LEVERAGING SMART TECHNOLOGIES IN HKU LIBRARIES: INNOVATING AND ENHANCING SERVICE DELIVERY

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IT Manager
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The University of Hong Kong

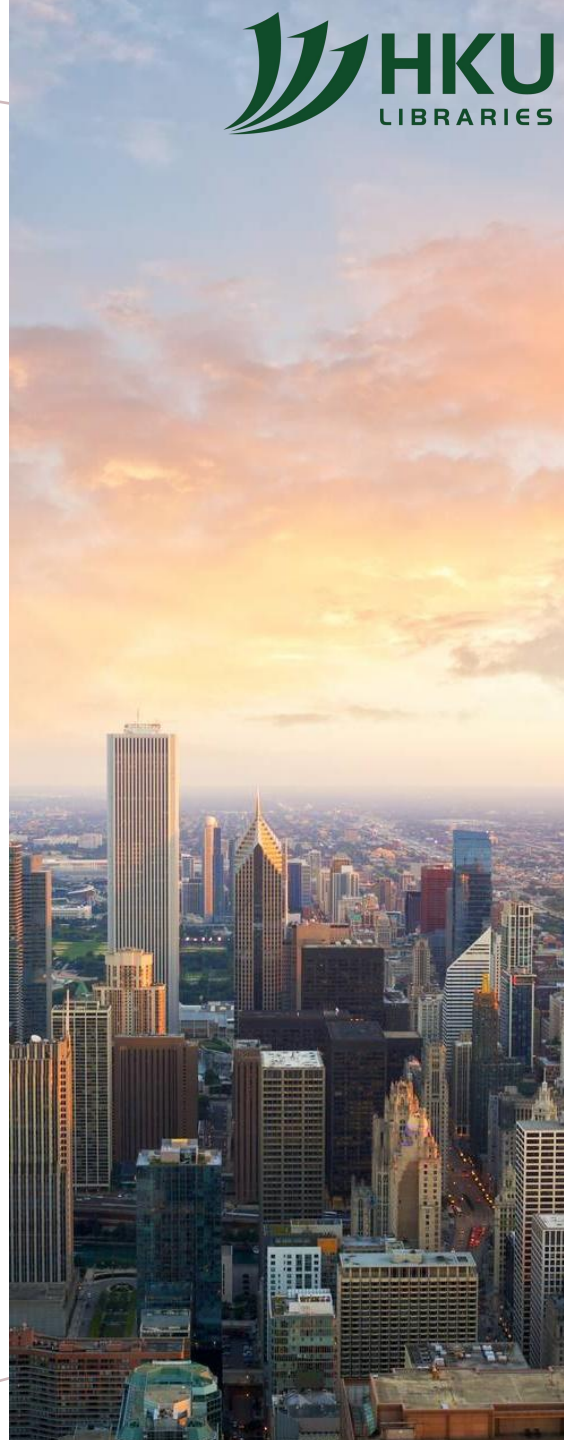
Smart technologies

Audio Visual

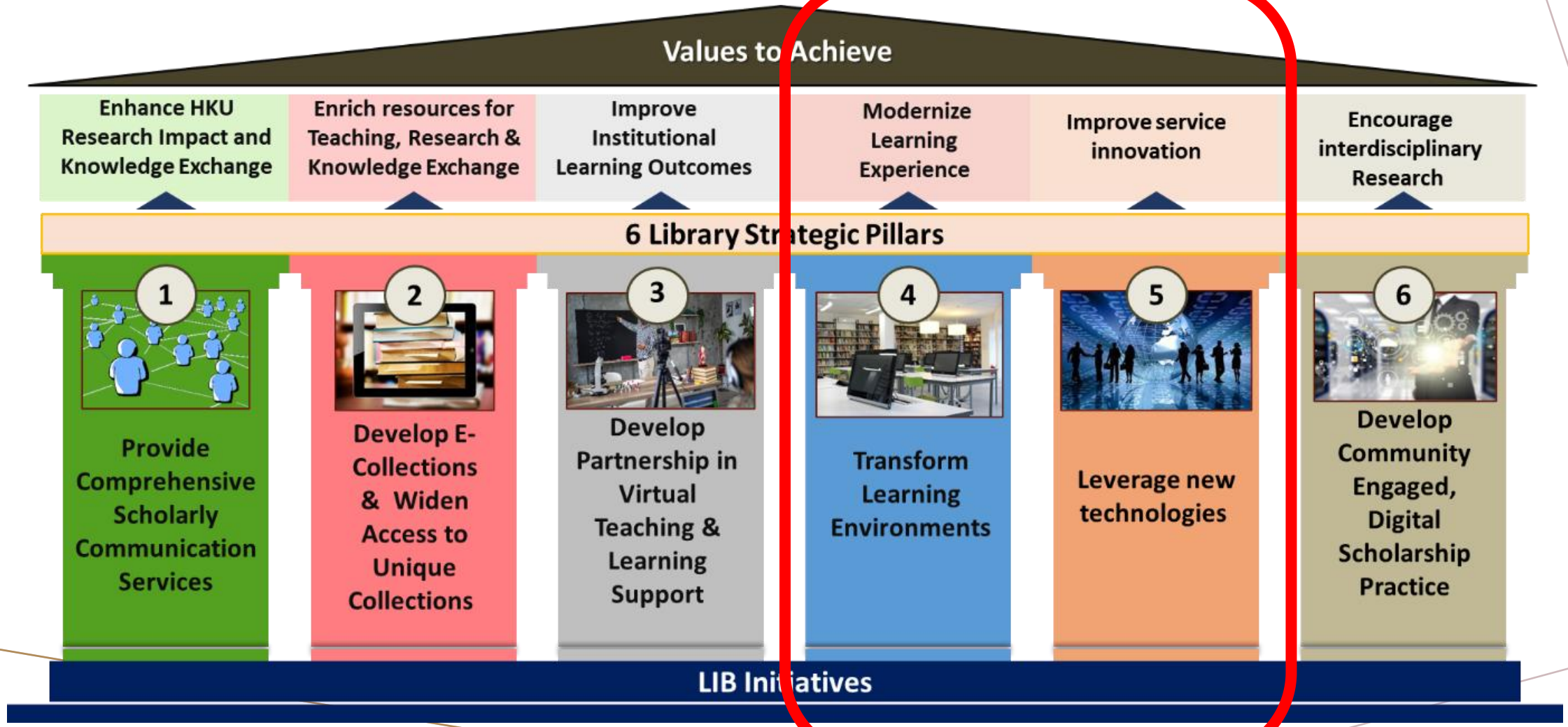
IoT Based Devices

