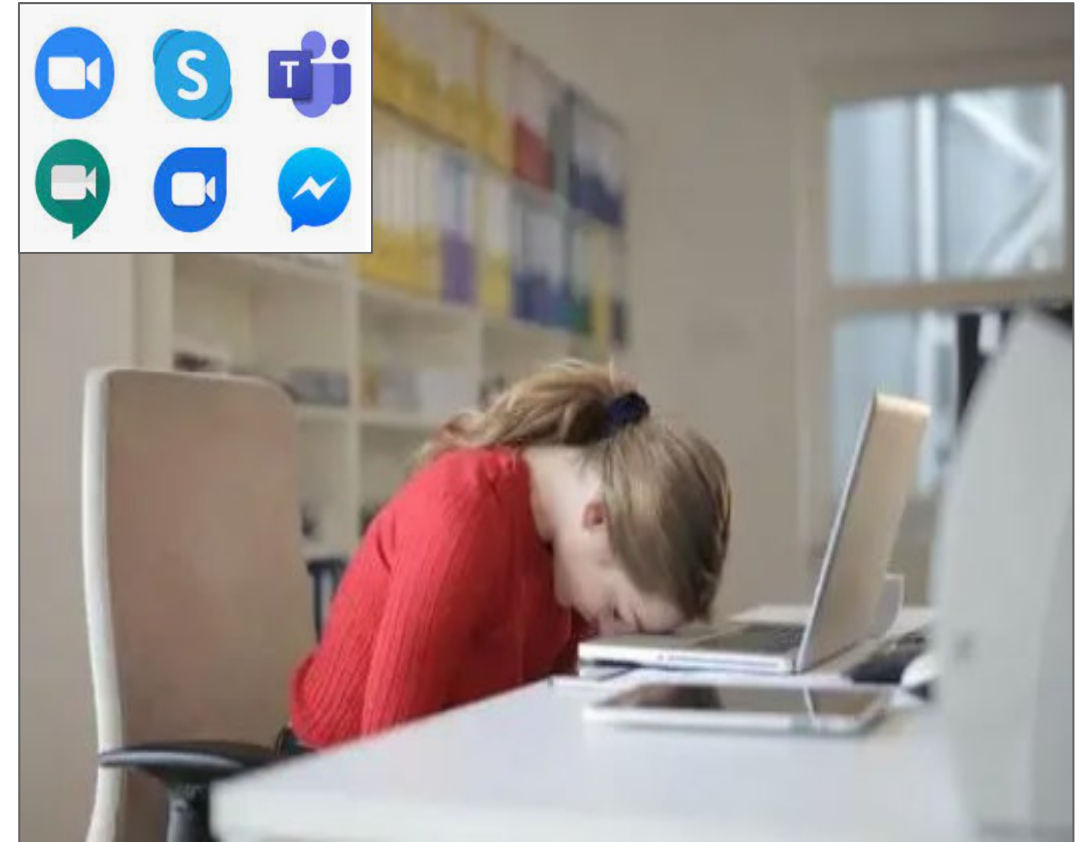
Digital talent refers to talent with ICT expertise and ICT complementary skills. It is a skill force for the development of **big data**, **AI**, **Internet+**, and **intelligent manufacturing**.



Education institutions' Sudden Move to Digital - Problem of **Disconnected** Teaching Process Data

Live Streaming Conferencing Tool 
Teaching Task Accomplished

- All live sessions are **not linked** to:
 - Course
 - Teacher
 - Class
 - Students
- **No student participation** data available during the live sessions
- **No effective class, student and teaching management**



