# IoIM: An introduction to the Internet of Industrial Machine

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eWON

**Industrial Ethernet**

# Our vision

Connecting machines across the Internet

- Any Industrial machine/devices such as packaging, food & beverage, robots, HVAC/heating, robots, medical, energy (wind turbines, cogeneration, biogaz), RTUs, metering devices, and many more…
- The connected machines can communicate
  - « Talk » : SMS and E-Mail alerts, data, event logs,…
  - Be « Monitored » and « Maintained » remotely
  - Be « Managed » through the Internet

## Industrial Ethernet

# Maintenance Facts



- 63 % = routine check or no problem (source Arc Advisory Group)
- Cost of unnecessary maintenance is comparable to the plant profit (source: Dow Chemicals)
- Maintenance budget can be up to 2/3 of annual net profit (source: DuPont)

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# Labor cost in manufacturing

- Between 2010 and 2012 the cost per hour of downtime increased, on average, by 65 % (sce. « The cost of downsizing is Rising », Dick Csaplar, Aberdeen Group)

- Manufacturers are estimated to spend over $400 Billion on maitenance services (maintenance Technology)

- Average Age of highly skilled U.S. manufacturing worker is 56 (srce. Bloomberg)

- An estimated 10 million Job with manufacturing cannot be filled today to a growing skills gap (« The future of Manufacturing Opportunities to Drive Economic Growth », World Economic Forum

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# Yesterday Service Dept. Challenges

## Cost Reduction – Previous Paradigm



Minimise my Cost          Minimise my customers pain
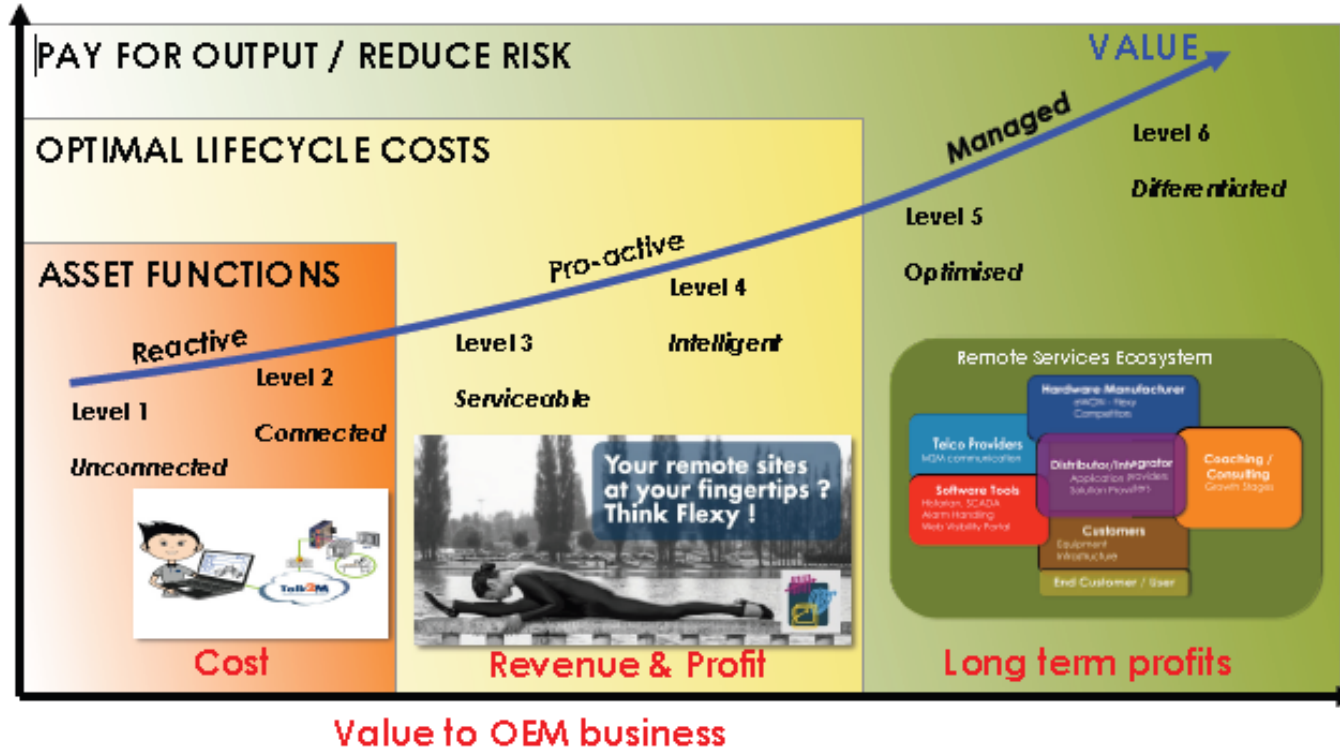
**Industrial Ethernet**

