

WEBINAR

Digitalizzazione nel mondo del lavoro: cosa cambia e quali competenze

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AI in logistics and heavy duty: a picture on the future

Breve presentazione di Advantech e della business unit SloT

Alcune applicazioni in cui siamo presenti

Uno sguardo sul futuro della logistica e dell'heavy duty incentrato sull'AI

ADVANTECH

Mission Enabling an Intelligent Planet

Revenue

USD \$2.31 Billion, YoY 10.6% (2022)

Market Cap

USD \$8.83 Billion (Jan., 2023)

Worldwide Employees

8,900

Service Field

Industry 4.0, Industry IoT,
Embedded Computing,
Smart City (Medical, Retail, Logistics)

Serve Worldwide IoT Solution Integrators



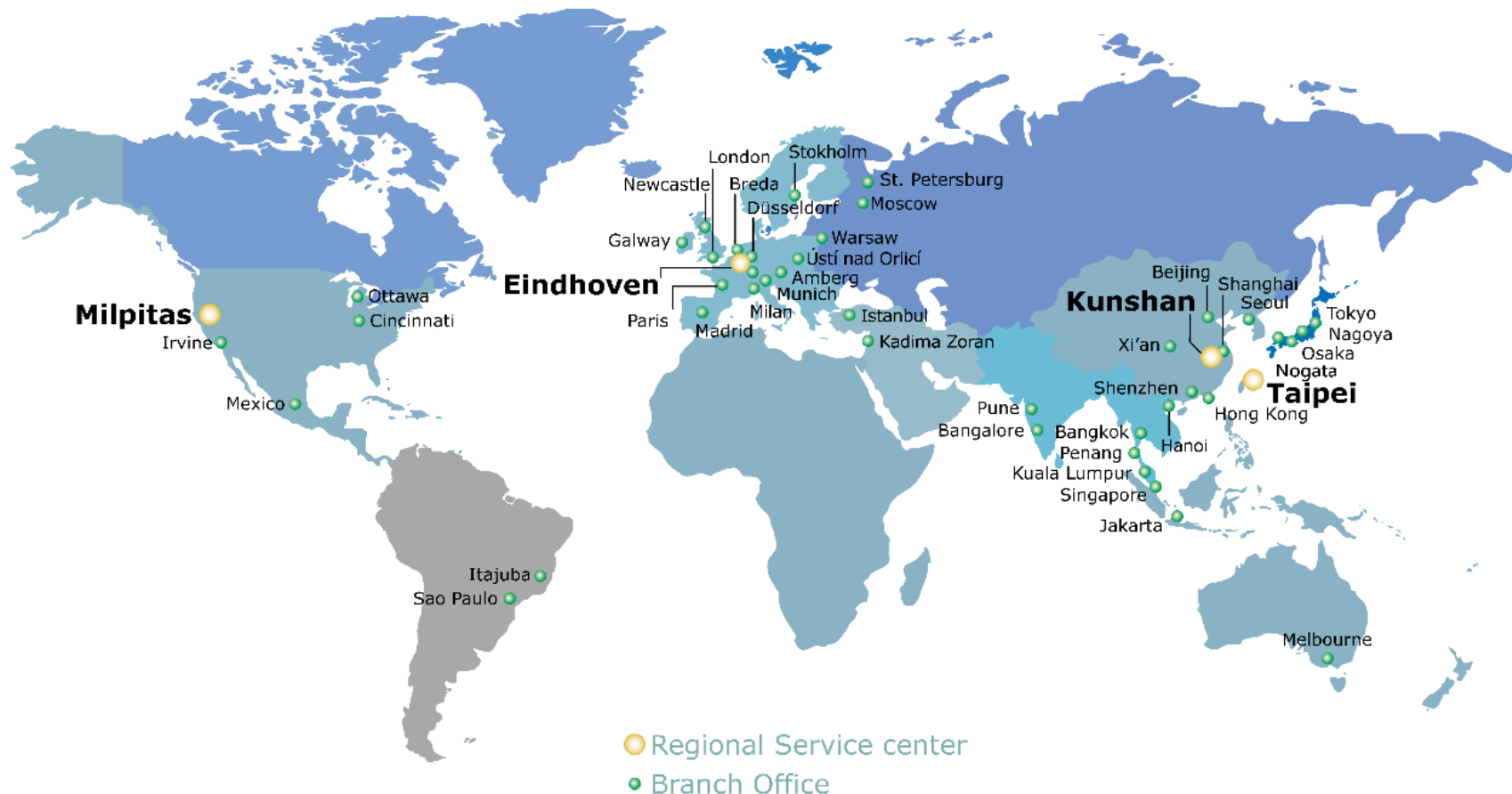
Worldwide Presence

3 Manufacturing Sites

4 Logistics Centers

14 Service Centers

28 Countries



Advantech Service-IoT

iHealthcare & iHospital
智能醫療



Hospital/
Healthcare

iCity Services & Retail
智能服務與零售



Specialty Shop

iMobile Solution & Logistics
智能移動與物流

Office
Building

Care Center



Retail Stores



Hotel



Public Space

Warehouse



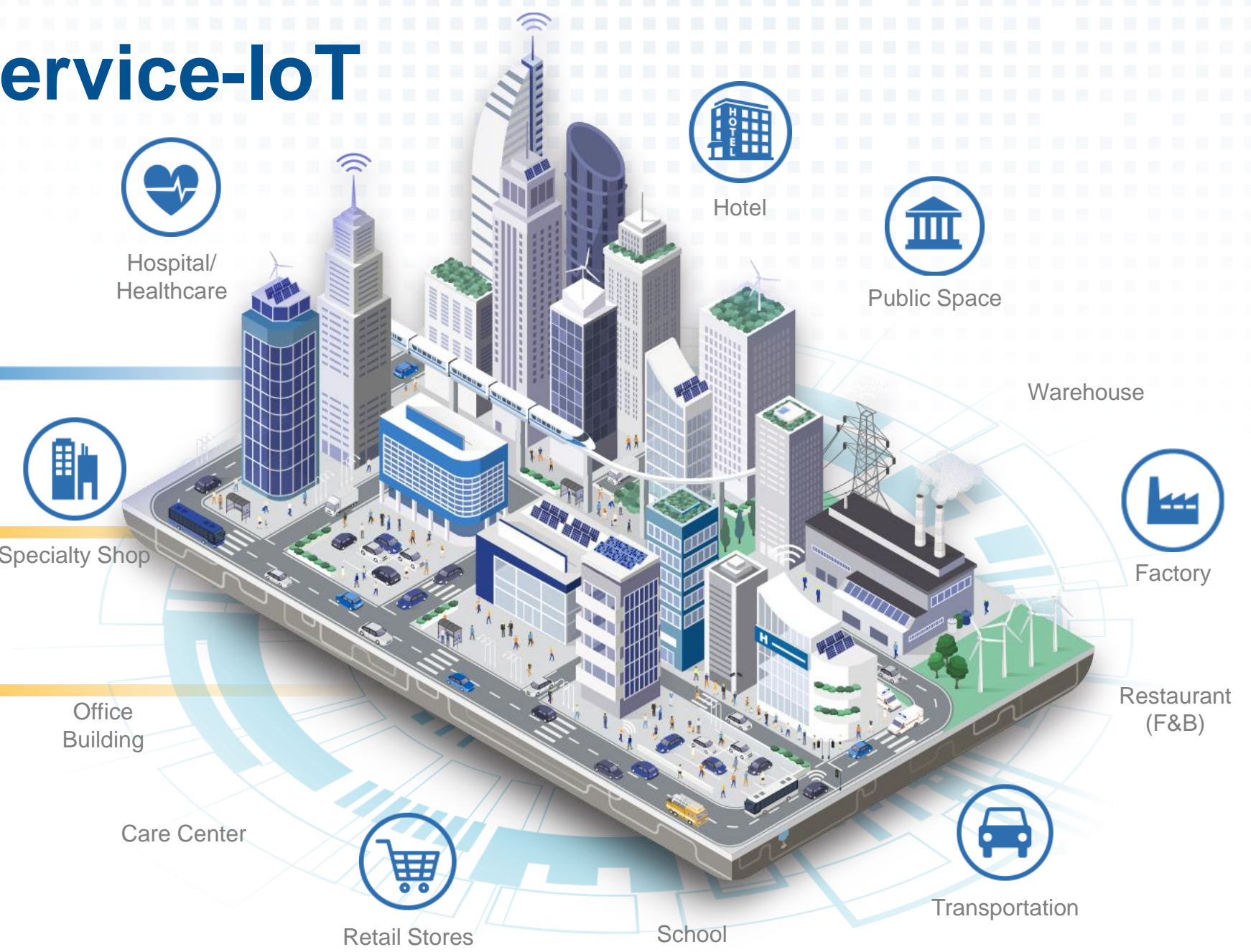
Factory

Restaurant
(F&B)



Transportation

School



Solution Offerings

Domain Focused Industry

iHealthcare



iCity Services



iLogistics & Fleet Management



Mobile Computing / Industrial Tablets



Industrial App (i.App)



Solution Suite