Virtual counter and service

What next …



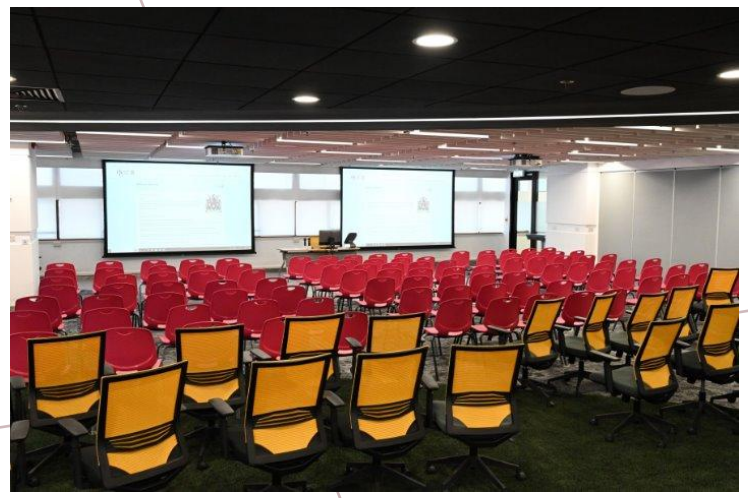
STRATEGIC FRAMEWORK IN HKUL (2021-2025)

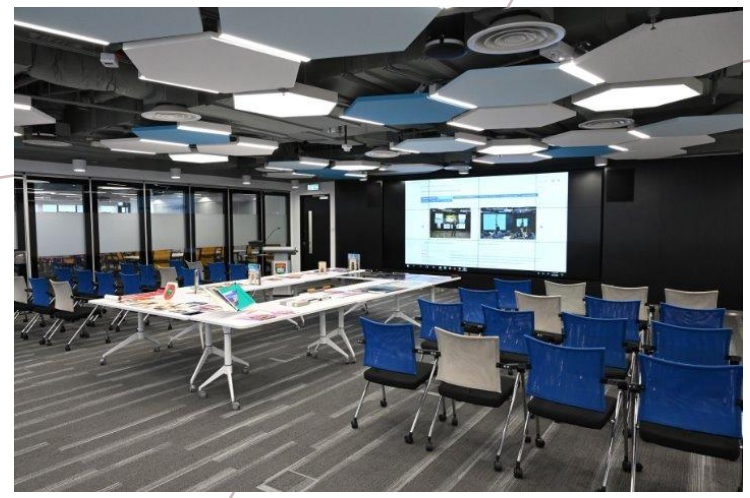


Audio Visual

Integrate SMART AV Design in HKU's learning space

- User self-operate
- Hybrid Teaching and Learning ready
- Wireless and mobile first experience
- Audio Clarity on Voice