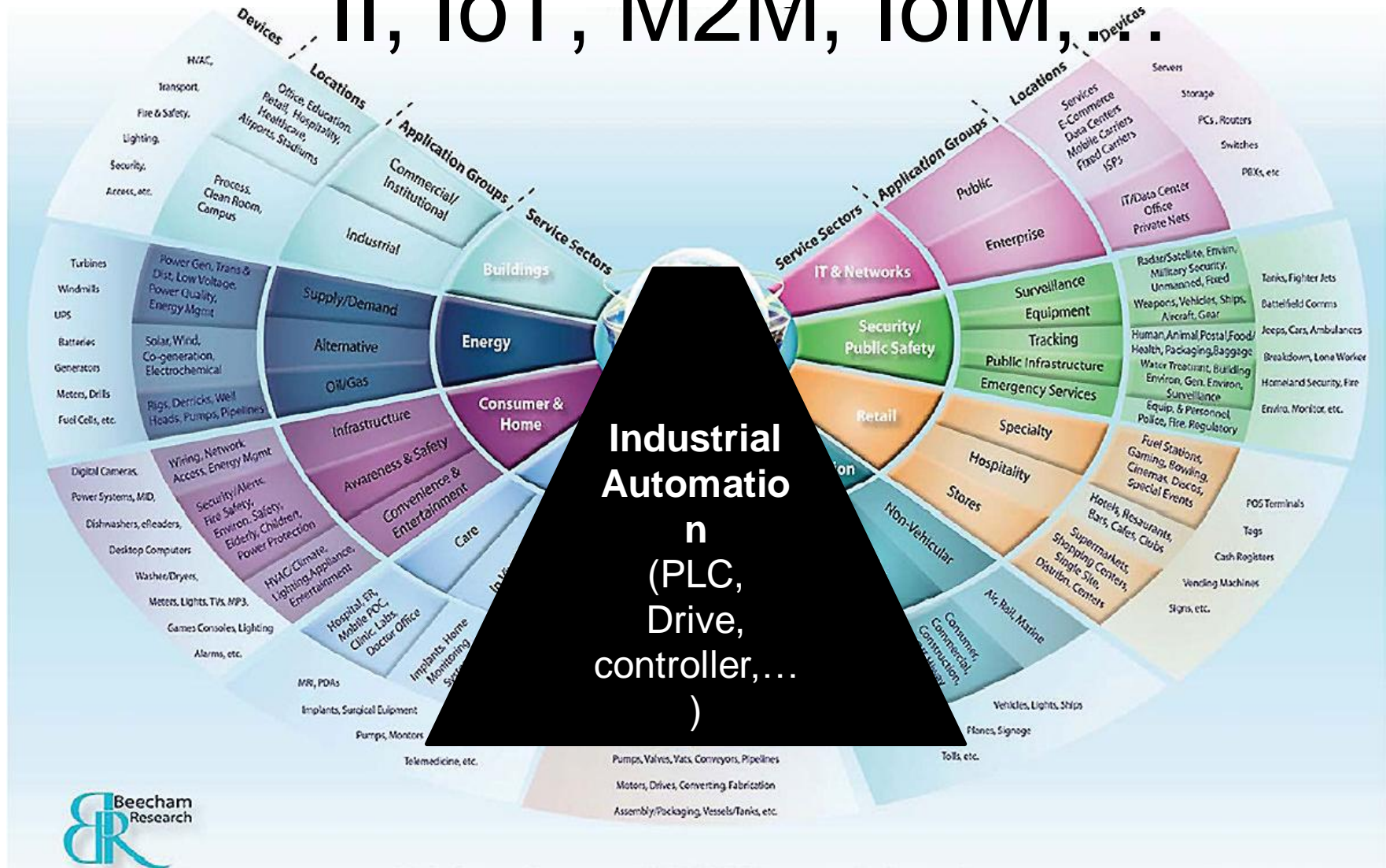# Today Service Dept...