Contents



Trends and Challenges

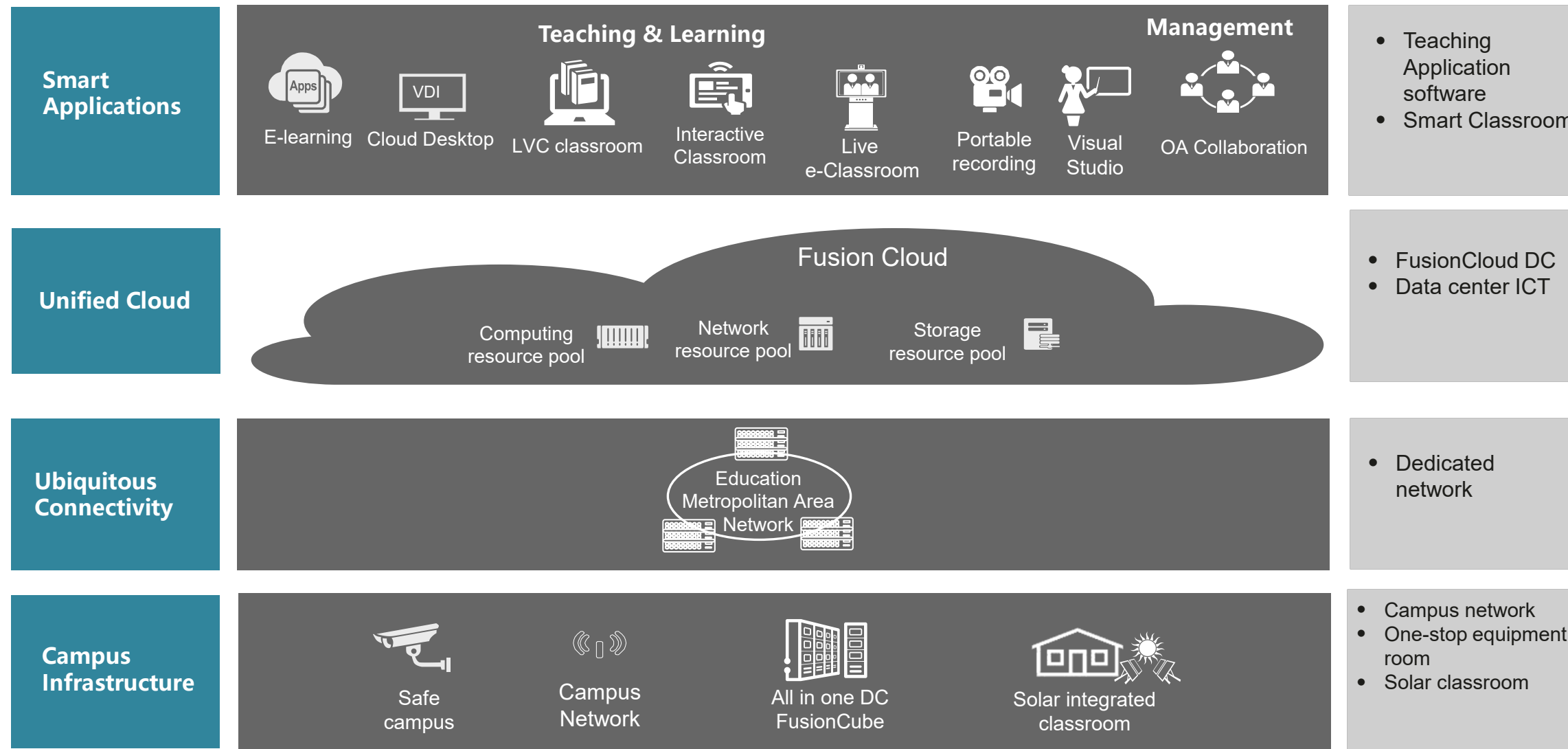


Huawei Smart Education Solutions










Successful Stories

Smart Education Solutions



Huawei Cloud - Ecosystem for Education

Digital Education Solution

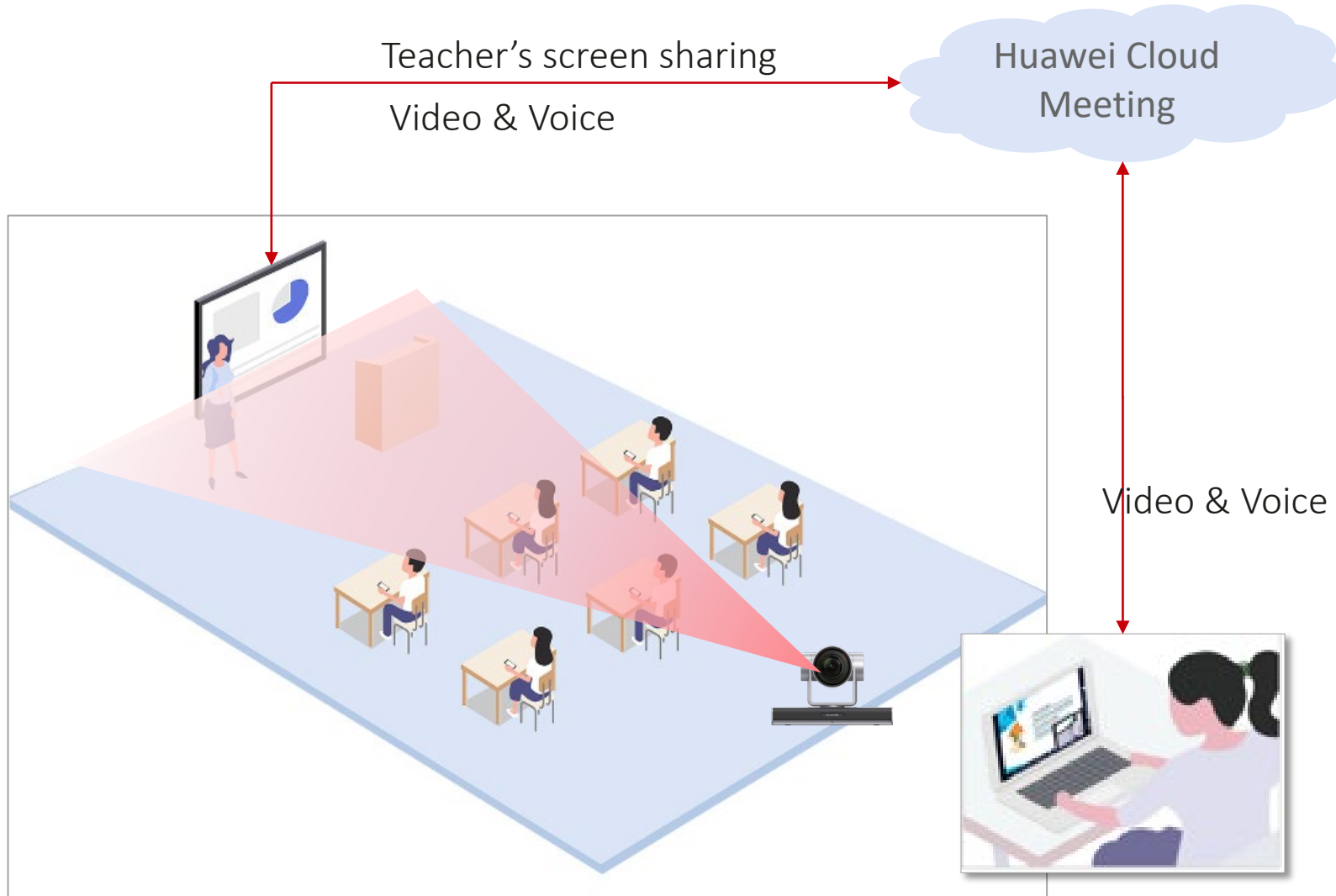
TMS Online Training Mgmt	LMS Online Learning Management	Interactive Video Learning and Hybrid Education	Hand on LAB Practical Training	Immersive Education	AI-Assisted Campus & Dormitory Mgmt	Online Exam & AI Proctoring
						
<ul style="list-style-type: none"> ➤ Course Mgmt ➤ Schedule Mgmt ➤ Enrolment Mgmt ➤ Lecture Mgmt ➤ Student Mgmt ➤ Facility Mgmt ➤ Evaluation Mgmt ➤ Billing & Payment 	<ul style="list-style-type: none"> ➤ E-Courseware ➤ E-Schoolbag ➤ E-Library ➤ E-Homework ➤ E-Classroom ➤ Resource Mgmt ➤ Knowledge Mgmt 	<ul style="list-style-type: none"> ➤ Interactive Video ➤ Video recording ➤ Web RTC + CDN ➤ OMO hybrid education ➤ Remote Education with IdeaHub + Cloud Meeting ➤ 1:1/1:N 	<ul style="list-style-type: none"> ➤ Professional ICT Courses & Training ➤ ICT LAB ➤ ICT Practice ➤ ICT Exam & Certificate 	<ul style="list-style-type: none"> ➤ AR/VR Immersive Classroom ➤ Virtual Lab ➤ STEM ➤ 3D Courseware ➤ 3D Portal of the school website ➤ Virtual campus 	<ul style="list-style-type: none"> ➤ Detect of Epidemic & Temperature ➤ Face Recognition ➤ OCR(image recognition) ➤ Vision & Behavior Analysis ➤ AI attendance 	<ul style="list-style-type: none"> ➤ Online Exam ➤ AI Proctoring ➤ Auto-Scoring



Stag Match Education & Training Group
Singapore, Malaysia, Australia, Philippines



Point Sol : HUAWEI Ideahub + Cloud Meeting + Ulearning LMS



Live Virtual Classroom Teaching

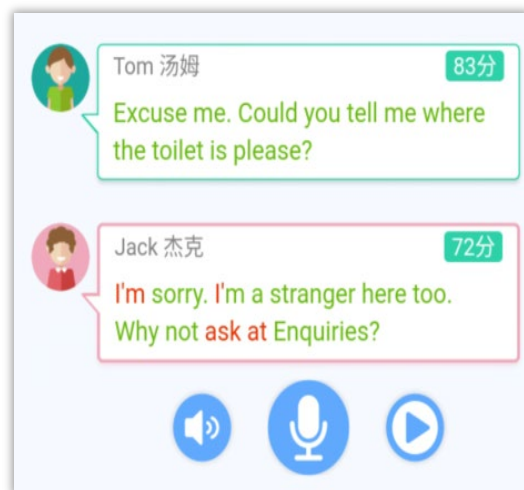
Ulearning LMS:

- Classroom/student management
- Class interactive tools
- Class presentation resources
- Class performance report

