

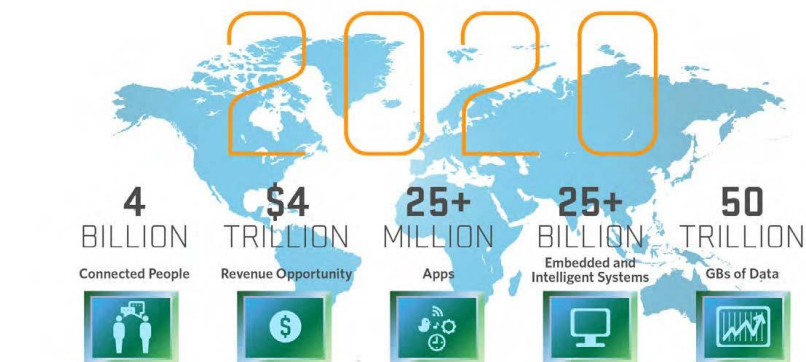
Infraestructuras Convergentes para sensores IOT en Edificios Inteligentes

José Granja
Business Manager
Central Europe South

PANDUIT™

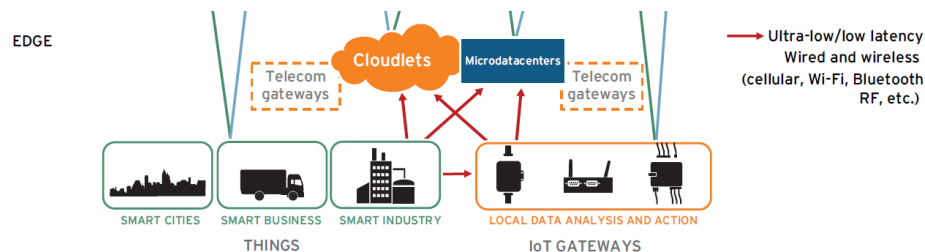
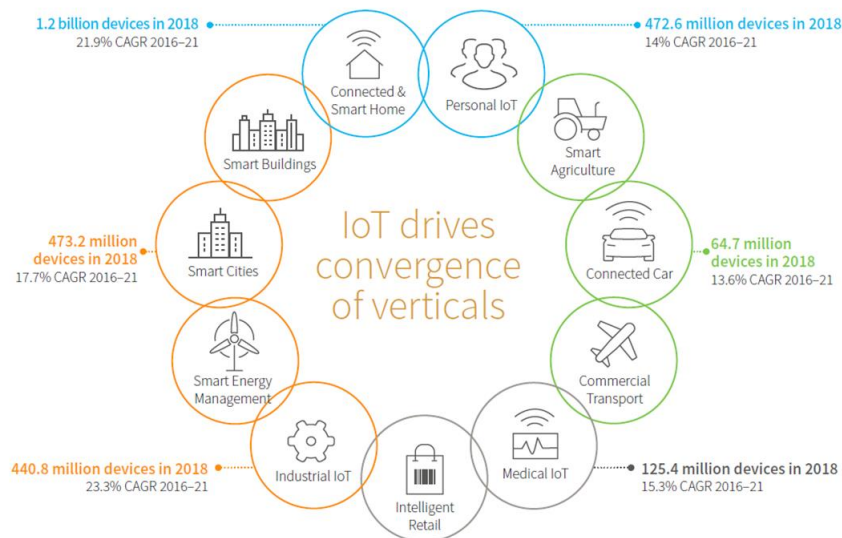


IoT – Driver de Negocio para los próximos 15 años



Source: Mario Morales, IDC.

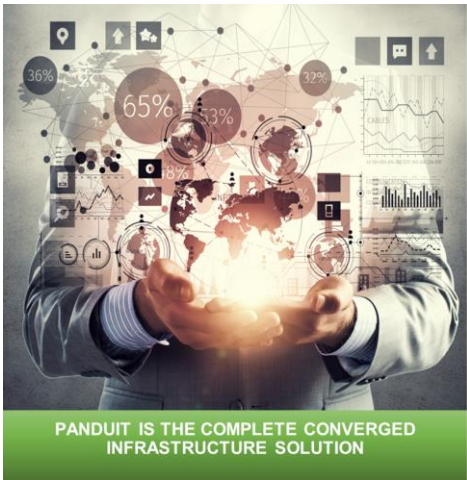
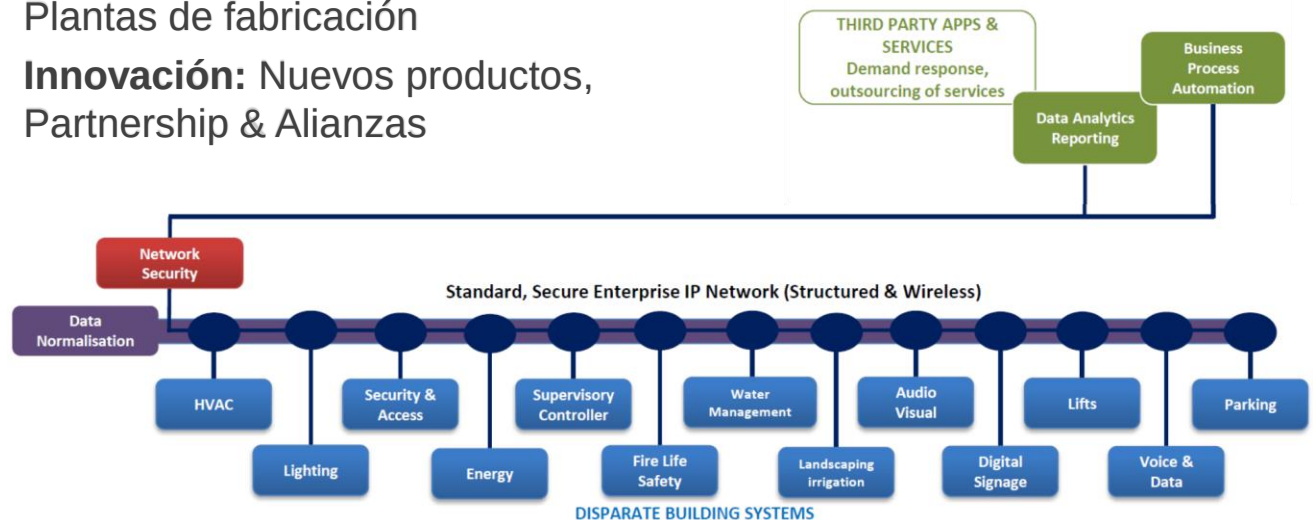
- Dispositivos de negocio conectados
 - Iluminación LED, HVAC, seguridad física, etc.
 - 1.5 billones en 2017
 - 4.38 billones en 2020