..... New ways of sustaining profits

New Service revenues over product lifecycle

OEM

END customer

Reduce Cost & Pain

Faster reaction

More Control, Less Risk

New Opportunities

**Industrial Ethernet**

# Remote Services Value Chain

**Industrial Ethernet**

# II, IoT, M2M, IoIM,...



**Industrial Automation** (PLC, Drive, controller,…)

## Industrial Ethernet

# eWON solutions Value Chain

INTEGRATE

COLLECT

MONITOR

ACCESS

CONNECT

**PLC, Controler, HMI,Sensors…**

## Industrial Ethernet
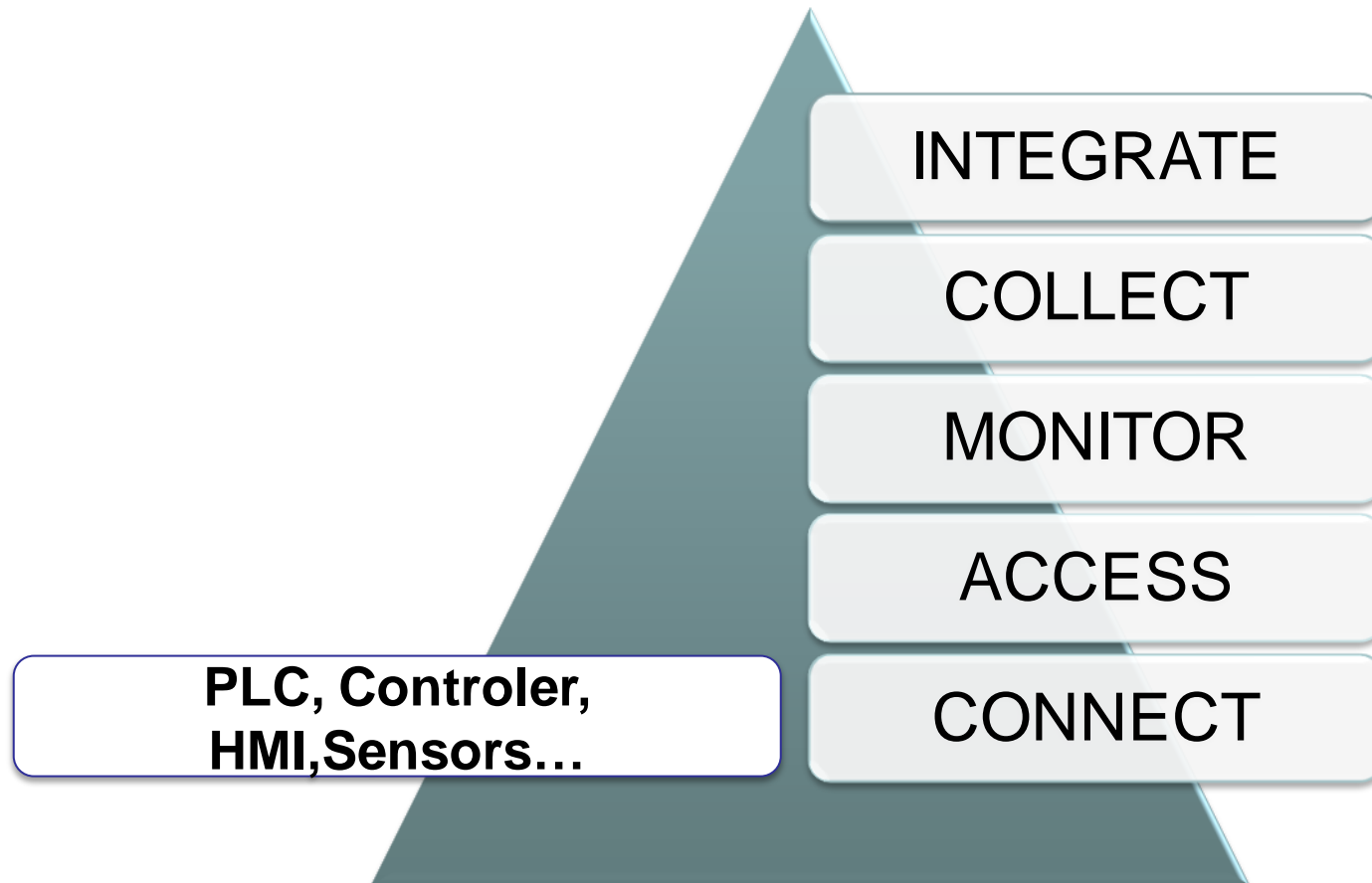
# Internet Remote Access:
## LAN is available and free

1. **Industrial Router**
2. **VPN Software Client**
3. **Cloud RDV server**

# Points to consider

- No firewall settings change