iOutpatient



iWard



RTLS



iVideOR



iTeleMed



Infection Prevention



Video AI Counting



Video AI Facial Recog.



Digital Signage



Cold Chain

Edge SRP / ARP

DeviceOn/i/Service

- Medical Monitor
- Medical Tablet
- Medical carts & iMedication Series
- Industrial Mounting Kit
- All-in-One Touch Computer
- POS Computer
- Smart City Sensor & Devices
- Driving Safety Solutions
- Industrial Tablets & Peripherals
- Surgical Video Management
- Medical Computers
- Telehealth Solutions
- Mobile POS
- Edge Computers
- Interactive Kiosk Solution
- Vehicle Mounted Solutions
- Fleet Management Solutions

DLT Series of Rugged Vehicle-Mount Terminals



Warehouse Forklift



Construction Machinery



Agricultural Machinery



Mining Machinery



Port Crane & Stacker



Factory Machinery



DLT-V72 Facelift (10/12/15")



NEW

DLT-V73 (10/12")



DLT-V83 (10/12/15")



DLT-V6210 Facelift (10")

Q4 2023



5G Dongle



Windows



Android



Linux

Advantech Utility Tools



DeviceOn/iService



Full IP66/65 Rating



Shock & Vibration Tolerance



Impact-resistant Front Panel



Wide Temp -30° C ~ 50° C



Multi-point Touchscreen



Glove-compatible Touchscreen



Latest Wireless Connectivity



Fast WLAN Roaming



Uninterruptible Power Supply



Easy to Clean

*Software support varies in models. Please refer to product datasheet for more product specifications.