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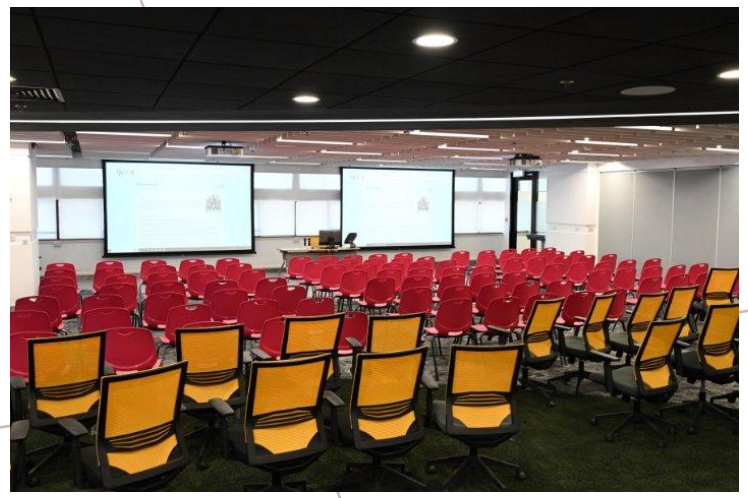
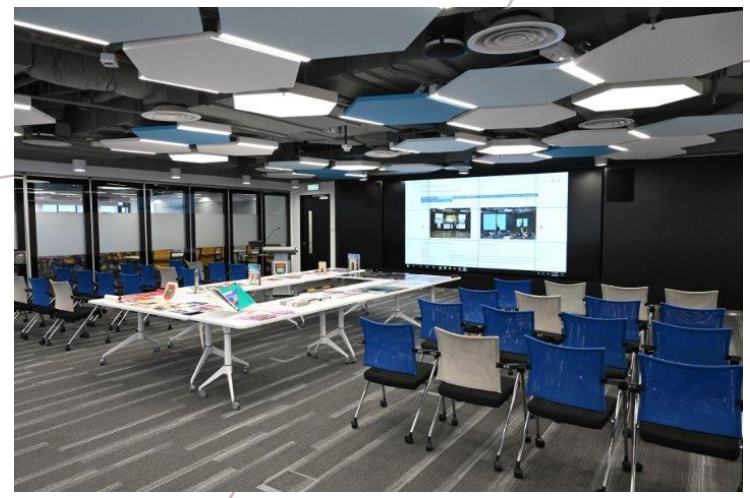
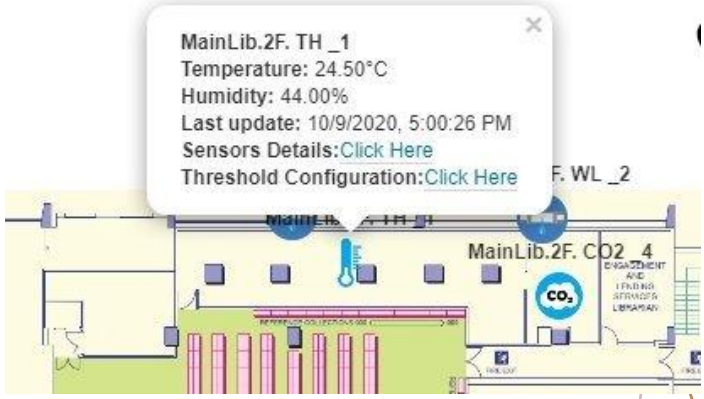
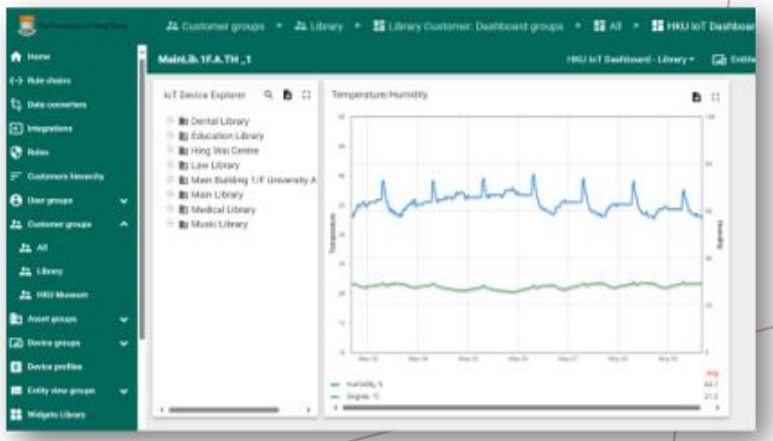