- Strong security
- Easy set-up and commissioning
- Worldwide coverage
- Traceability
- End user keeping control

## Industrial Ethernet

# No Firewall settings change

- Only "outbounds" connections used
- Only available opened port used
- Network segregation: only devices connected to Router LAN ports are accessible
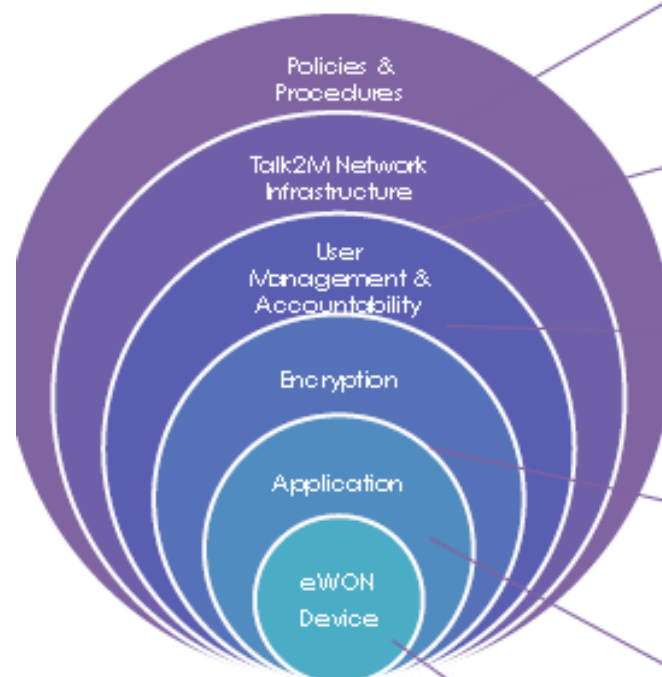- Other connection possible (3G/WIFI)

INTEGRATE

COLLECT

MONITOR

**ACCESS**

**CONNECT**

Talk2M

HMI

PLC

**Industrial Ethernet**

# Security

INTEGRATE

COLLECT

MONITOR

**ACCESS**

**CONNECT**

eWON
MACHINES CAN TALK



Policies & Procedures: eWON/Talk2M solution enhances and is compatible with existing corporate security policies, firewall rules, and proxy servers.