Forklift



Construction



Agriculture



Mining



Port



Harsh Environment



Vehicle Mount Terminal

- 10"/12"/15" VMT
- Windows, Android, Linux



Edge SRP

- Goods Sizing
- Screen Blanking
- Indoor Navigation
- RFID Reading



Fast WiFi Roaming

- Full RF Capability



DLT-V4108



DLT-V6210



DLT-V7210/12/15/KD/P+



DLT-V8310/12/15



IK08 Touchscreen & Gloved Operation Support

- High durability
- Operable with thick cold storage gloves



Ultra-rugged

- Full IP66/65
- 5M3 Shock and Vibration
- Wide temp -30~50 °C



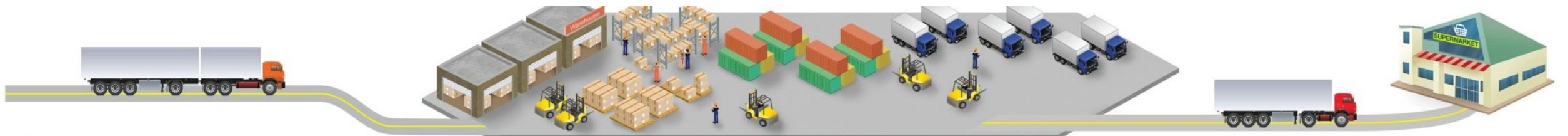
Sunlight Readable Display

- Through optical bonding and high display brightness

DLT

Fully Rugged Terminals for Harsh Environments and Vehicles

Intelligent Logistics is Full Line Management



← Long-Haul Trucks Management Solution Warehouse Management System Local Fleet Management Solution →

10%+ ↑ Fuel Saving

40%+ ↑ Delivery Efficiency

30%+ ↓ Operating Cost

10%+ ↑ Delivery Accuracy



TREK-303
In-vehicle Display



TREK-60
AI Vehicle Computing Box



Seamless in-vehicle computing system fully control driver behavior to ensure driving safety and real-time goods traceability. Thus, significantly reduce fuel cost.



Barcode scanning to obtain real-time goods and shelf info. through Industrial Tablet PC.



DLT-V72
Vehicle Mounted Computer



Rugged handheld enable timely goods traceability and driver behavior monitoring



In-Vehicle Computer acquire orders via wireless network



AIM-78
Industrial Tablet



Optimize picking efficiency by updated inventory tracking



Real-time order tracking system for logistics company significantly improve delivery services



AIM-75
Industrial Tablet



LEO-D51
ePaper



TREK-773 FL
All-in-one in-vehicle computer



Compact light duty mobile data terminal enable real-time communication, vehicle diagnostics and goods temperature monitoring ideal for local delivery services.

Warehouse & Yard Management

1 Yard Management

- AIM75/78/PWS-872 Tablet
- UTC-300/500



2 Forklift Solutions

- DLT-V72/V83 Vehicle Mount Computers
- TREK-773 Vehicle Mount Computers
- PWS-872 Tablet & Vehicle Docking



3 Mobile Workers

- AIM75/78/PWS-872 Tablet & Application oriented peripherals



4 Truck Management

- TREK-60 In-vehicle Computers
- TREK-773 All-in-one Vehicle Mount Computers



5 WMS Cloud Solutions

- WISE PaaS or 3rd party partner

DeviceOn/iService

6 IoT Temp. Sensing Solution

- LEO-S Temp Sensor
- LEO-S Air Quality Sensor



7 Inventory Management

- UID ePaper



Advantech Intelligent Port Solution

1 Port Gate Management

- TREK-60 (ETHERNET SERIAL SERVERS & GATEWAYS)
- UBX-310F



4 Cold Storage/ Cold Chain Management

- DLT Series Defroster VMTs
- AIM75/78/PWS-872 Tablet
- LoRa Temp. Sensor



2 Container Stacker Operation

- DLT Series Rugged VMTs
- TREK-773 All-In-One Terminal



5 Container Truck Management

- TREK-773 All-In-One Terminal
- TREK-674 In-Vehicle Computer



3 Gantry Crane Operation

- DLT Series VMTs



6 Yard Inventory Service

- AIM75/78 Tablet



7 Wireless Communication



A Full Offering of In-Vehicle and Industrial H/W Solutions

Superior Connectivity

WWAN/GPS/
Wi-Fi/ BT

Multi-OS Support

Windows/
Android/
LINUX

Rich I/O Connections

CAN/Ethernet/
COM/USB/RSMA
/VGA/HDMI

Extendable Features

Motion sensor/
Multifunctional
camera modules



Vehicle-Mounted Terminals (7/10/12/15")