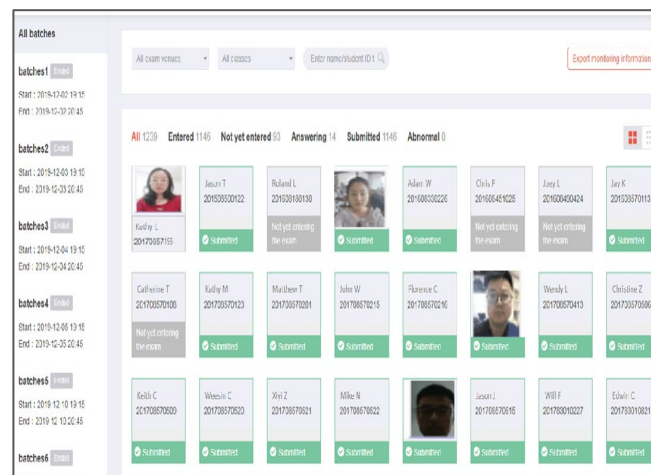
HUAWEI IdeaHub + Cloud Meeting

- Video-conferencing
- Screen sharing
- Multi-location real-time interaction
- Two-way interaction
- Classroom recording

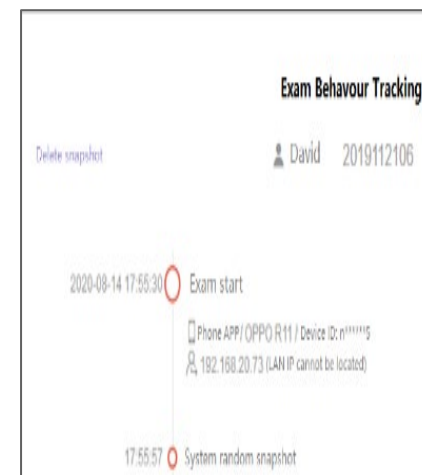
Smart Exam: Online Exam - Whole process management & AI Proctor with anti-cheating mechanism



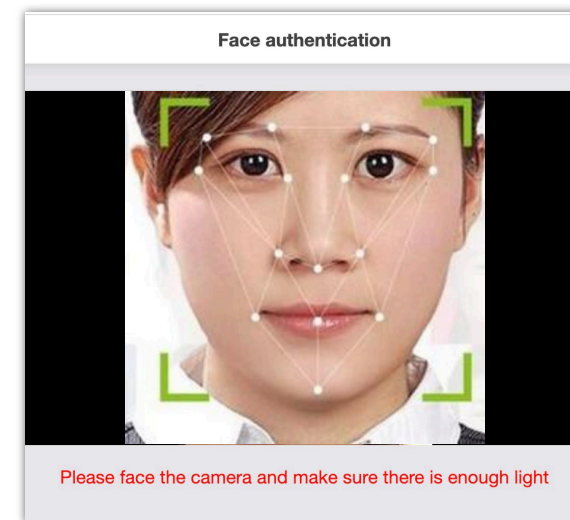
Oral English Evaluation



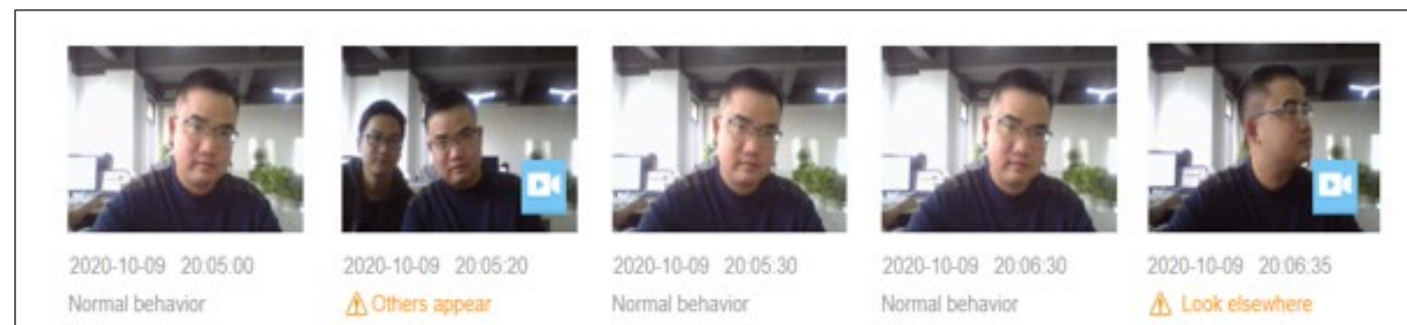
Exam Monitoring Station



IP & device tracking



Face verification



Examinee's behavior tracking & analysis

Point Sol : HUAWEI Cloud IaaS + Practice Cloud lab experiment

Practice Cloud Platform — Lab Operation Interface

Manual

Online QA

Lab Report

< 1 Boston House Price Forecast V...

Completed 100%

00 : 56 : 27

Next Lab

Lab List

Clean

Close

Manuals, reports, and online Q&A

jupyter notebook

click New --- TensorFlow2,

jupyter

Files

Running

Clusters

Select items to perform actions on them.

0

/

Code

huaweicloud_AI

ML_TensorFlow

samples

未命名.ipynb

Upload

New

Python 3

TensorFlow2

python3.6

Other

Text File

Folder

Terminal

jupyter

Untitled

File

Edit

View

Insert

Cell

Kernel

Widgets

Help

In []:

3 Introducing Dependencies

%autosave 10

Copy to Clipboard

#Prevent unnecessary warnings.
import warnings
warnings.filterwarnings("ignore")

Copy to Clipboard

Terminal - user@ecs-1255: ~/Desktop

Script started, file is /home/user/14-31-36 shell.log
(base) user@ecs-1255:~/Desktop\$ jupyter notebook

Operation interface

Lab tools

PC desktop

pycharm

dt-data

TECH EDUCATION

Lab Templates :Rich high-quality resources on the Practice Cloud platform

15

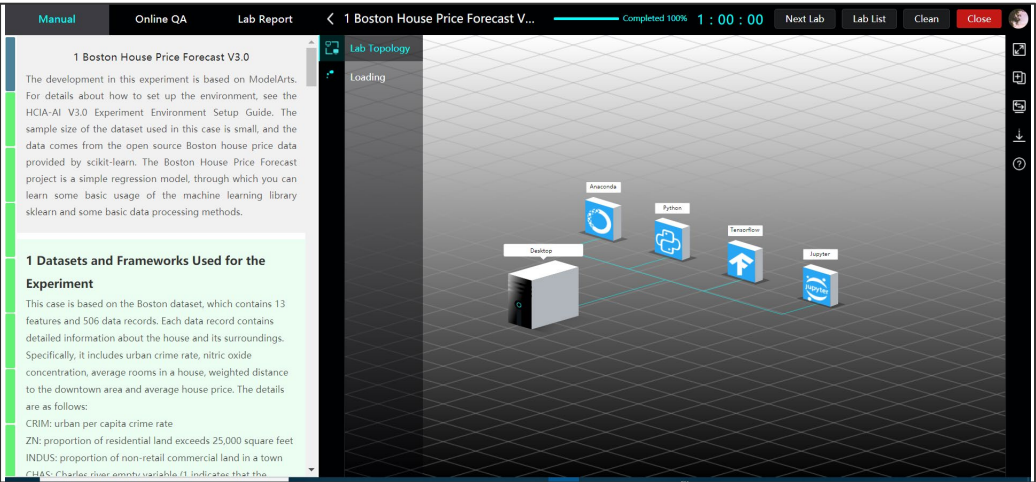
New ICTs:
AI, big data, 5G, network, security, cloud services, intelligent computing...