Source: 451 Research, Datacenters and Critical Infrastructure, 2017

Infraestructura Convergente

- Desarrollo y fabricación de **Soluciones Innovadoras** para resolver los retos en las infraestructuras.
- Oportunidades:** transformación OT a IT, Cloud, Edificios Inteligentes, Plantas de fabricación
- Innovación:** Nuevos productos, Partnership & Alianzas



Infraestructura Convergente

Enterprise



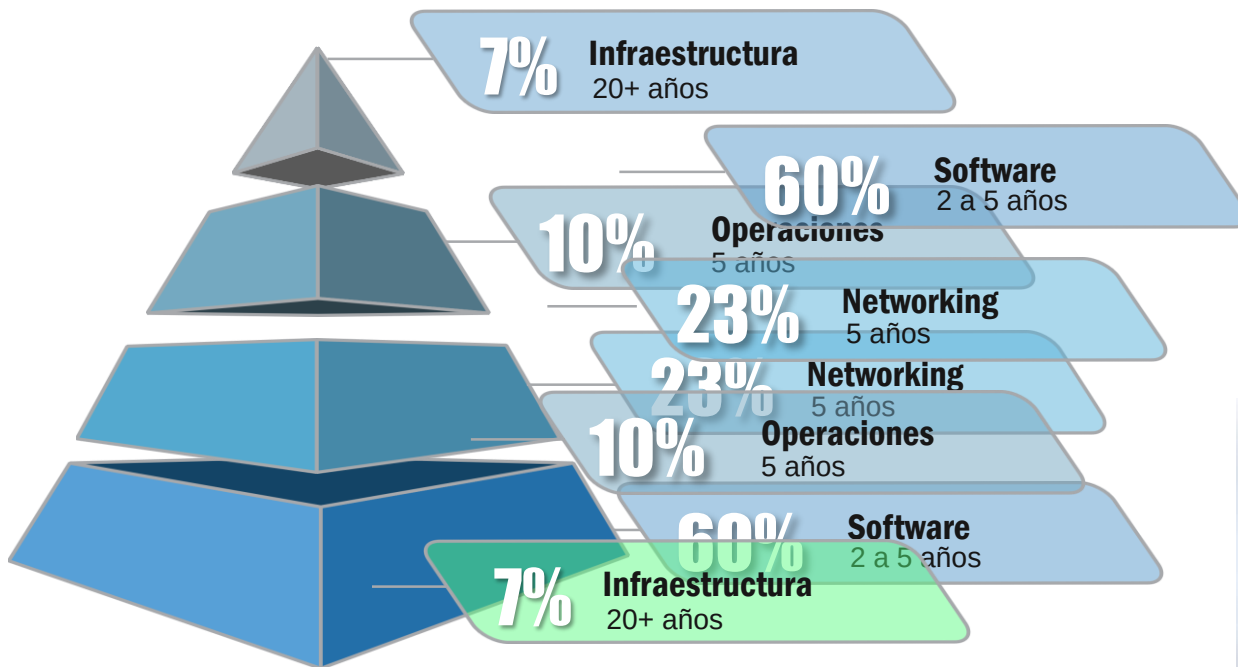
Data Center



Industrial



Infraestructura de Red, nuestro rol



*Sage Research

El 80% de los problemas de red son causados por sólo el 7% del presupuesto de inversión

Coste caída por hora (USD)



Source: Network Computing, the Meta Group and Contingency Planning Research.