Talk2M Network Infrastructure: Globally redundant Tier 1 hosting partners, 24/7 monitoring, SOC 1/SSAE 16/ISAE 3402 Data Centers, ISO 27001, CSA, SOC2

Management & Accountability: Unique user logins, configurable user rights to different devices. Connection audit trail. Double factor authentication.

Encryption: VPN sessions are end-to-end encrypted using SSL/TLS for session authentication and IPSEC ESP protocol for tunnel transport over UDP and TCP/IP

Application: IP, port, and protocol filtering/firewalling available. Restricted access granularity based on user, group, site for all or single devices or specific port.

eWON Device: Network segregation, local device authentication, physical switch for enabling/disabling access.

# Industrial Ethernet

**INTEGRATE**

**COLLECT**

**MONITOR**

**ACCESS**

**CONNECT**

# Business continuity

- 365/24/7 continuous monitoring with on-duty engineer

- Servers roll-out among several providers and sites

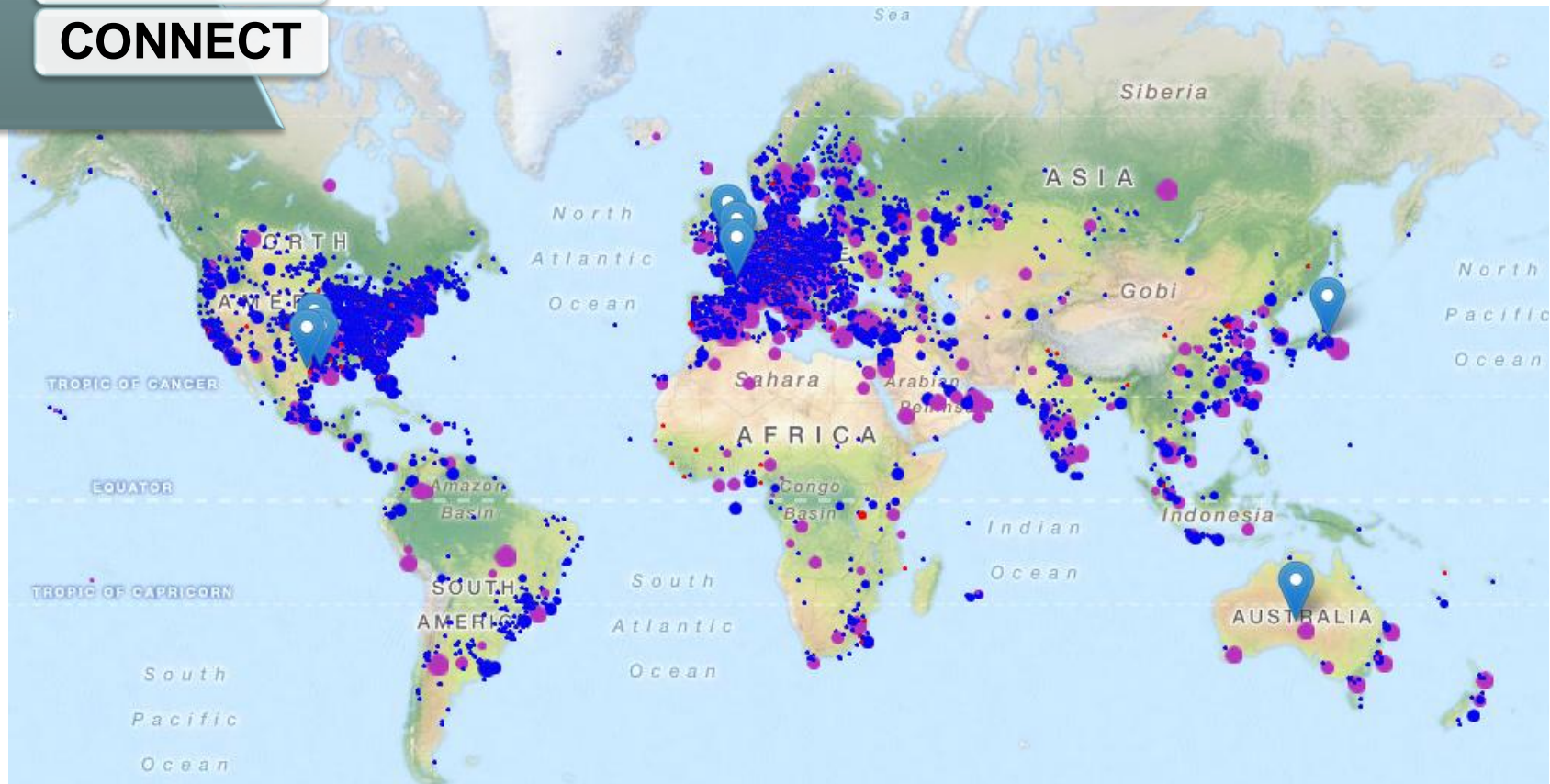- Server roll-out should be fast (few minutes)