900 +

Cloud-based practices:
Hands-on experiments covering multiple application scenarios

3500 +

MOOC resources:
Resources such as videos, courseware, and cases



Contents



Trends and Challenges



Huawei Smart Education Solutions



Successful Stories

Disclaimer

Target audience	Rep offices, Education customers
Application scenario	<ul style="list-style-type: none">• Only for internal publication• Only authorized cases can be used when communicating with customers and partners
Cautions	<ol style="list-style-type: none">1. Not allowed to send external2. Not allowed to used as social media publications.

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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Live e-Classroom: main classroom

Videoconferencing system



HD video terminal

Display system



TV

Multimedia instruction



IDB



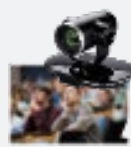
Integrated system for automatic tracking and directing



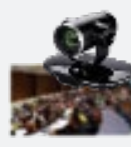
Automatic tracking



Close-up shot of the teacher



Panoramic view of students



Panoramic view of the classroom



Power amplifier



Ceiling-mounted microphone



Speaker

Solution scenarios

- Room size is about 50-120 m²
- 3 cameras reproducing 5 teaching scenarios
- Automatic tracking and intelligent directing: The main stream delivers automatic switchover between panorama view of the teacher or students, or close-up view of the teacher or blackboard area. While the content stream delivers courseware
- HD interaction; 1080p 60 fps dual-stream/CD quality; VME+H.264 HP ultra-low bandwidth
- 1080p HD recording/live broadcast/VOD; supporting the access of multiple terminals, anytime, anywhere

Solution Features

- Provide automatic tracking to take panoramic views of the podium and students, and close-up shots of teachers, with no need to carry any devices
- Display courseware throughout the class, so students no longer worry about taking notes while listening
- Support live broadcasting, recording, and online VOD.
- Interact and hold seminars with people at the distance learning classrooms

Live e-Classroom: branch classroom

Access to interactive teaching



CloudLink Board-65"

Audio/video interaction



TV-65"(optional)



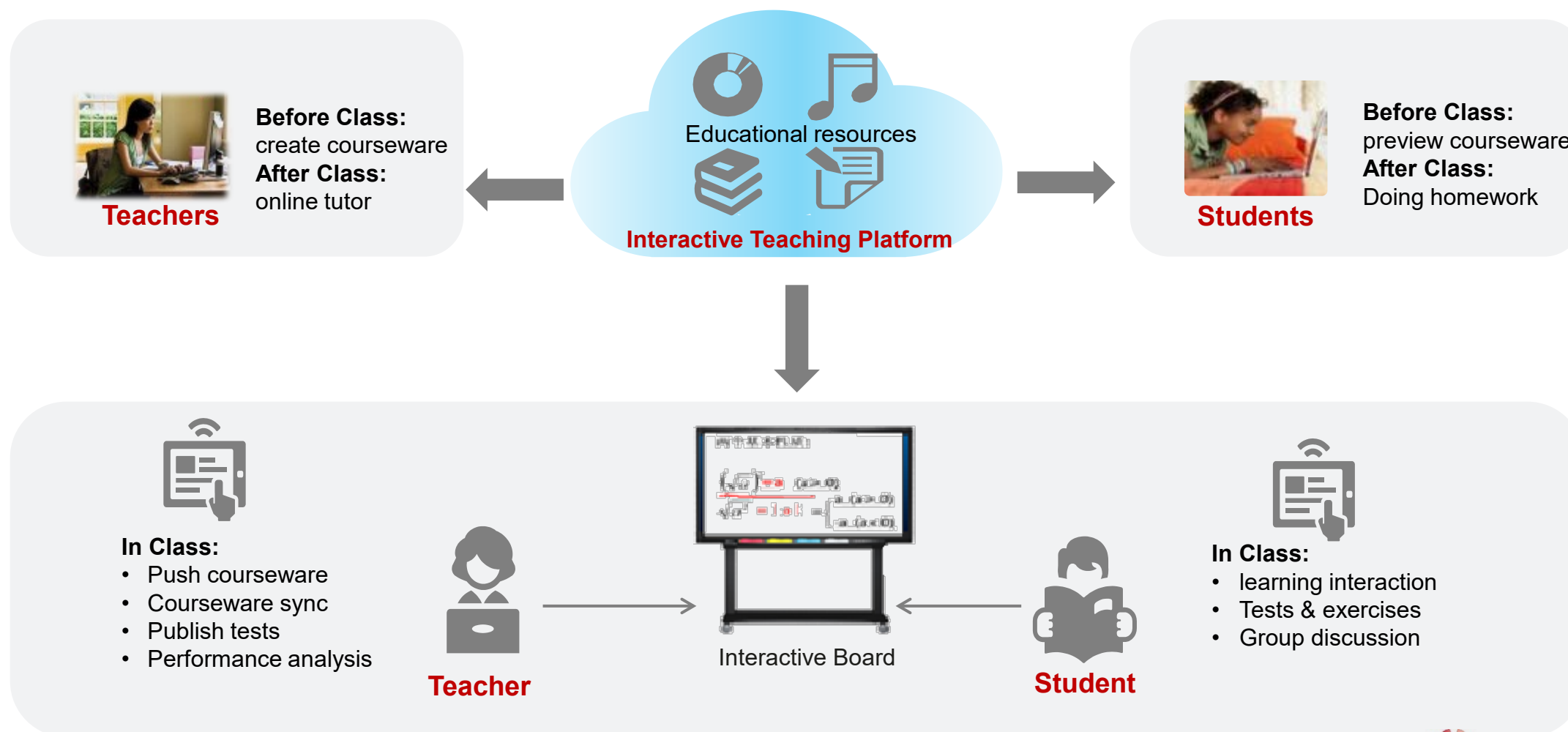
Solution scenarios

- Room size is about 50 m²
- Support local multimedia instruction, distance education, teacher skills training, etc.