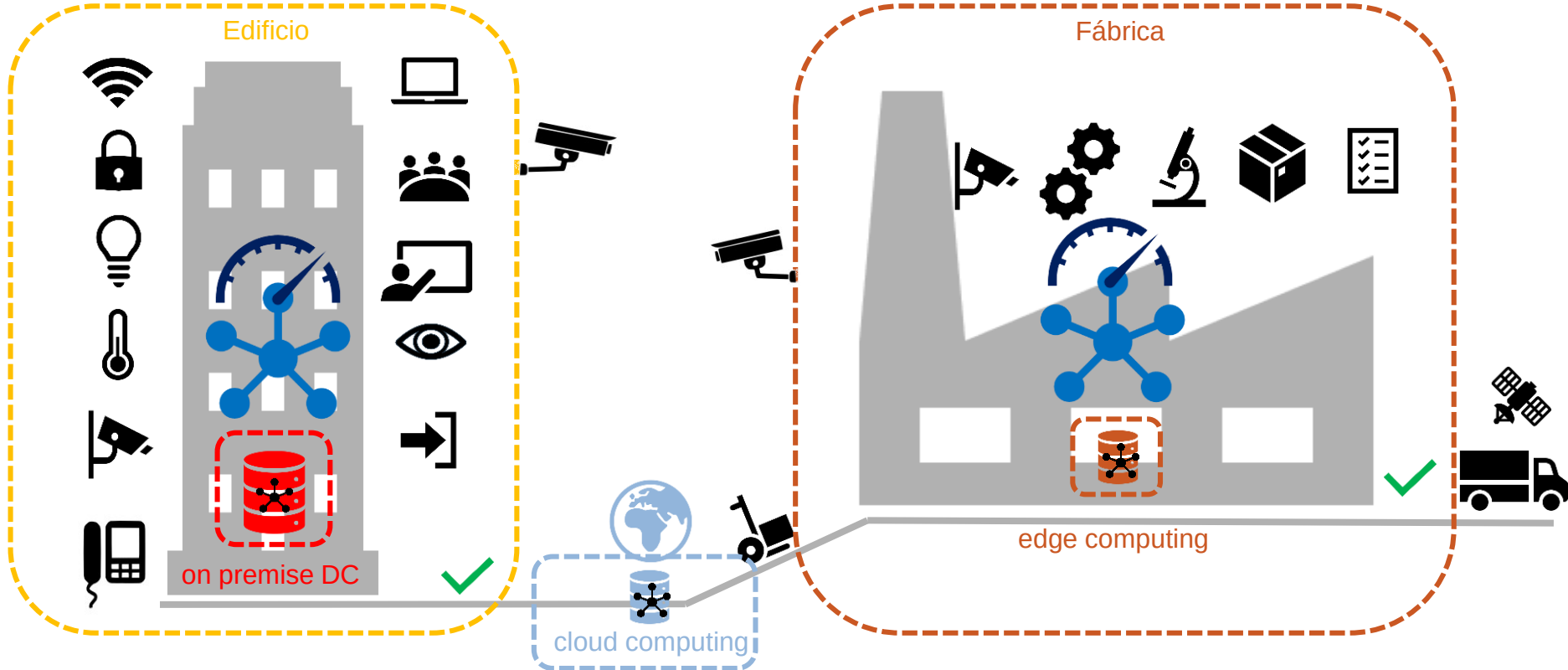
... facilitador
(físico) de nuevas
aplicaciones IoT