IoT BASED DEVICES

- Battery powered IoT devices (LoRaWAN based)
- Sensing environmental (Temperature, Humidity and CO2) Levels in 10 min intervals
- 100+ devices deployed
- Deployed in learning space, processing rooms, meeting rooms, closed storage area

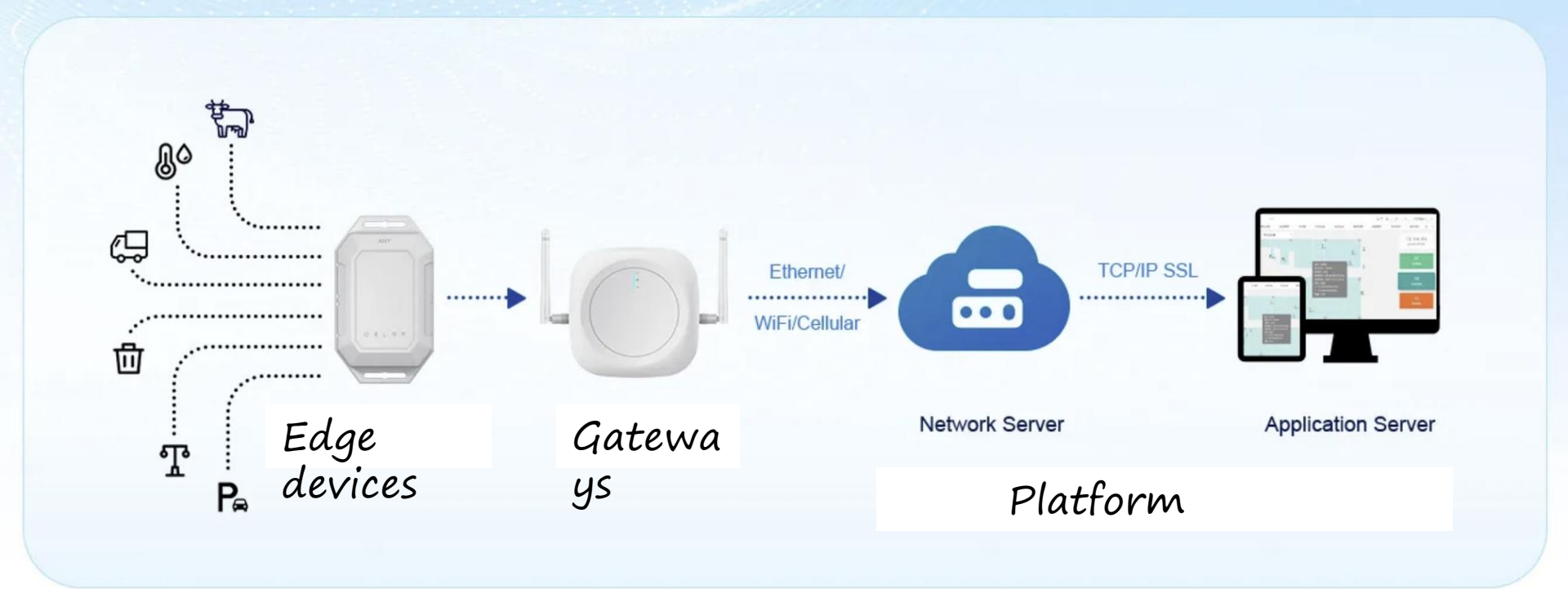


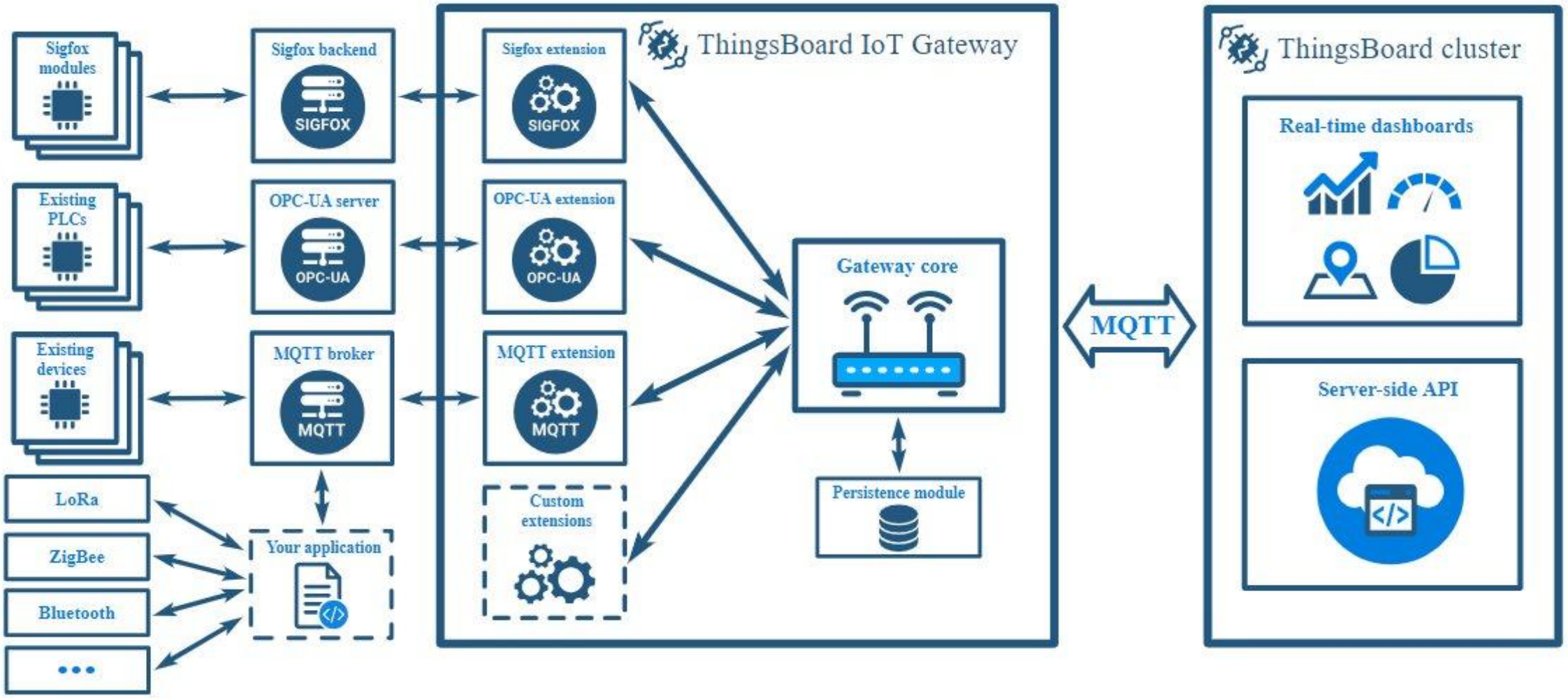


- Dashboard: Trend graphs of telemetry information
- Alarms with email alert

THE IoT PLATFORM HAVE THREE PARTS

- Platform
- Gateway