DLT-V73/V72/V83/
V6210

TREK-773
FACELIFT

Industrial Tablets (10")



PWS-872



Multi Can Dongle

In-Vehicle Computing Platforms



TREK-60/674

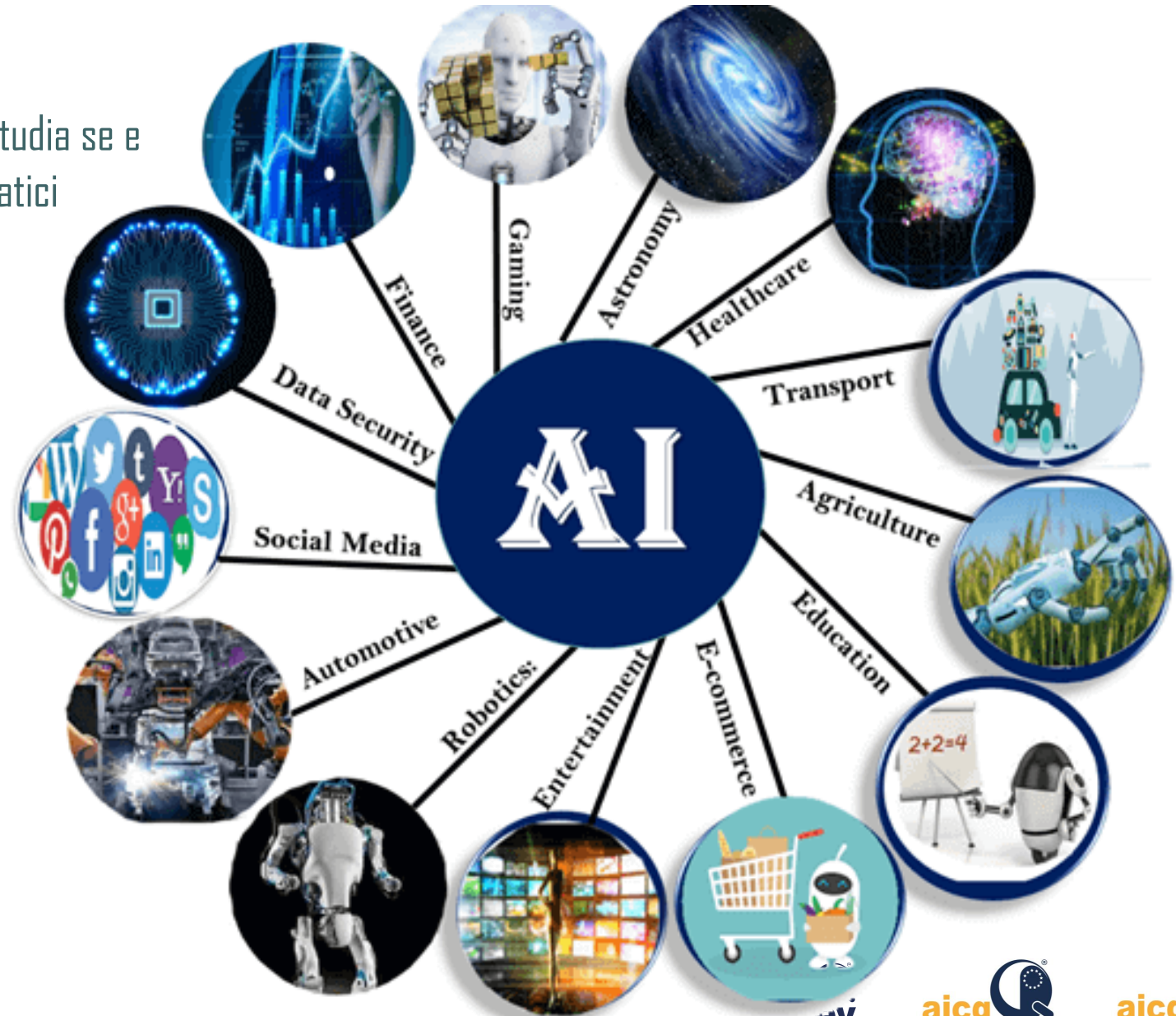
In-Vehicle Smart Display (7/10")