Cambio en la funcionalidad de Edificios



Edificios Conectados

conectar, gestionar, monitorizar



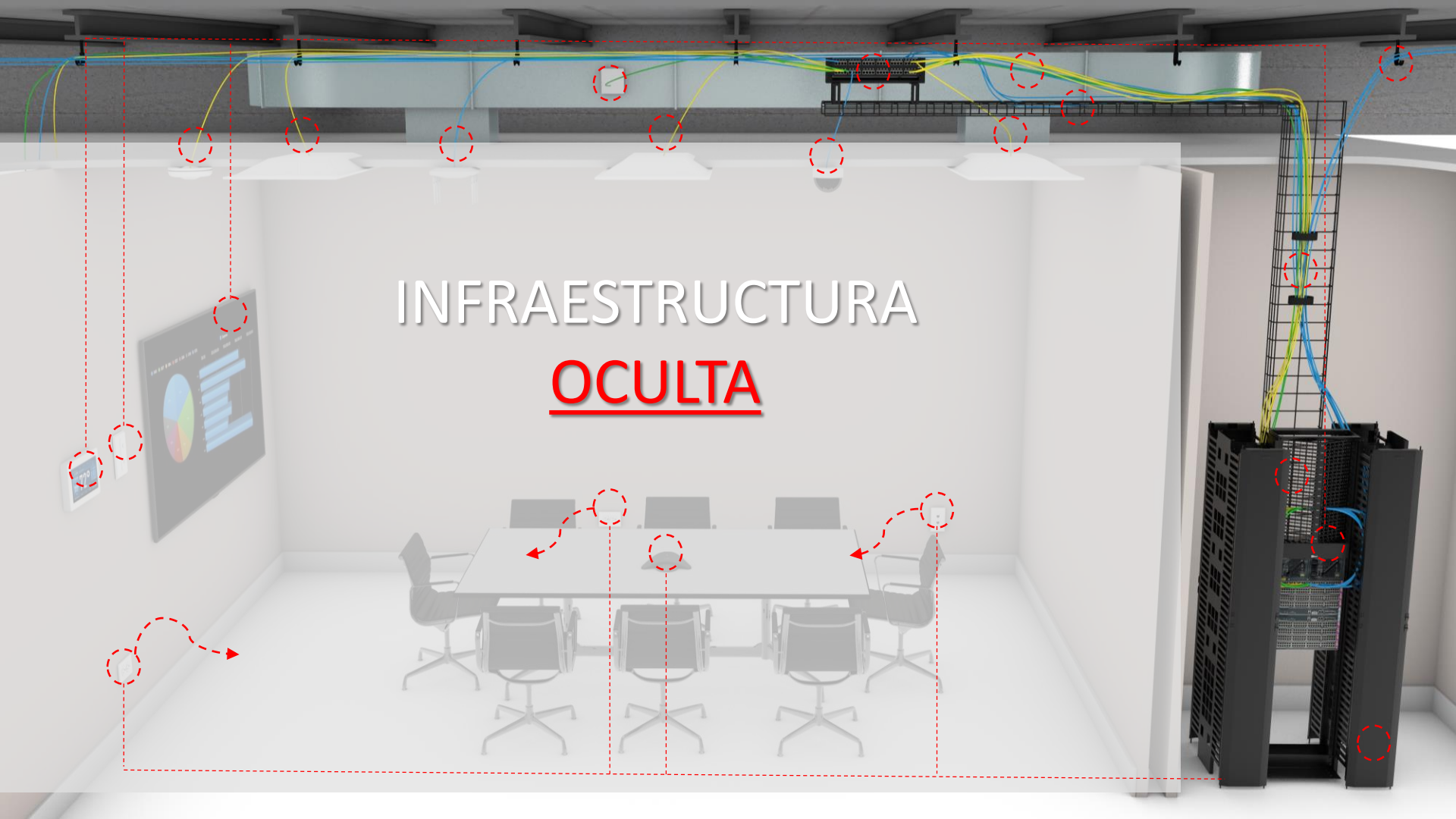
POWER over Ethernet

Aplicaciones «**VISIBLES**»

	Voz & Datos
	Iluminación
	BAS & HVAC
	Sensores
	Wireless
	Seguridad
	Audio-Video



INFRAESTRUCTURA OCULTA



Drivers de Infraestructura Cat.6A UTP

Software Interact Office



Switch Power over Ethernet

Gateway Ethernet



Switch Distribución



Control app Personal

Iluminación Philips Interact Ready



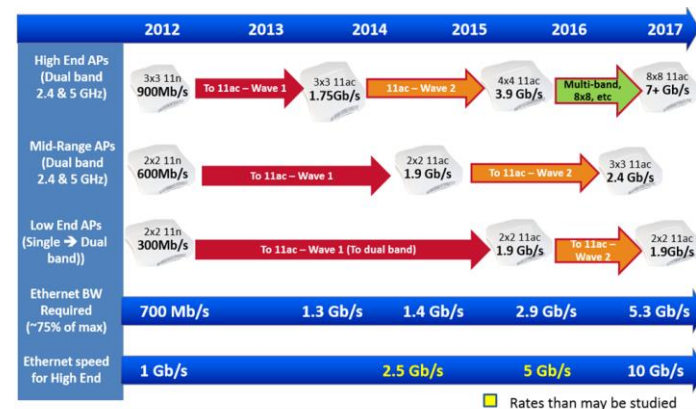
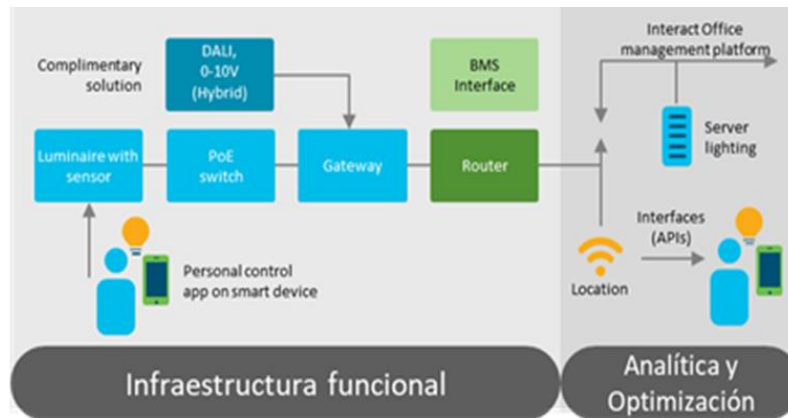
SlimBlend

PowerBalance



LuxSpace

interact



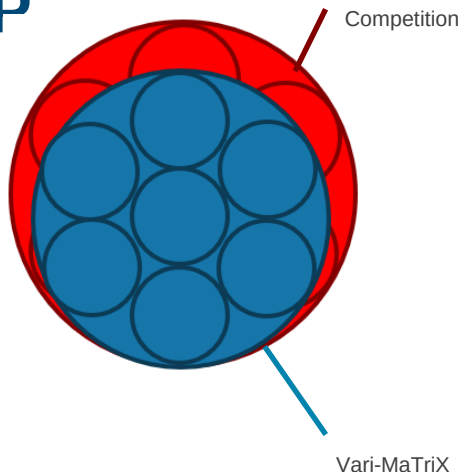
Source: IEEE 802.3 Call For Interest - November 2014 San Antonio, http://www.ieee802.org/3/cfi/1114_1/CFI_01_1114.pdf

- PoE lighting: disipación de calor en el bundle de cables
- Seguridad: requerimiento PoE
- Wifi: Ancho de Banda / PoE