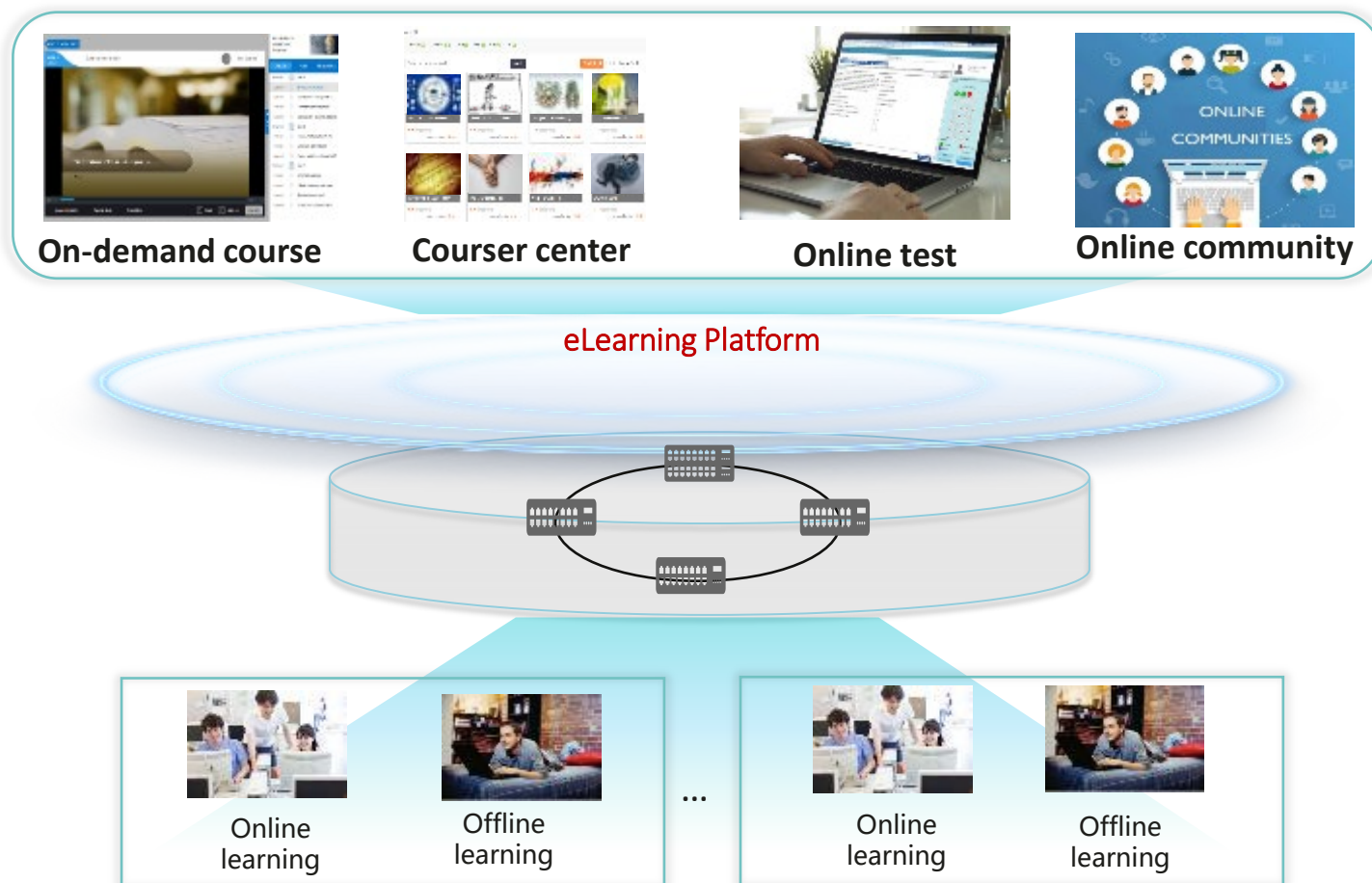
Solution Features

- Integrated design with built-in 65-inch touch screen, 5K ultra HD camera, arrayed MIC, codec, speaker and stylus, which can cover all the scenarios.
- Rich multimedia applications for teaching with local projection, touch-based writing, one-click screen sharing, etc.
- Super HD interaction: 1080P video + 4K data/CD quality; VME+H.265 ultra-low bandwidth
- Fluent whiteboard collaboration experience under local or distance instruction
- Support split screen display for comparison when multi-signal sources connected, and auxiliary stream/application screenshot annotation
- One-click to share with AirPresence Key

Interactive Learning Solution



E-Learning: Enable Learning Anywhere, Anytime



Unified education platform


- Build a national education resource center storage best resources.
- Enrich the teaching contents, stimulate students' enthusiasm.

Multi-aspect learning quality

- Tracking the learning based on learning plans.
- stage assessment of learning effect based on the examination points.
- fair exam management based on on-line examination.

Seamless Collaboration in All Office Scenarios

Personal Office



TE Desktop & Mobile




Collaborative Meeting



IdeaHub

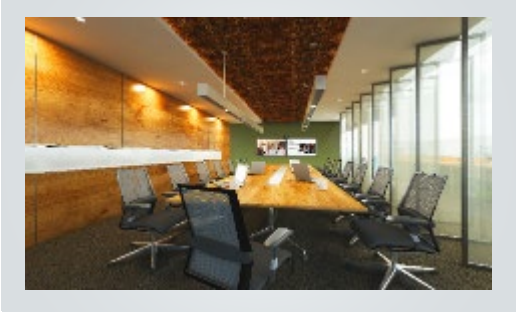


Professional Meeting Room




CloudLink RoomPresence


TE20/30 CloudLink Box 300/600



High-End Consultation Room



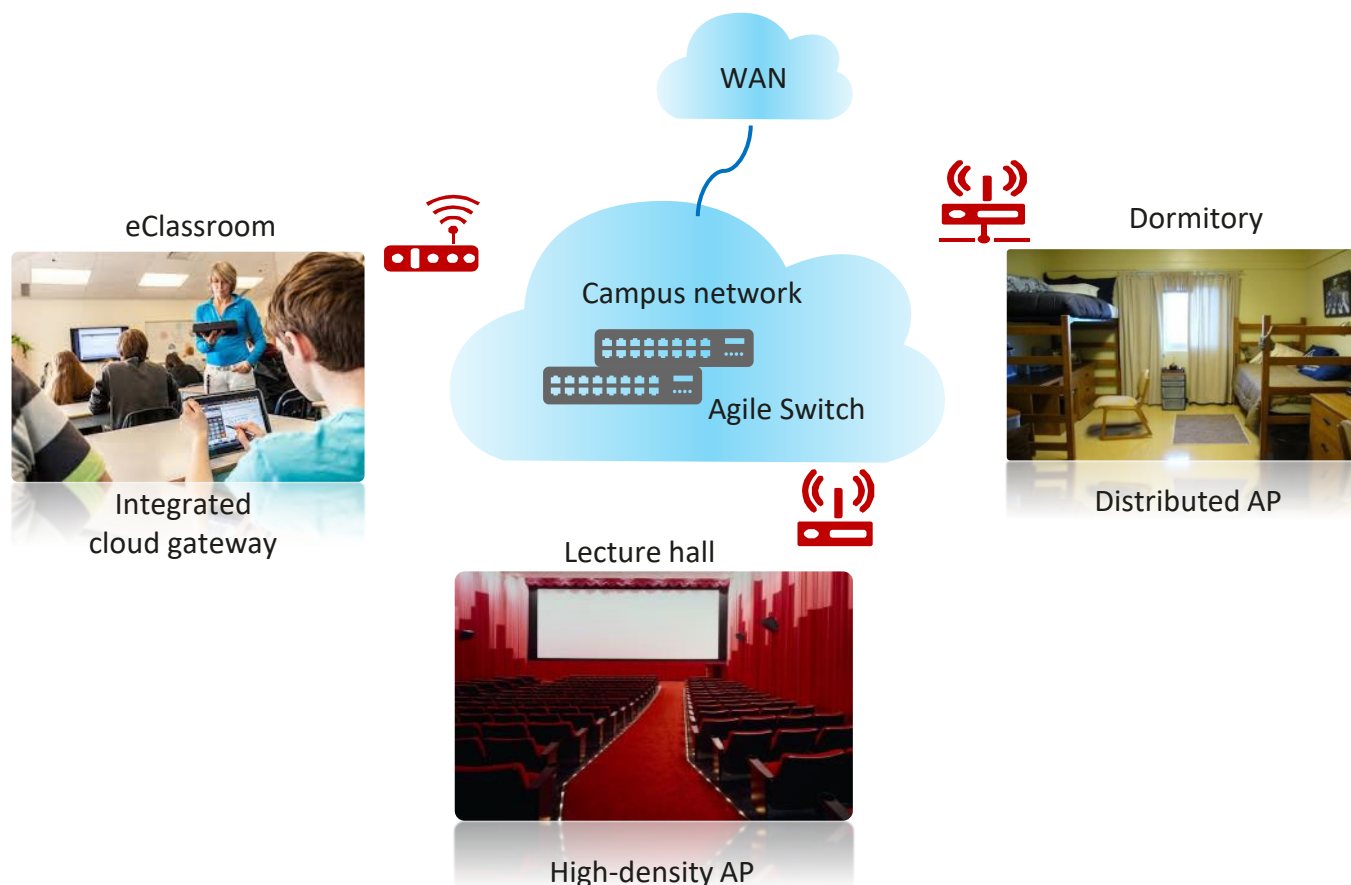
Panoramic Telepresence



MAX PRESENCE



Wireless Campus Enables Learning Anytime and Anywhere



Cloud-managed Education Network Saved OPEX by 80%+

Distributed Access Points (APs)