- Edge device




Sigfox modules
Existing PLCs
Existing devices
LoRa
ZigBee
Bluetooth
...
Sigfox backend
SIGFOX
OPC-UA server
OPC-UA
MQTT broker
MQTT
Your application
ThingsBoard IoT Gateway
Sigfox extension
SIGFOX
OPC-UA extension
OPC-UA
MQTT extension
MQTT
Custom extensions
Gateway core
Persistence module
MQTT
ThingsBoard cluster
Real-time dashboards
Server-side API

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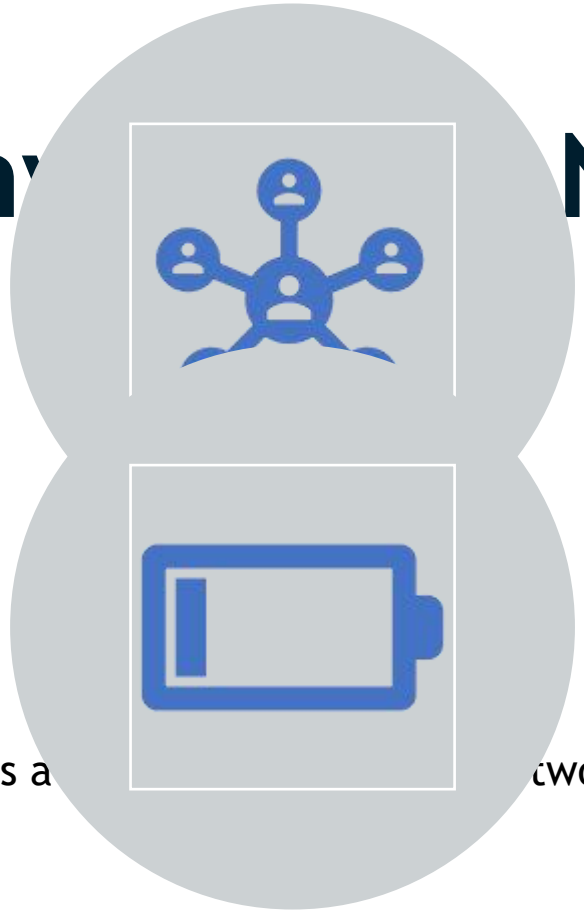