TREK-303/306

La presenza della AI nella nostra vita quotidiana

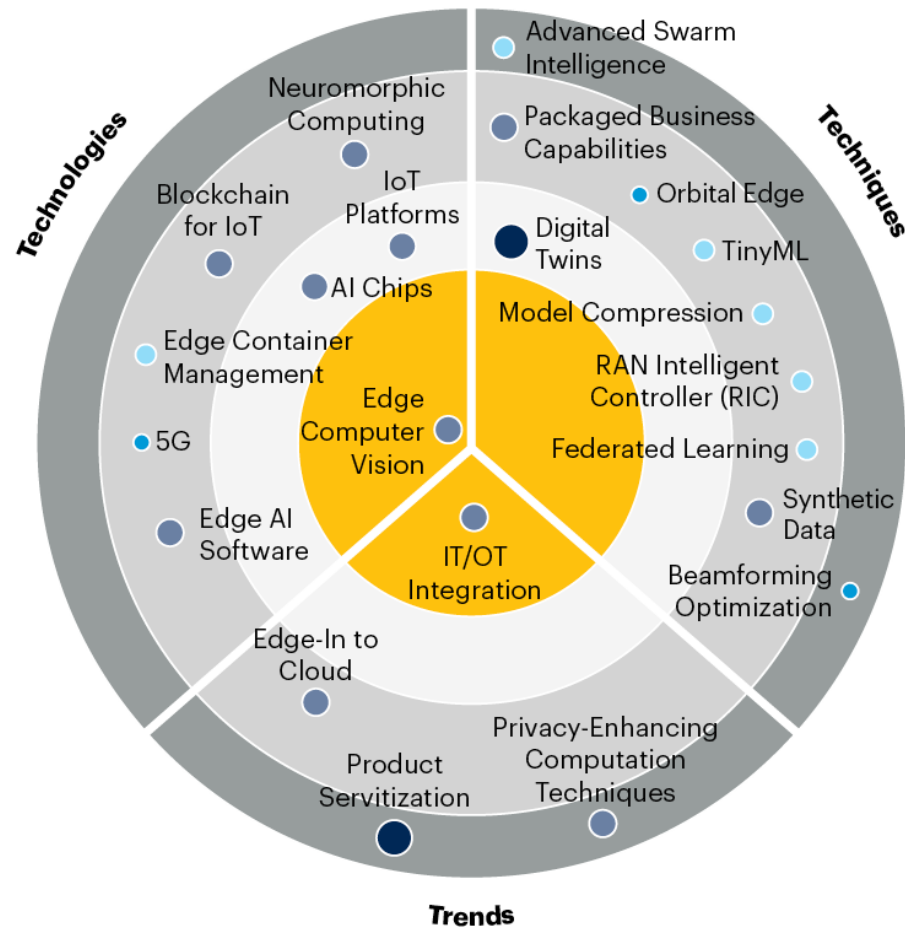
L'intelligenza artificiale (AI) è una disciplina che studia se e in che modo si possano realizzare sistemi informatici intelligenti in grado di simulare la capacità e il comportamento del pensiero umano.



Esempi di intelligenza artificiale oggi

- Assistenti Vocali
- Ricerca e consigliati
- Guida Autonoma
- Navigatori
- Notifiche App
- Medicina
- Traduttori
- Esercito
- Annunci pubblicitari
- Email

- Assistenti vocali
- Ricerca e consigliati
- Guida Autonoma
- Navigatori
- Notifiche App
- Medicina
- Traduttori
- Esercito
- Annunci Pubblicitari
- Email



Range

- 6 to 8 Years
- 3 to 6 Years
- 1 to 3 Years
- Now (0 to 1 Year)