Agile network connections in dormitories without dead zones

- Single AP coverage, enabling full signal coverage
- Independent RF module, improving performance

High-density AP

Allowing ultra-speed Wi-Fi experience in large-scale activities

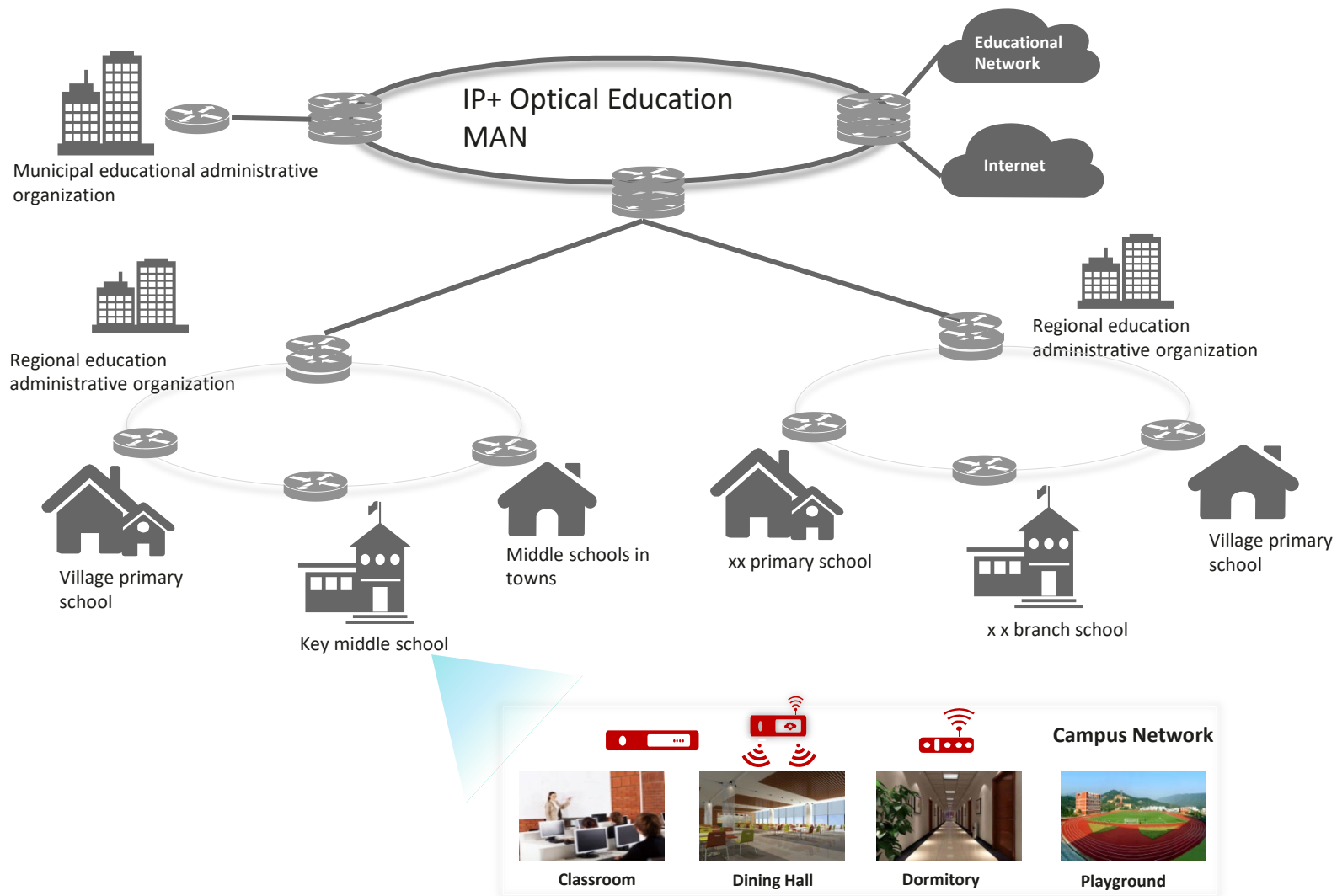
- Multi-User Multiple-Input Multiple-Output (MU-MIMO) user access performance improved by 50%
- Customized antennas, interference decreased by 30% and performance improved by 20%

Integrated cloud gateway

Making interactive classroom deployment easier

- Unified access from eWhiteboards, projectors, mobile devices, and others
- Built-in AP supports teacher-student interaction in eClassrooms

Education Network Support Mass Educational Resource Sharing



High-speed core network

- Two-layer network structure
- VPN multi-service transmission ensures service quality