Vari-MaTriX, Cat.6A UTP

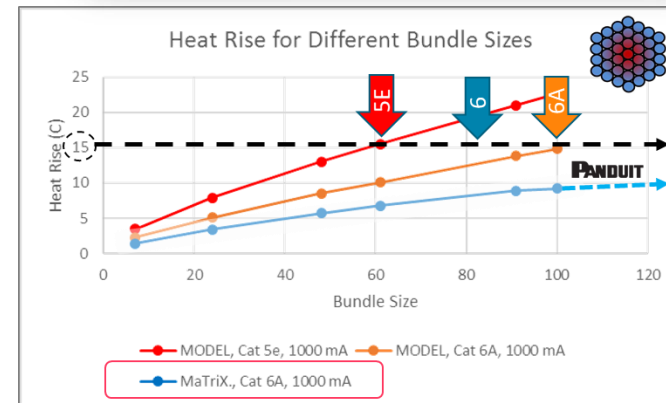
- Cable Cat 6A UTP:
 - Diámetro reducido (6.7 mm), hasta un 78% más pequeño
 - Incrementa la ocupación de las canalizaciones hasta un 40%
- Cable Cat.6A UTP más Avanzado:
 - 23 AWG, Canal de 100m
 - Gran margen frente al Estandar
 - Mitigación de la diafonía exógena
 - Mejor inmunidad EMI en cable UTP
 - Rendimiento excepcional PoE



Resultado no guardado PASA

LAZO	UBL PAR	UBL PARES
	✓	
	VALOR (Ω)	
1,2	2.0	
3,6	2.1	
4,5	2.1	
7,8	2.1	
LÍMITE	21.0	

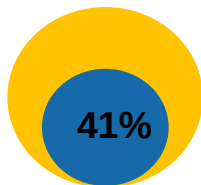
signify



Maximum Bundle Size Recommendations – TSB 184 A – 15°C @100W

28 AWG, Conector Cat.6A de montaje en campo

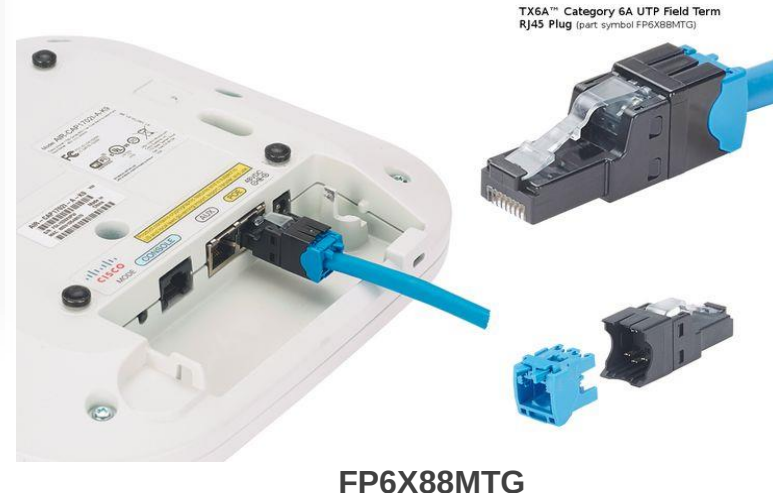
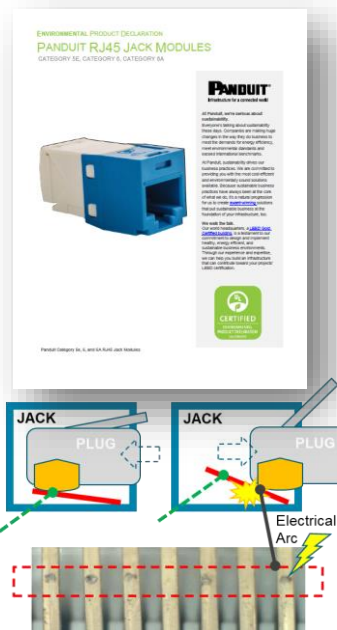
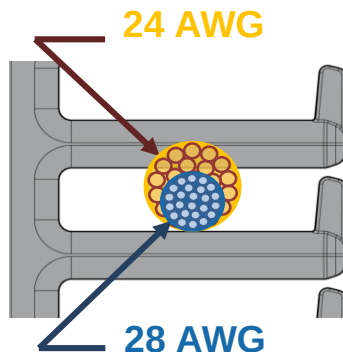
(24 AWG)



(28 AWG)



Asignación de puertos 1:1



FP6X88MTG

Type	Standards	Maximum Current	Number of Energized Pairs	Power at Source	Power at Device	Maximum Data Rate	Standard Ratified
PoE	IEEE 802.3af (802.3at Type 1)	350 mA	2	15.4 W	13 W	1000BASE-T	2003
PoE+	IEEE 802.3at Type 2	600 mA	2	30 W	25.5 W	1000BASE-T	2009
PoE++ (4PPoE)	Proposed IEEE 802.3bt Type 3	600 mA	4	60 W	51 W	10GBASE-T	Expected 1Q2019
	Proposed IEEE 802.3bt Type 4	960 mA		99 W	71 W		
No IEEE standard	Cisco UPOE	600 mA	4	60 W	51 W	Varies	Exists today – no official ratification
	HDBaseT (www.hdbaset.org)	1000 mA		100 W	100 W		