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Worldwide coverage
Reduce latency is a …

INTEGRATE
COLLECT
MONITOR
**ACCESS**
**CONNECT**

**Industrial Ethernet**

# Reporting/Tracability
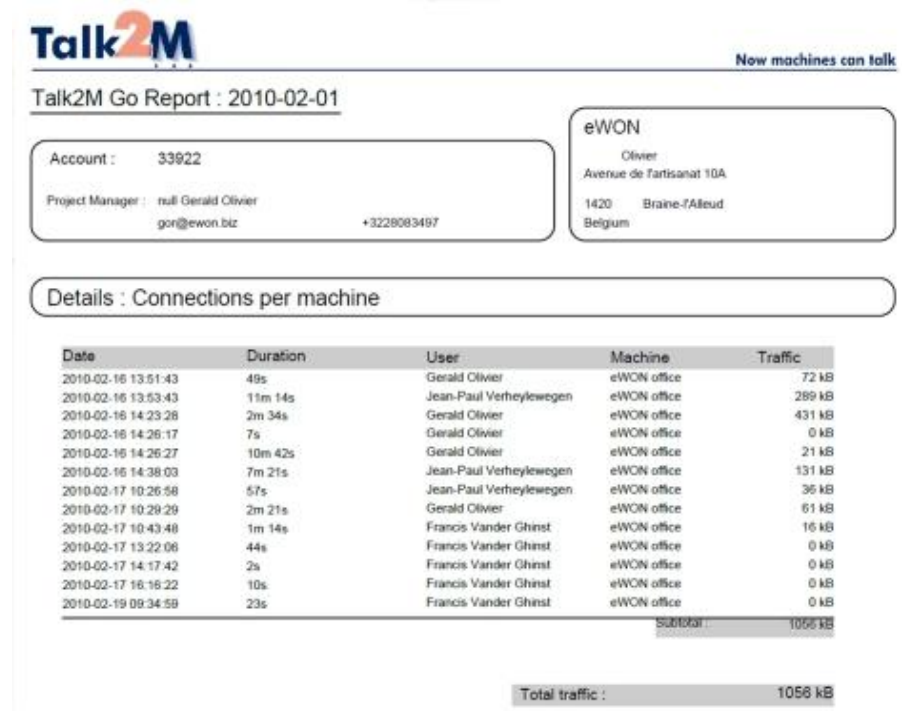


- OEM/MB. keeps tracks of connections

INTEGRATE

COLLECT

MONITOR