It is a twork

Low-power and long-distance

Wire ocol

High nterference es tance ar s uri (d-
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IoT PLATFORM (ThingsBoard)

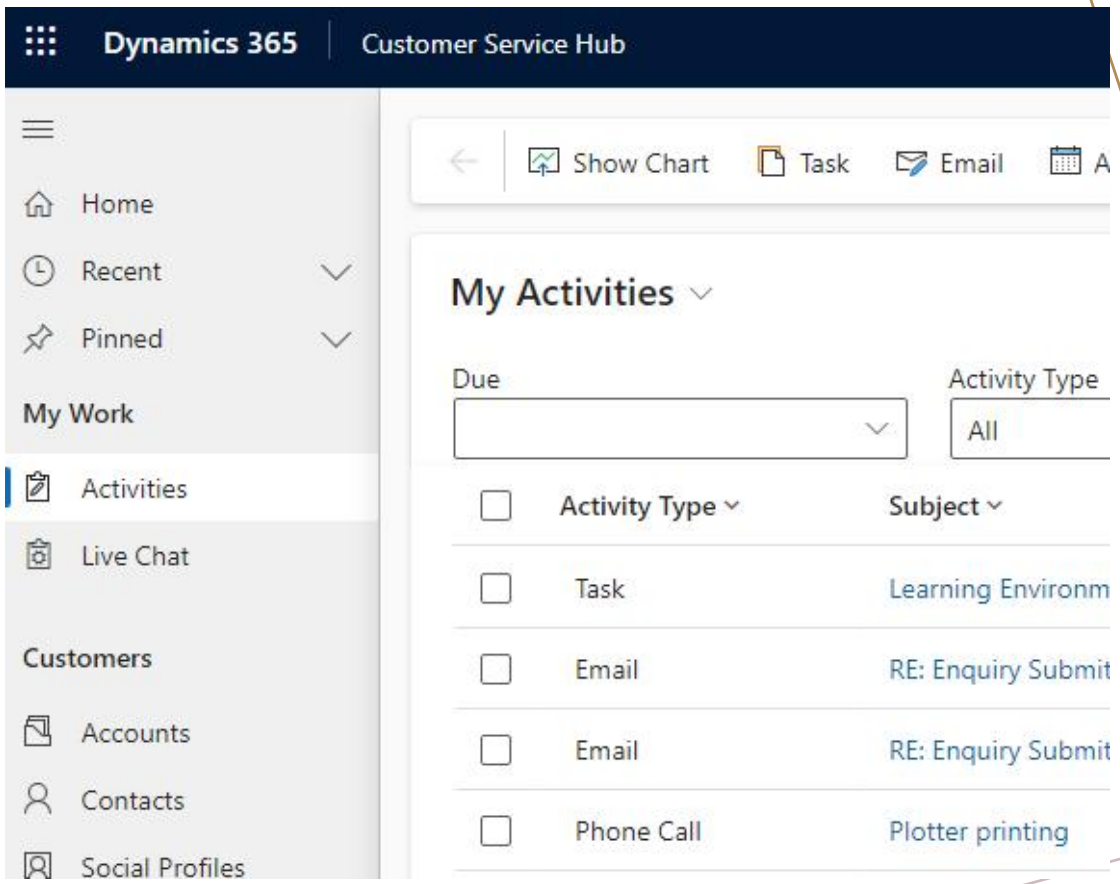
Demo link

VIRTUAL COUNTER AND SERVICES

MS DYNAMICS 365 CUSTOMER SERVICE HUB (D365CS)

Enhances our service

- A unified view of service issues for faster resolution
- Dashboards for monitoring important data
- Activities tracking for user interactions
- Case management for tracking requests and issues