Soporte de PoE++ hasta 100W

PoE Lighting Architectures and Design Considerations

Panduit PoE Lighting Design, technically validated by
Cisco Systems and Signify

PoE Lighting Benefits and Design Considerations

Creating more meaningful connections
in the digital building

The screenshot shows the Panduit website's landing page for digital buildings. At the top, there's a navigation bar with links: "Find a Partner or Distributor", "Choose Language", "Contact Us", and "My Account". Below this is a search bar with the placeholder text "Keyword, Part Number or Cross-Ref" and three dropdown menus: "All Products", "Solutions", and "Support". The main hero section features a large image of a modern glass skyscraper at night. Overlaid on this image is the text "Smarter Buildings Need a Better Infrastructure" in a large, white, sans-serif font. Below this headline is a sub-headline: "The right foundation supports the tech that makes buildings hum". Further down, the section is titled "Automated Systems, Sensors and PoE Create Today's Digital Buildings". This is followed by a paragraph: "The modern building is a picture of efficiency, highly optimized to drive employee productivity, student success, and better patient outcomes. The building's systems communicate with each other and monitor and react to a wide variety of activities:". Below this paragraph is a bulleted list of three points:

- Lights and ventilation automatically adjust based on not only if a room is occupied, but based on how many people are in a room
- Office lighting, as well as voice and data connections are activated and set to personal preferences when a badge is scanned at an access control reader
- Digital signage shows available meeting rooms or offices based on sensor readings, rather than scheduling tools

 Another paragraph follows: "These same systems and sensors collect actionable data, fuel energy savings, and create a workplace that helps to attract and retain the best and brightest workers." This is followed by another paragraph: "The IP network is home to the building systems, and structured cabling is the foundation of that IP network. The same structured cabling solution that delivers your voice and data service also delivers the data and power to your digital building." Below this is a line of text: "Contact us today to dig deeper into the benefits a digital building solution can have in your facilities." At the bottom of the main content area, there's a section titled "Explore Our Resources" which includes three image-based links: a geometric pattern, a building with a glass facade, and a blue-tinted image with the text "Experience Centre".

- <https://www.panduit.com/en/landing-pages/Digital-Building.html>

Diagramas de bloques, Infraestructura Ethernet Industrial Convergente



Soluciones Enterprise



Data Center Industrial



UPS

Enterprise Zone
Levels 4 and 5

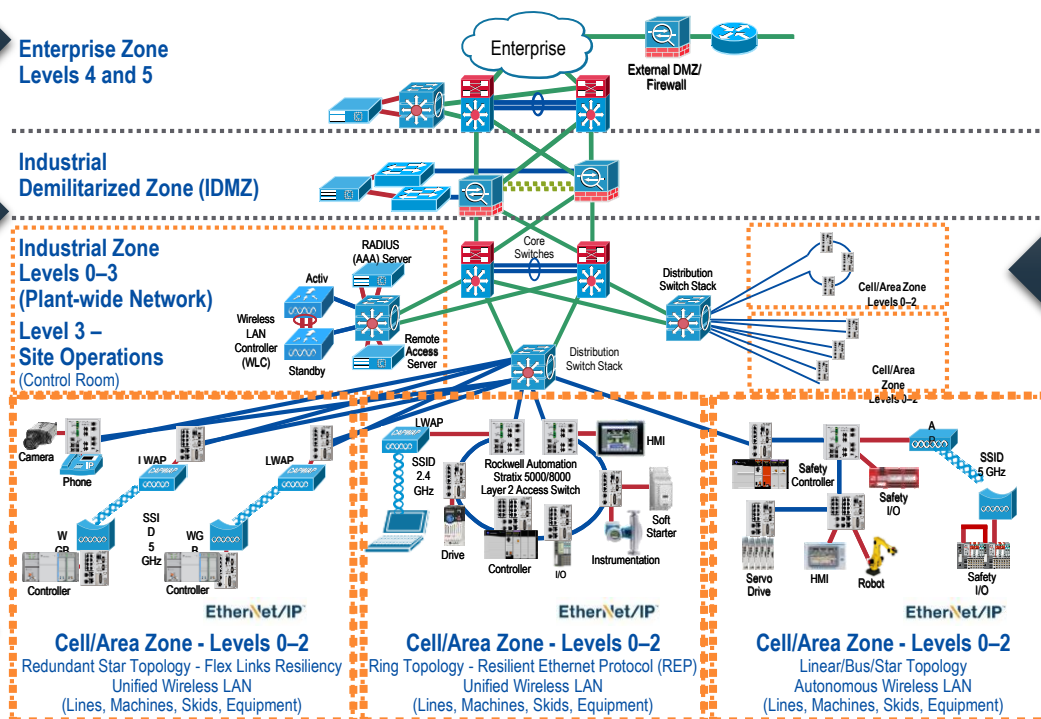
Industrial Demilitarized Zone (IDMZ)

Industrial Zone
Levels 0-3
(Plant-wide Network)
Level 3 - Site Operations
(Control Room)