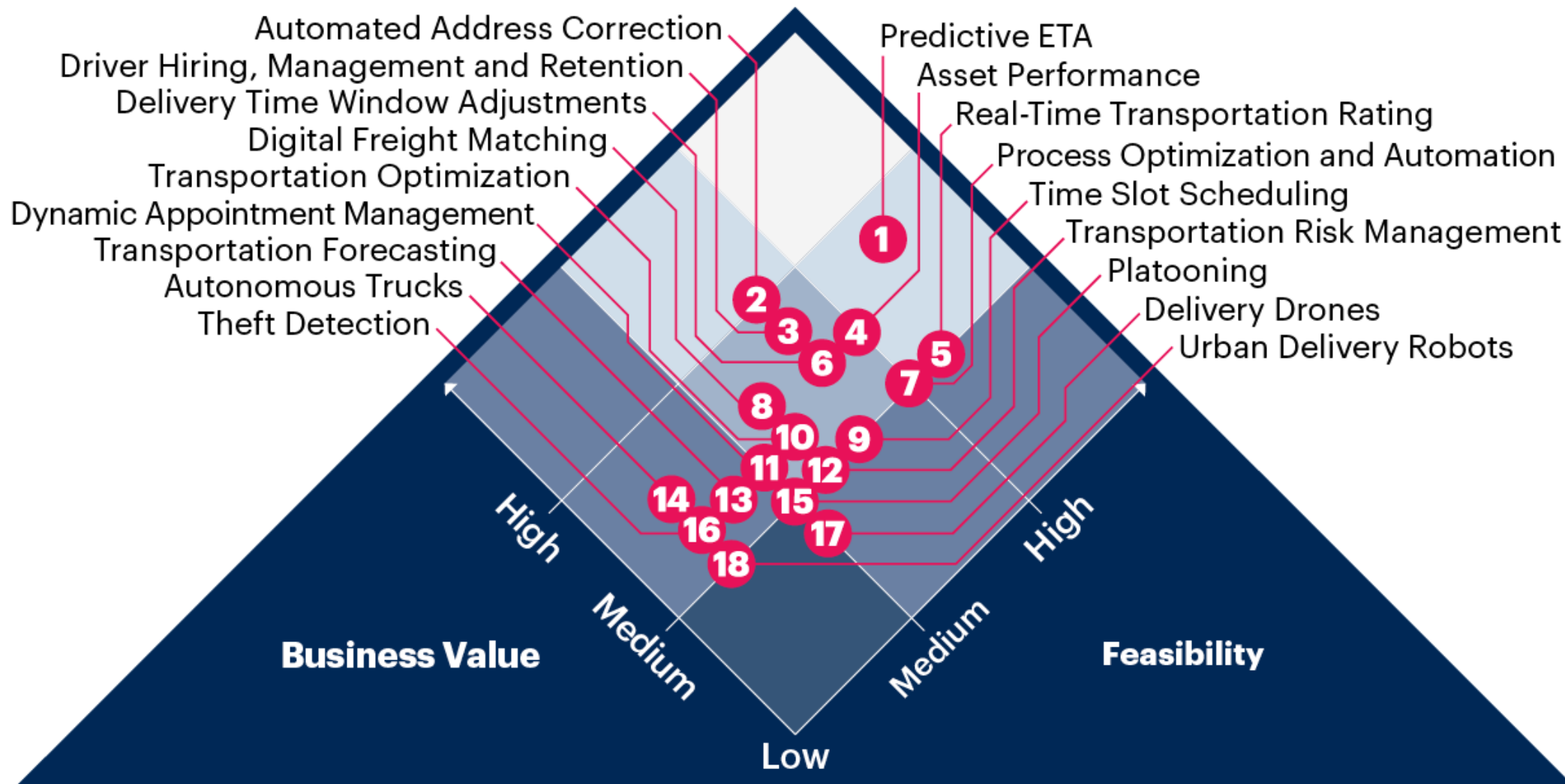
Mass

- Low
- Medium
- High
- Very High

Lo sviluppo di soluzioni AI nei prossimi anni: quale scenario avremo dinanzi

Now	1 to 3 Years	3 to 6 Years	6 to 8 Years
Edge Computer Vision	AI Chips	5G	Advanced Swarm Intelligence
IT/OT Integration	Digital Twins	Blockchain for IoT	Beamforming Optimization
	IoT Platforms	Edge AI Software	Privacy-Enhancing Computation Techniques
		Edge Container Management	Product Servitization
		Edge-In to Cloud	
		Federated Learning	
		Model Compression	
		Neuromorphic Computing	

AI Use Case Prism for Transportation



Source: Gartner

○ None ● Low
● Medium ● High
● Very High

	Business Value				Feasibility			
	Efficiency Gains	Service Improvement	Safety	Cost Reduction	Data Availability	Cultural Readiness	Talent	Technology
1 Predictive ETA	●	●	○	○	●	●	●	●
2 Automated Address Correction	●	●	○	●	●	●	○	●
3 Driver Hiring, Management and Retention	●	○	●	○	●	○	○	●
4 Asset Performance	●	●	○	○	●	●	○	●
5 Real-Time Transportation Rating	○	○	○	●	●	●	●	●
6 Delivery Time Window Adjustment	●	●	○	●	●	●	○	●
7 Process Optimization and Automation	○	●	○	●	●	●	●	●
8 Digital Freight Matching	●	○	○	●	●	○	○	●
9 Time Slot Scheduling	●	●	○	○	●	○	○	●
10 Transportation Optimization	●	●	○	●	●	●	○	○
11 Dynamic Appointment Management	●	●	○	○	○	○	○	○
12 Transportation Risk Management	○	○	○	○	●	●	○	○
13 Transportation Forecasting	●	○	○	●	○	○	○	○
14 Autonomous Trucks	●	○	●	○	○	○	○	○
15 Platooning	○	○	○	●	○	○	○	○
16 Theft Detection	○	○	●	○	○	○	○	○
17 Delivery Drones	○	○	○	○	●	○	○	●
18 Urban Delivery Robots	○	○	○	●	●	○	○	○

Come lo sviluppo ed applicazione della AI aiuterà la logistica e l'utente

Un esempio reale



AI-Powered AMR Computing System

Shelf Height 22" to 24"

Object Detected



Object Detection

Object Detected



SLAM

Image Processing

AI/Deep Learning

✓ **NVIDIA Jetson AGX Series**
Autonomous segmentation

✓ **Wide Range**
9~36V power input

✓ **GMSL Camera Interface**
Up to 15m data transmission

✓ **Industrial Grade**
-25°C~60°C OP



Ultimate AMR Core Computing Solutions

- NV Jetson AGX Xavier & AGX Orin™
- Ruggedized for harsh operating conditions
- Numerous I/O meet AMR requirements

ECO-Partner Collaboration

- Approved camera & LiDAR modules
- Industry grade storage & connectivity modules
- NVIDIA early design access & business support

ROS2 Ready SW Services

- Linux OS & customization
- ROS & applications integration
- System management by DeviceOn