D365 link

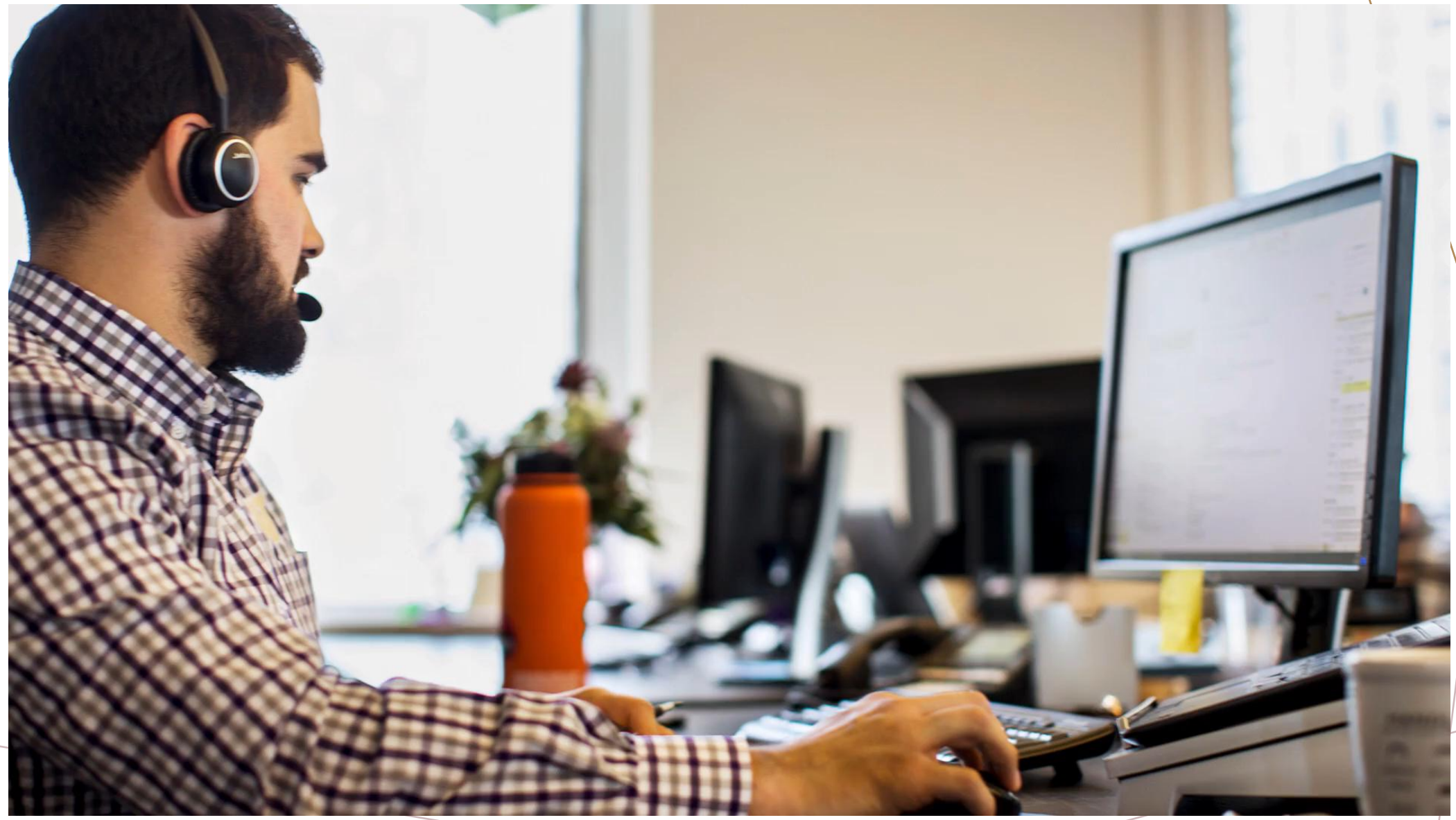
WORKFLOW OF D365CS

Before

After

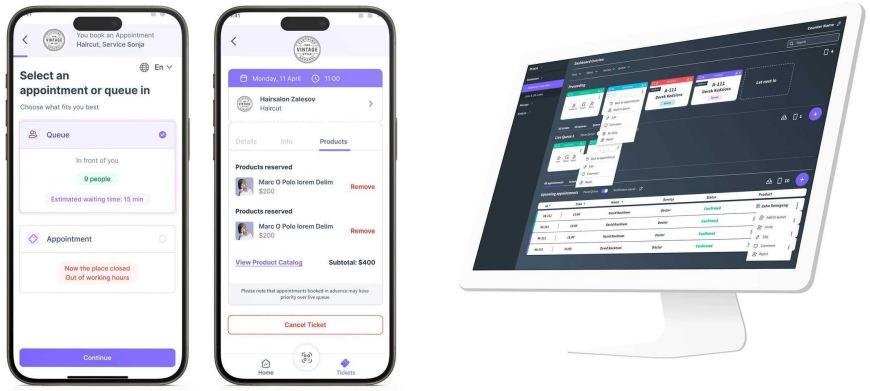
D365 link

D365CS Video

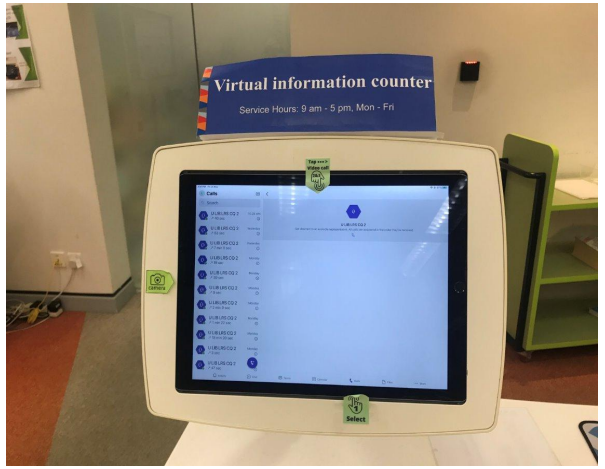


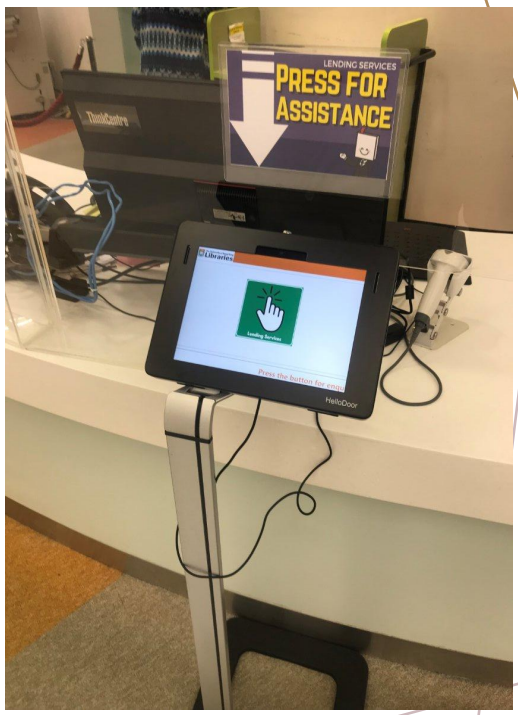
STAFF-LESS COUNTER - MS TEAMS AND SMART QUEUE

- MS Teams intercom - connect patrons with librarians and back-office staff
- Smart queue management and appointment booking system (Cloud Based Web App , 2meter.app)



Smart queue





Hellodoor (MS Teams intercom)

SMART QUEUE (2meters)

WHAT NEXT …

CRM (Constituent Relationship Management)