Armario de Distribución Industrial

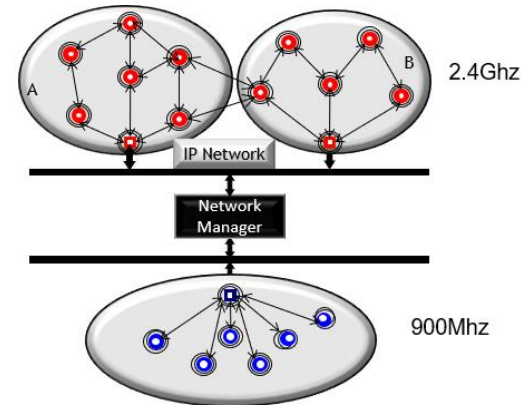
Sistema de Red de Zona

Panel de Control



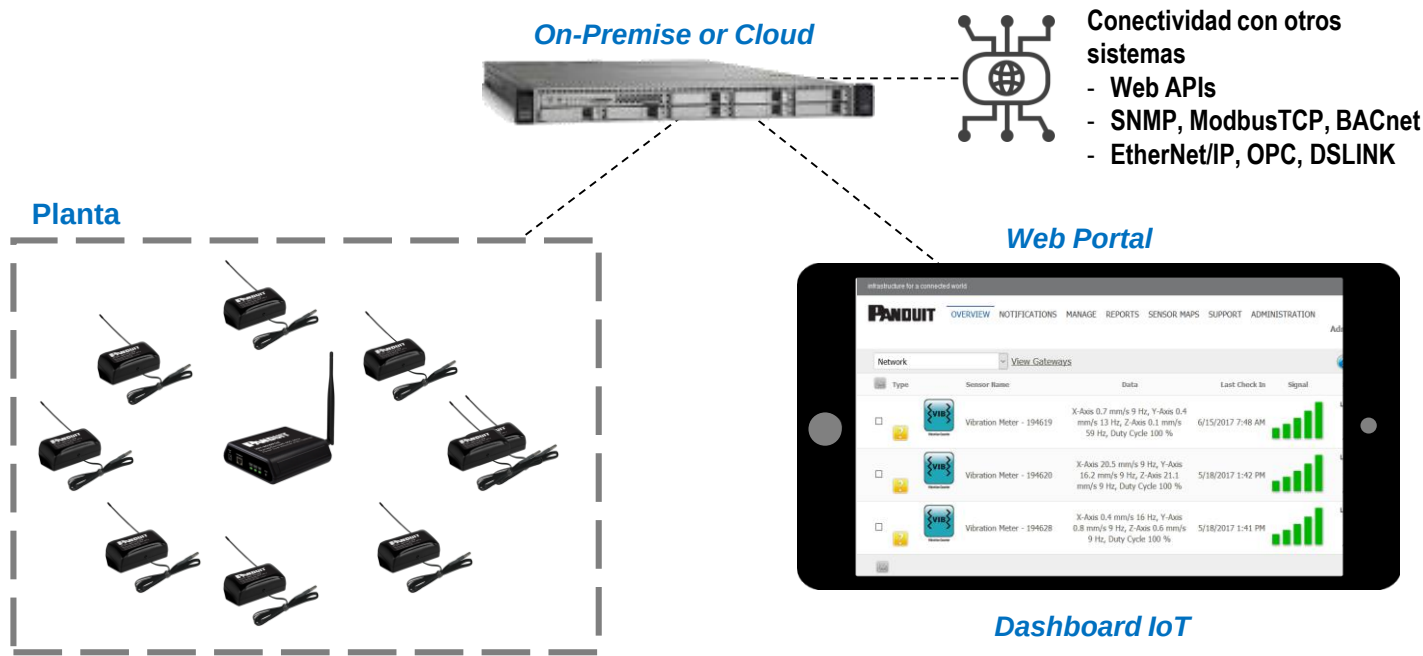
Sistema de Monitorización Wireless SynapSense®

Gestor de activos conectados para inteligencia IoT



-  Sensing and Routing Devices
-  Gateway Devices

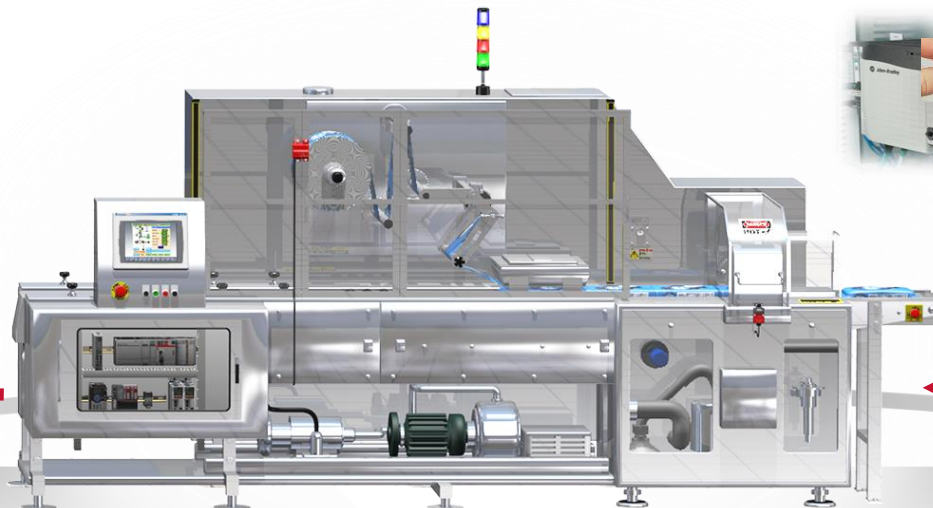
Sistema de Monitorización Wireless SynapSense®