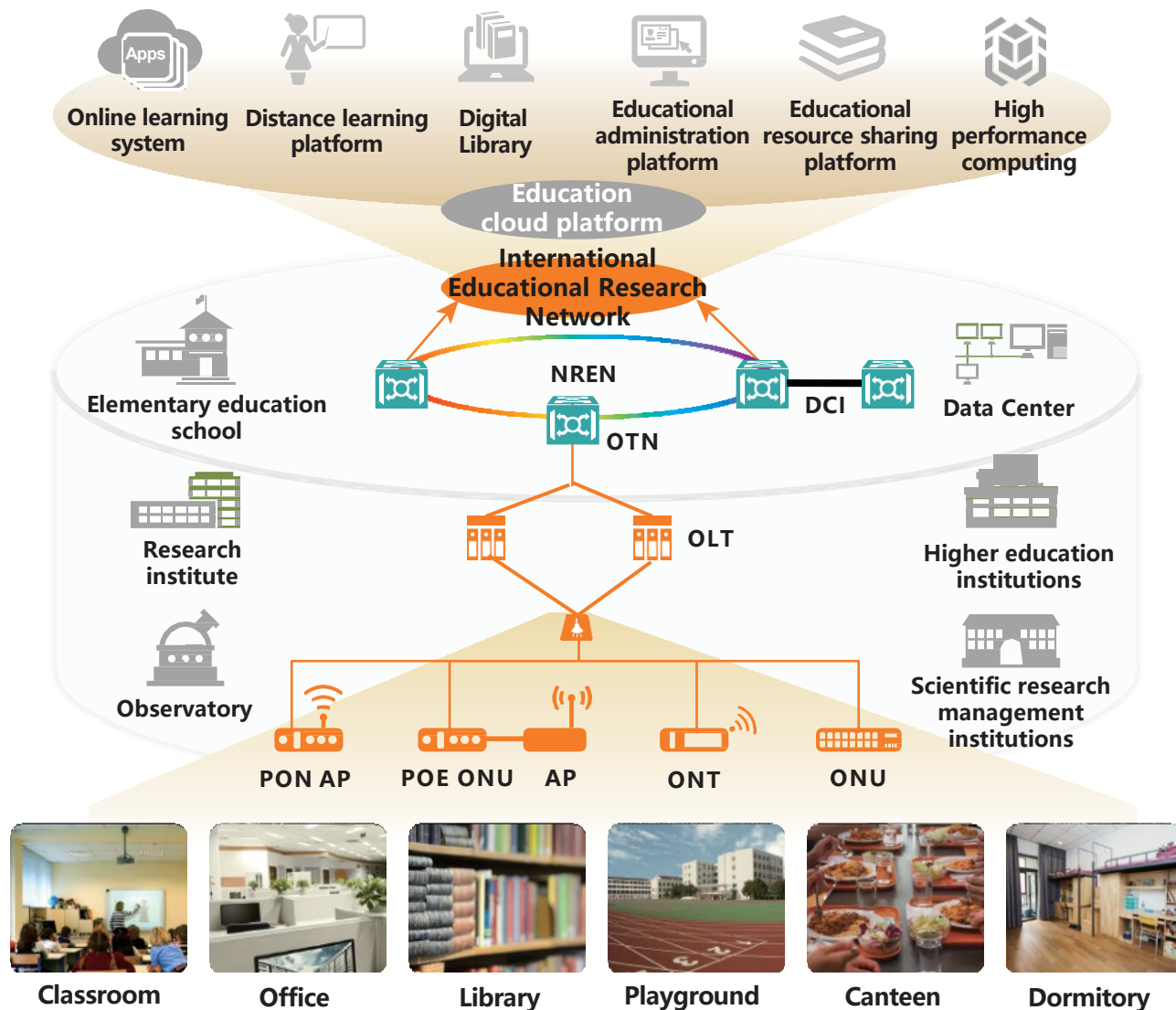
Highly reliable MAN

- Fast convergence of hardware Bidirectional Forwarding Detection (BFD) in 200 ms enables uninterrupted education applications
- 3G network backup for access to the network at any time

High-quality access network

- MPLS VPN multicast scheme ensures the service quality of educational videos
- Five-level QoS scheduling ensures school teaching services first

Huawei Campus OptiX Solution



Full scene on demand deployment

- Campus full scene coverage
- More flexible business deployment
- Bandwidth on demand deployment



Integration and innovation

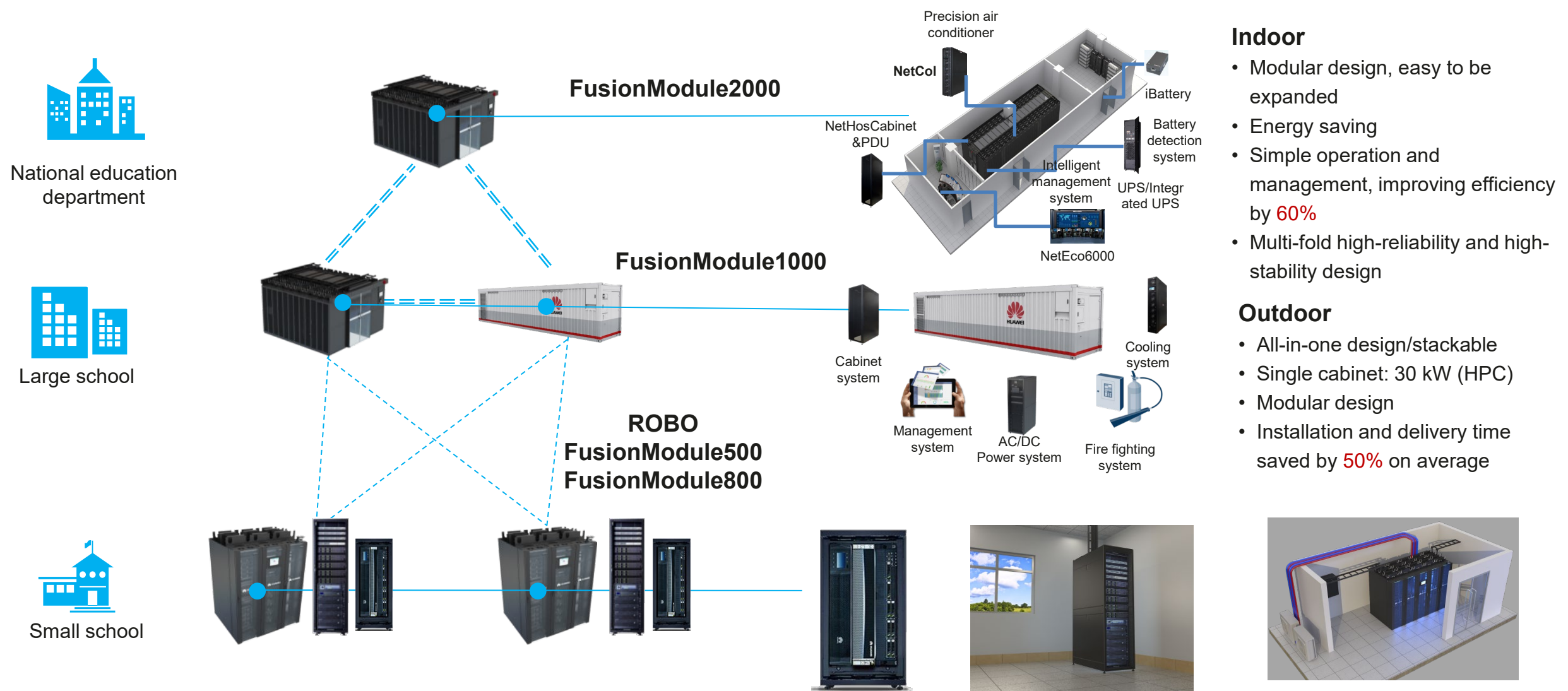
- Wi-Fi&IoT&Tri-playOne fiber carrying
Network construction cost saving 30%
Efficiency improvement 50%
- IP+PON all-optical architecture
GPON/10GPON/50GPON in one platform
Sustainable evolution for the future