Robotics (lift control and moving cross campus)

Self-pickup Station

Self-Service Kiosk

Smart-learning space seat occupancy and reservation

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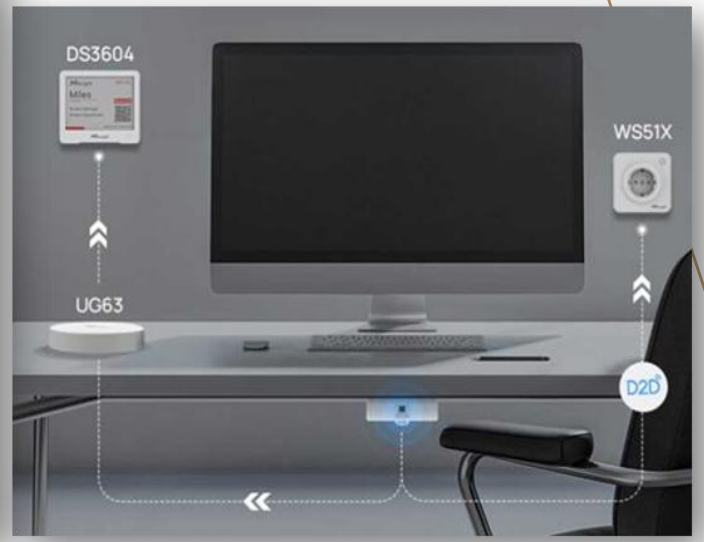

Milesight

HOW TO CHOOSE SMART TECHNOLOGIES

- Understand the needs of HKU Libraries
- Choose technologies suitable for the library space and its users
- Ensure the technologies are user-friendly and easy to operate
- Prioritize technologies that enable hybrid teaching and learning

THANK YOU

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