Entorno Industrial: Máquinas y Equipamiento

Diseño de Red – Arquitecturas de referencia

Gestor de activos conectados para inteligencia IoT



SYNAPSENSE
a **PANDUIT** company

Datos en tiempo real



Análítica

Optimización

Consumo, Tiempo de funcionamiento,
Temperatura, Vibración



Procesos más eficientes

Predicción de fallos

Aplicaciones: Monitorización medioambiental y vibración

Vibraciones

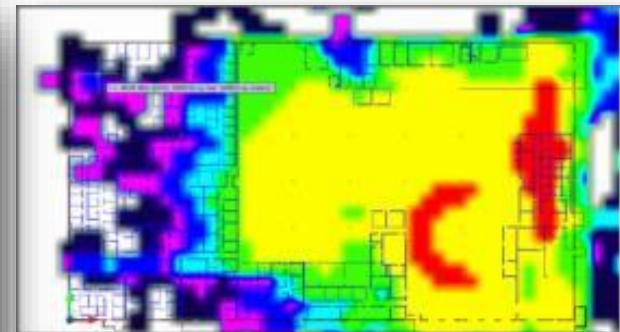
- Monitorización vibraciones
- Reducción del tiempo de caída no planificado
- Mantenimiento preventivo



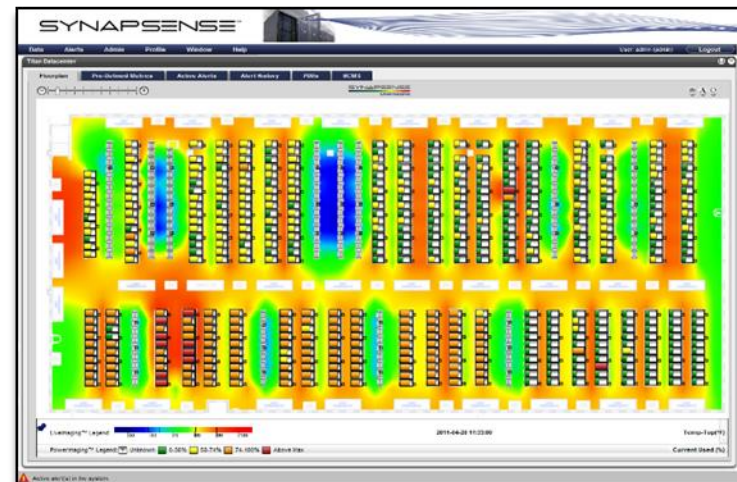
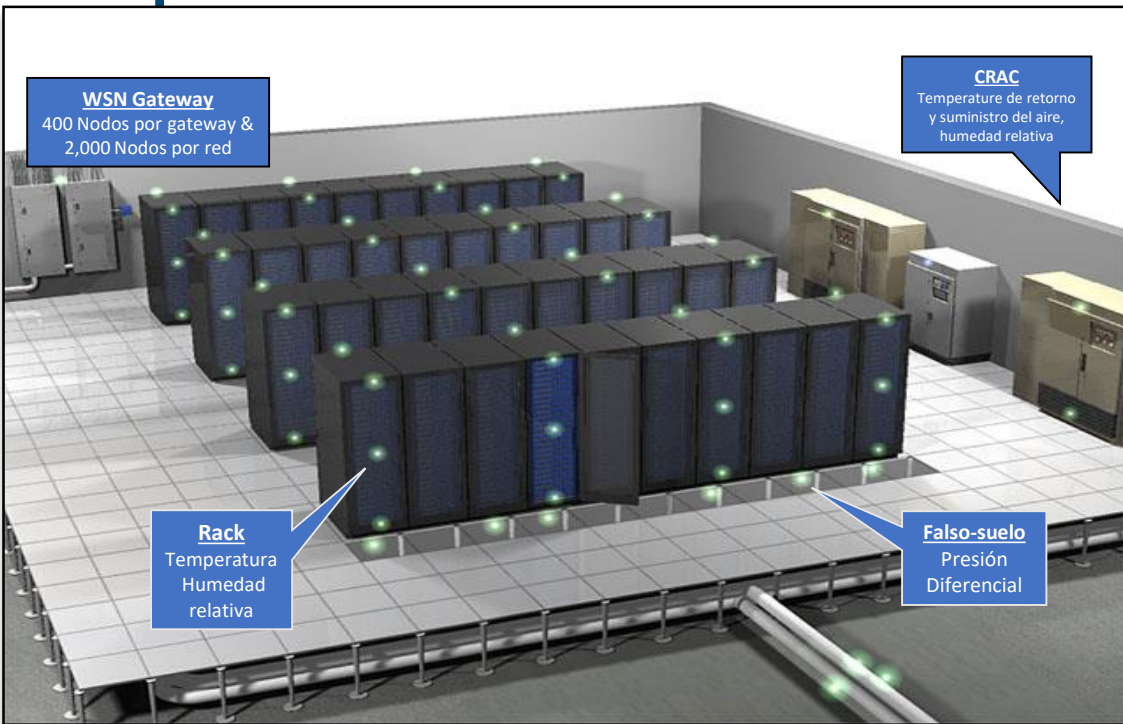
Panel de Control



Almacén Inteligente



Flujo de Aire & Gestión de la Climatización en DC , cumplimiento de los SLA's



- Imágenes en tiempo real - LiveImaging™
- Monitorización Medioambiental
- & Optimización
- Alarmas & Alertas
- Control Activo

Gateway
Inteligente Wireless
TM



Armario: Temperatura &
HR ThernaNode EZ™



Presión en falso
suelo
PNode2™



Unidad climatización:
Temperatura
& HR ThernaNode2™



Muchas gracias

PANDUIT™