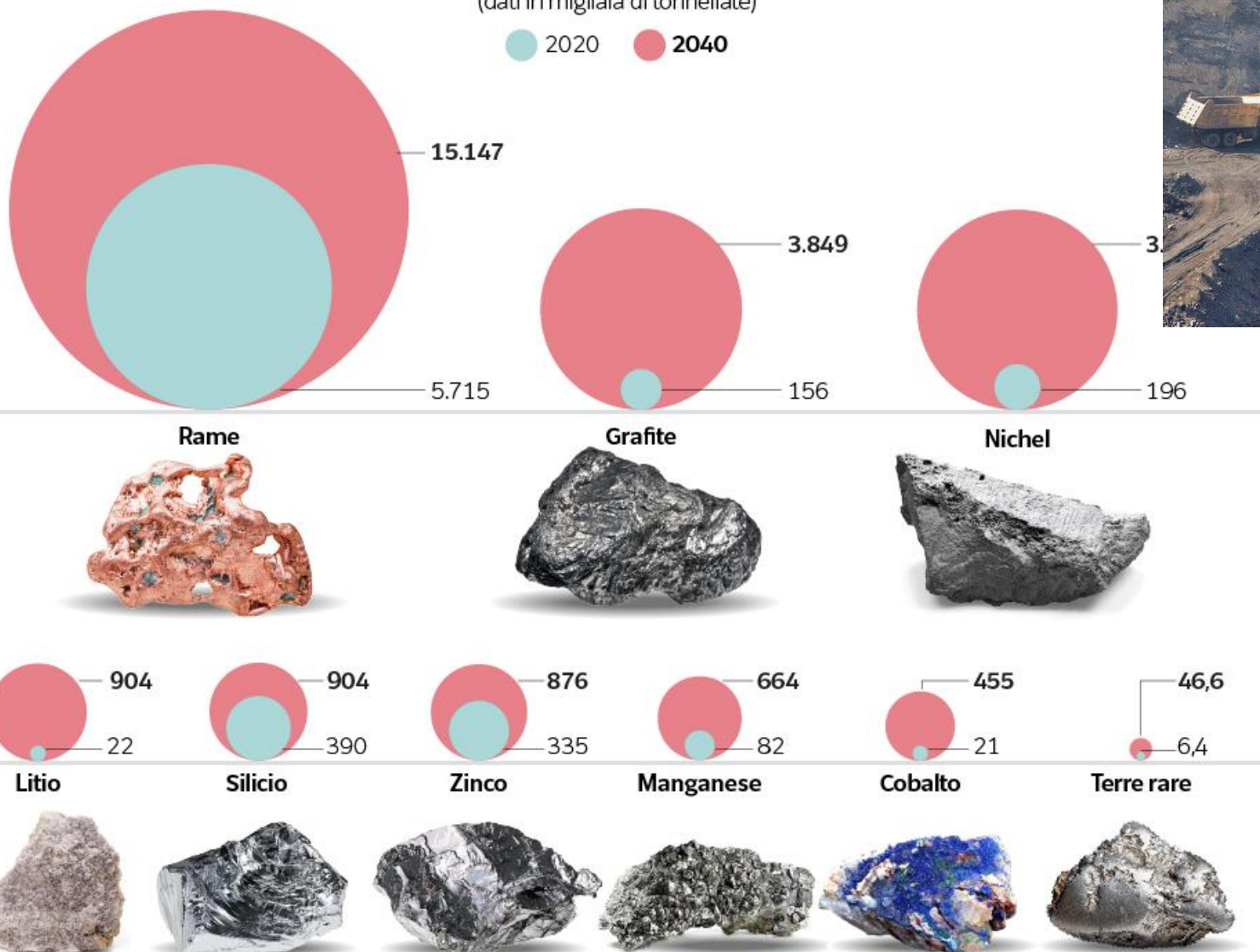
Design & Manufacturing Services

- Thermal & acoustic optimization
- Industrial design & modeling
- Modular form factor shortens development LT

Transizione ecologica e digitale: domanda di metalli

(dati in migliaia di tonnellate)

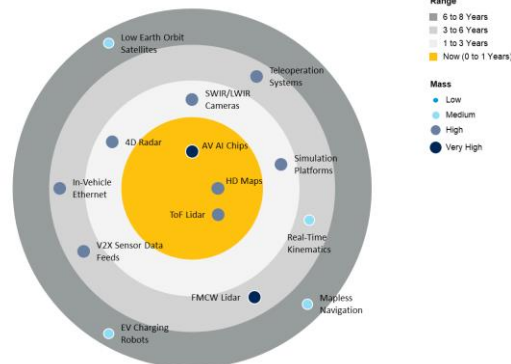
● 2020 ● 2040



1. Reduce operational costs
Utilizzo del Wireless Monitoring abilita la generazione di “smart mines” con costi operazionali molto bassi
2. More easily automate operations
Sistemi autonomi aumentano la profittabilità tramite l’utilizzo di sensori, di controlli dei macchinari e dello stato dei macchinari
3. Keep the workforce safe
Aumento dei livelli di sicurezza e del distanziamento delle forze lavoro.
L’analisi predittiva reduce la possibilità di pericoli sia fuori che dentro le miniere
4. Monitor operational assets
Controllo e mantenimento con l’utilizzo della AI e della predictive Maintenance aiuta a ridurre i costi relativi agli asset e migliorare l’efficacia delle azioni di ricerca materiali