**ACCESS**

**CONNECT**

# Customer keeps control

- VPN access should be controlled by the end-user

- Increase Customer acceptance on the Whole RA solution

Industrial Ethernet

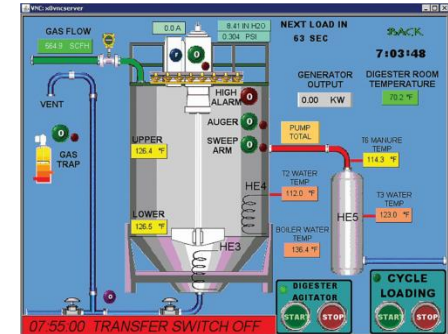Over 45.000 Machines Devices Connected

INTEGRATE

COLLECT

**MONITOR**

ACCESS

CONNECT

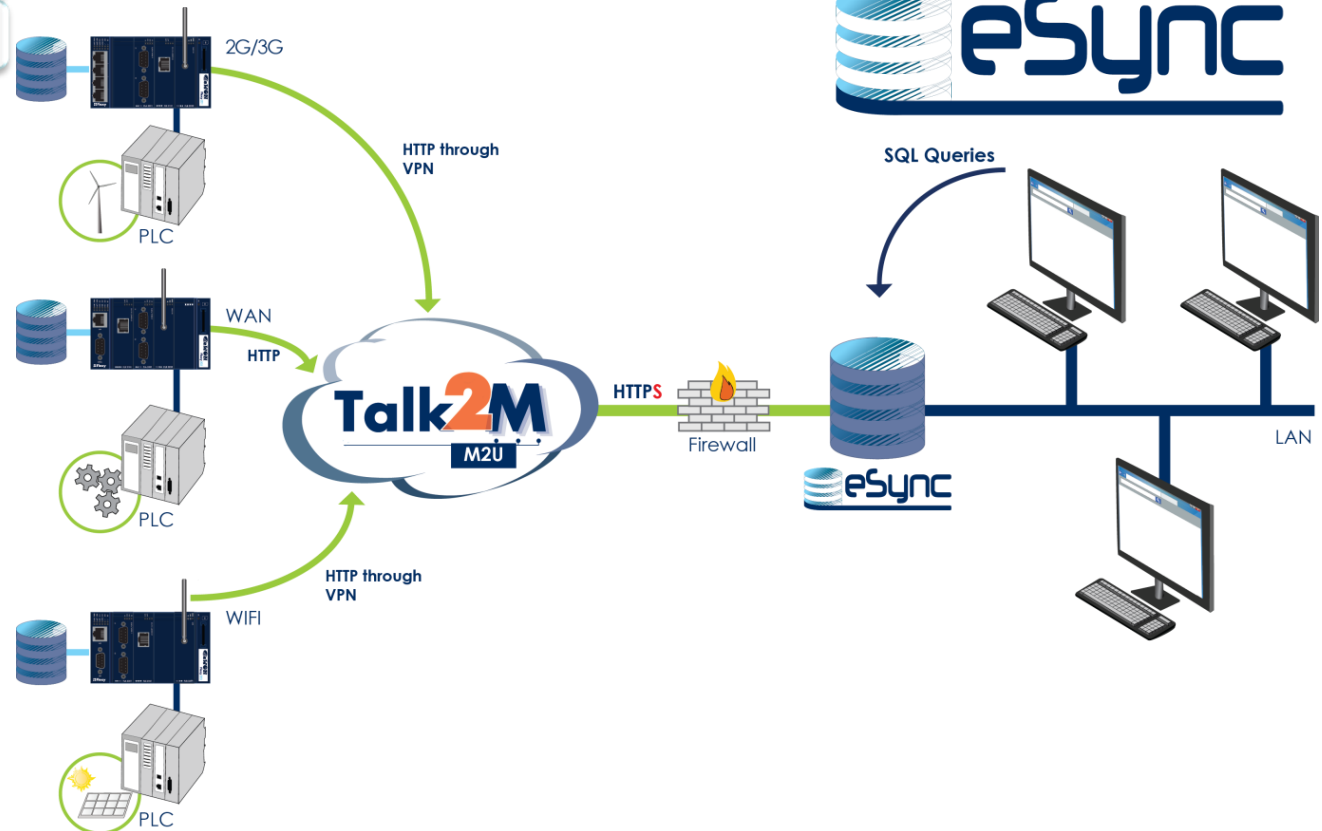# HMIs remote monitoring
## through web browser