Unified management

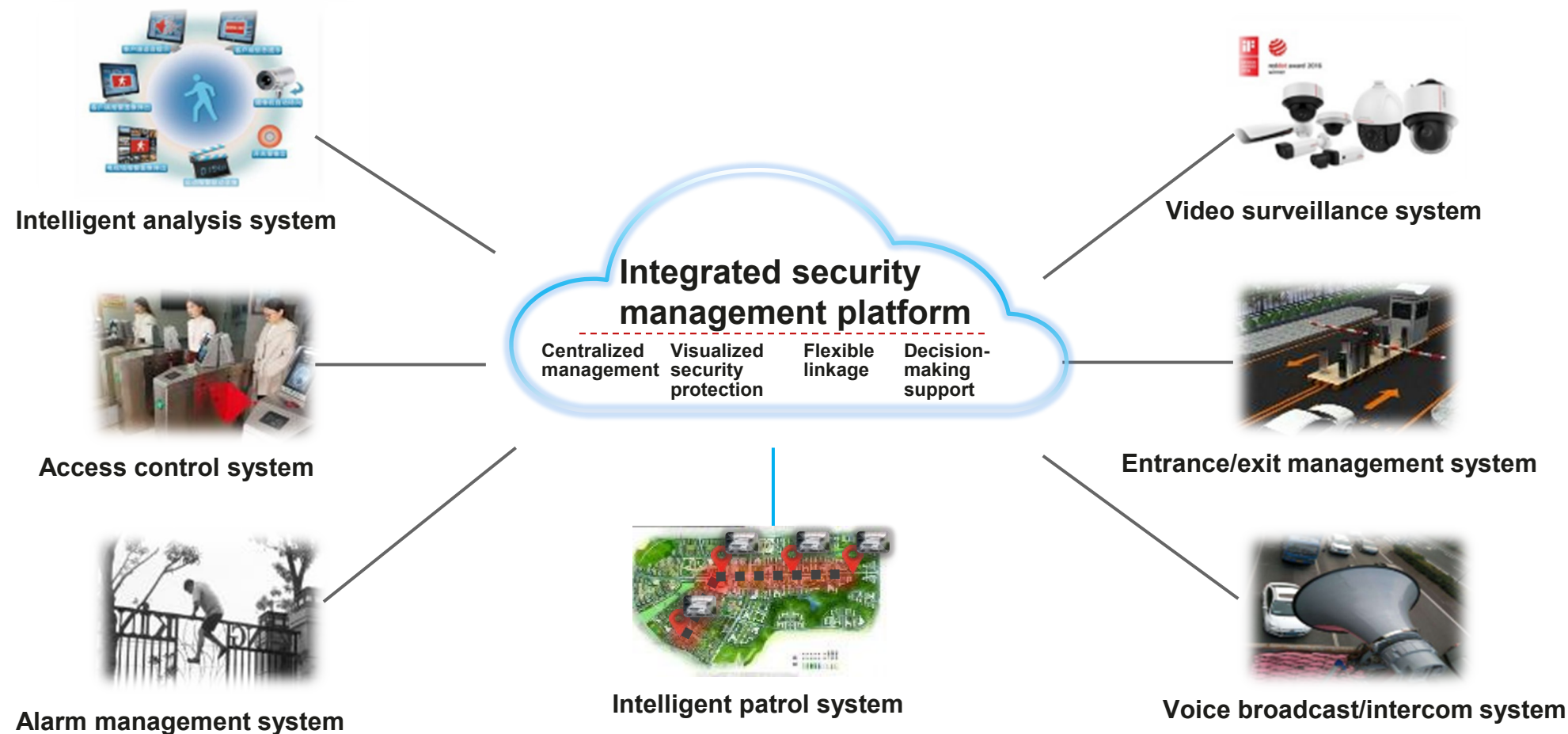
- Passive ODN is maintenance free and the failure rate is reduced by 70%
- Esight unified management, ONU device plug and play, minute level service
- Ont WiFi batch configuration, maintenance efficiency increased by 40%

Modular Data Center: Enable Flexible Expansion and Quick Deployment



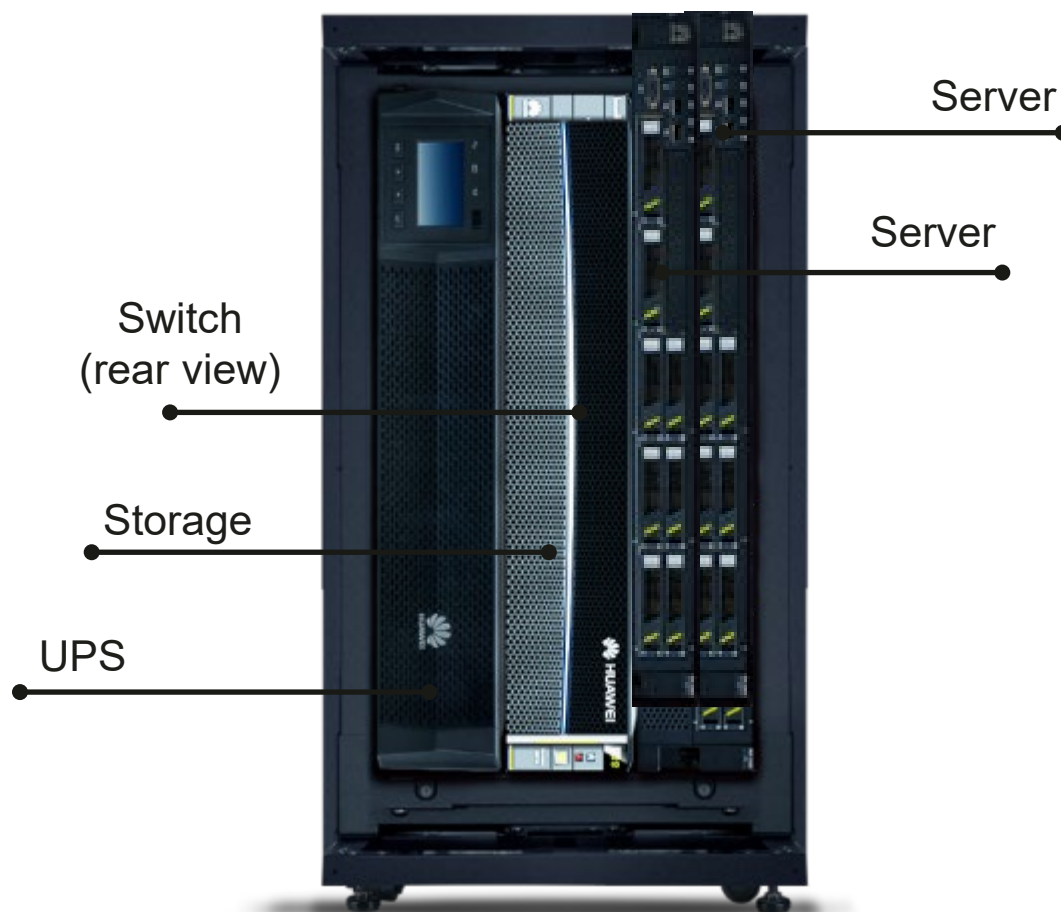
- Indoor**
- Modular design, easy to be expanded
 - Energy saving
 - Simple operation and management, improving efficiency by **60%**
 - Multi-fold high-reliability and high-stability design
- Outdoor**
- All-in-one design/stackable
 - Single cabinet: 30 kW (HPC)
 - Modular design
 - Installation and delivery time saved by **50%** on average

Safe campus : Full-Scenario security management and control



Huawei Campus Security Solution focuses on **"incident processing"** and is constructed based on **"1 platform and 7 systems"**. It features centralized management, visualized security protection, flexible linkage, and decision-making support and implements systematic, secure, intelligent, and visualized management.

Campus One-Stop Data Center Solution



ROBO: remote and branch offices

High integration

- Highly integrated cabinet, containing servers, storage devices, network devices, and UPS, with the dimensions (H x W x D) of 600 mm x 400 mm x 950 mm

Full-service support

- Support for the running of the campus management system, VDI classrooms, video surveillance system, and file server, and support for virtualization to improve reliability

Support for customization

- Compact solutions can be customized based on customer requirements.

Simplified O&M

- Quick deployment and fast service delivery; unified management and simplified O&M by eSight

Different Size for Different Scenarios



Plug & Play

All-in-one cabinet delivery with zero on-site configuration empowers a full-stack edge data center

Edge site initialization within **2 hours**



Attendance-Free

Remote management of branches devices and resources

Reduce 65% cost of operations



Edge-Cloud Synergy

Applications deployed from center to branches, branch data backup to cloud

Shorten 50% time for online new applications