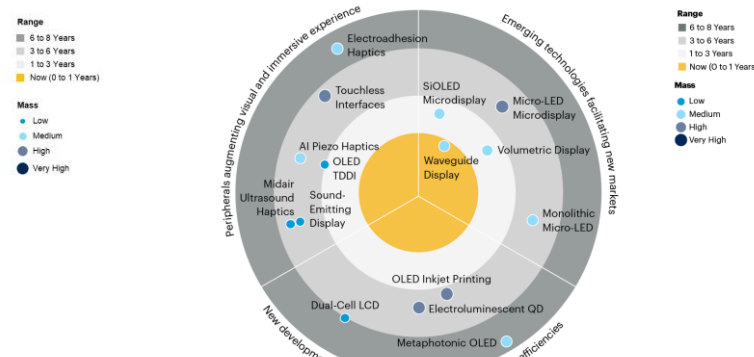
Sensors integration

Impact Radar for Autonomous Vehicles



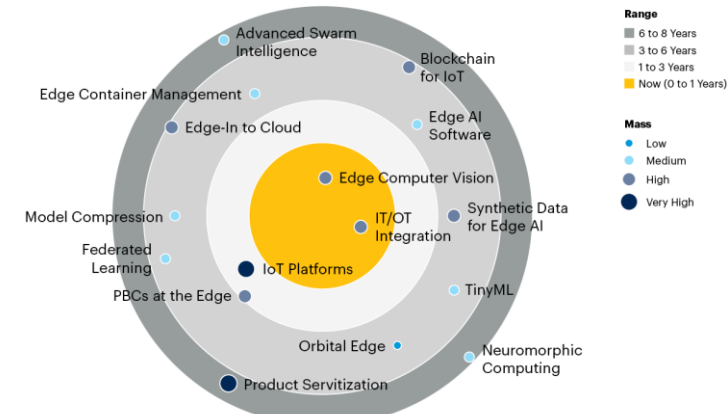
New interfaces

Impact Radar – Display Technologies



Computing power

Emerging Technologies and Trends Impact Radar: Edge AI



REMOTE-CONTROLLED MINING

Like drones, operators are controlling equipment from digital cockpits to advance mining projects.

5G technology bring remote operation of heavy equipment miles down in a mine from a safe above-ground location.



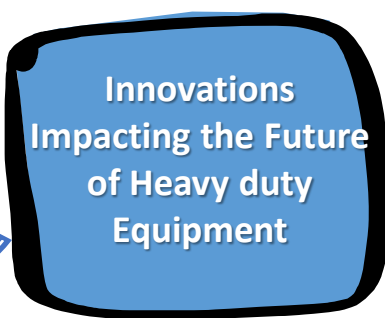
CONNECTED MACHINES

Telematics and the Internet of Things are changing jobsites that build skyscrapers, power plants, mines and more.



AUTONOMOUS MACHINES

Self-driving machines are a reality. Autonomous vehicles will be successful in construction long before they take over commuter roads. They'll be used on closed sites, with limited circulation of pedestrians and other machines, before coming to the city



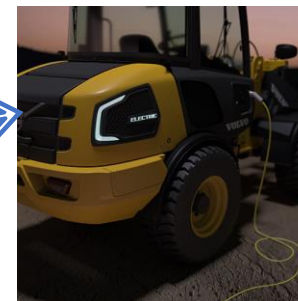
PREDICTIVE ANALYTICS/TELEMATICS

Connected machines are sending tons of information that can be used for actionable predictions. For example, knowing a machine will break down enables companies to take them offline for maintenance before a jobsite is unexpectedly thrown to a halt



ELECTROMOBILITY

Hybrid and new battery technologies are being tested around the world. They are quieter, more efficient and more sustainable. For example, garbage trucks that switch to electric can work during the night because there is no noise



BRICK AND MORTAR EVOLVES TO VIRTUAL DEALERSHIPS

Dealers are taking cues from other industries, such as Amazon and Walmart, by having a stronger online presence in the future. Dealers will become "uptime managers," as they use augmented reality for consultation and repairs, and parts and services are going online with digital records



I pro ed I contro dell'intelligenza artificiale

Secondo un recente report del World Economic Forum, saranno circa **97 milioni i nuovi posti di lavoro** che, **entro il 2025**, verranno creati grazie all'Intelligenza Artificiale.

Un cambiamento che, al contempo, **causerà la fine di circa 85 milioni professioni**, in particolare le **più ripetitive e legate al settore manifatturiero**, destinate a venir sostituite da una macchina o robot.

Uno studio condotto dall'Osservatorio del Politecnico di Milano sul tema della penetrazione delle tecnologie dell'AI sull'occupazione ha evidenziato che nel giro di prossimi **15 anni circa 3,6 milioni di posti di lavoro equivalenti verranno eliminati: alcune professioni scompariranno**, alcune task verranno automatizzate e accorpate, portando alla scomparsa di altre professioni

Forrester Job Forecast 2020-2040, che ha analizzato le prospettive future nelle cinque principali nazioni europee (Regno Unito, Germania, Francia, Italia e Spagna). Secondo il rapporto, **saranno 12 milioni i posti di lavoro a scomparire nei prossimi anni.**

GRAZIE PER L'ATTENZIONE