- **Web pages** hosted in the remote control device or in the router

- **HMI**, using **VNC**, a graphical sharing system for remote control

- **Windows PC,** with Remote Desktop Protocol (**RDP**)

# Industrial Ethernet

Remote
Data Collection

# Ecosystem

INTEGRATE
COLLECT
MONITOR
ACCESS
CONNECT

**ESI**
System Integrator

**ESP**
Solution provider
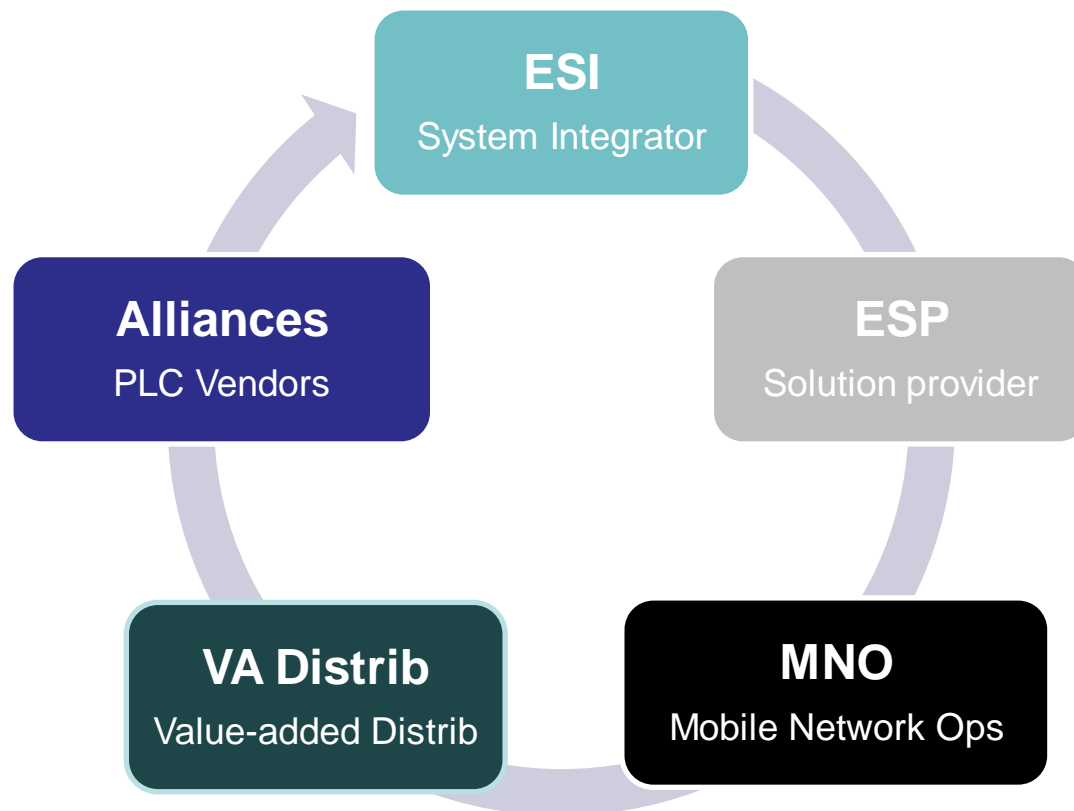
**MNO**
Mobile Network Ops

**VA Distrib**
Value-added Distrib

**Alliances**
PLC Vendors

## Industrial Ethernet

# Who is eWON ?

- Part of ACTL group, 45 employees.
- Manufacturer of Industrial Internet routers
- HQ in Belgium, subs. in US and JP
- Product line started in 2001
- First cloud connectivity system in 2007
- 92% TO export

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# Product line

**Flexy**
Industrial M2M Router
and Data Gateway

eWON **CD**
Industrial VPN Router
with Data Services

**Cosy 123**
Industrial Remote
Access Router

Modularity

Data services

VPN Remote
Access

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# Questions ?

# Thank you.