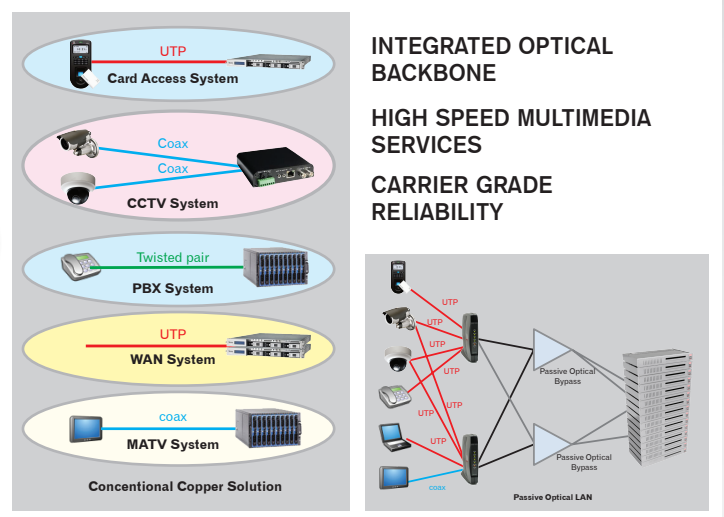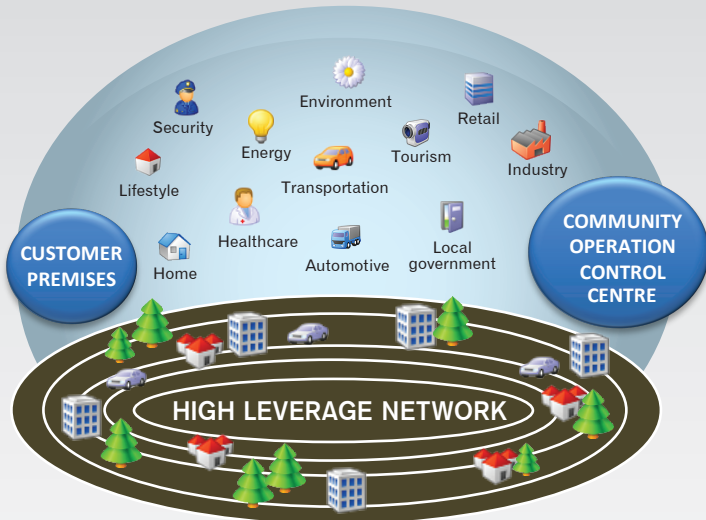# Integrated Optical Backbones for Smart Cities & Smart Buildings Overview for Property Developers and Owners

iK 思强
iKONXEPT

HOW TECHNOLOGY CAN HELP:

A SUSTAINABLE NETWORKED PLATFORM

INTEGRATED OPTICAL BACKBONE

**HIGH SPEED MULTIMEDIA SERVICES**

CARRIER GRADE RELIABILITY

A SUSTAINABLE PLATFORM EMPOWERING A SMARTER CITY

KEY BENEFITS:

- **Connectivity** – a high leverage network that interconnects citizens, government, business and communities
- **Smart** – capabilities in the network that allow better management and control to offer richer application experiences
- **Secure, private and resilient** – a network with the stability, resiliency, and security profile of telecommunications networks
- **Energy Efficient** – a network that is much more efficient and less costly to operate with less power

iKonxept is pleased to present an Integrated Optical Backbone solution for Smart Cities and Smart Buildings. Almost all buildings and businesses today run multiple copper networks as well as multiple building risers (due to copper transmission limit of 100m) to handle Internet, Telephony, Video Security, Wireless Access Points, Access Security, Integrated Building Management Systems and Home Automation. A typical building riser is shown below.
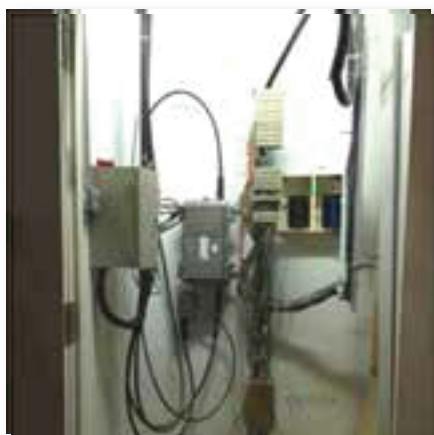

Building Riser
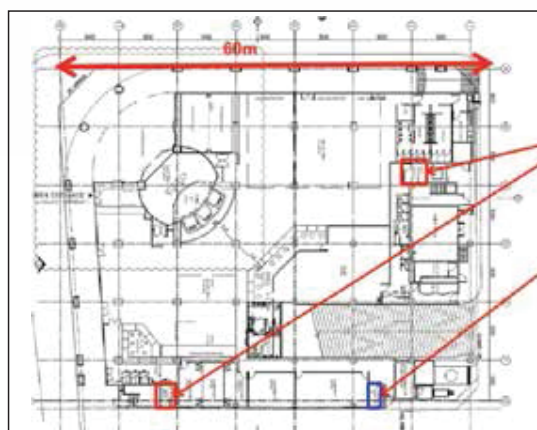
Copper Transmission Limit 100m – need more Building Risers per floor

In addition to multiple building risers companies typical require multiple LAN rooms equipped with Distribution and Edge Switches to provide Internet port connectivity as well as wireless access points for computer users. A typical LAN room shown below requires 24x7 Power, 24x7 cooling as well as Standby Power. Copper is now legacy and Smart Cities and Smart Buildings today can deploy an Integrated Optical Backbone strategy which replaces multiple copper networks and multiple LAN rooms with a Passive Optical Splitter.
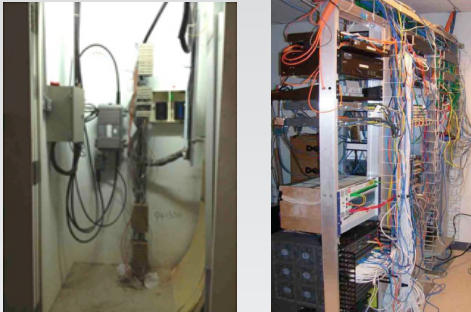
Multiple Copper Networks, Multiple LAN Rooms

Replaced by

- Optical splitter 1x32
  1 Riser fiber = 32 distribution fibers
- Plug and play design
- No field terminating
- No spicing required

Passive Optical Splitters

Over and above this, Copper Networks require traffic tagging and prioritization to handle real-time video, voice and internet traffic due to its inherent bandwidth limitation. Optical networks have huge bandwidth to handle all types of real-time video, voice and internet traffic in parallel without "choking" the network and with full end-to-end data security separation and 128-bit encryption.

The following table shows the challenge faced by property developers and owners who currently use multiple cabling and networking systems to run the various sub-systems in a building. All of these disparate sub-systems can be integrated into a highly robust Integrated Optical Backbone based on Passive Optical LANs

Sub System	Building Today	Smart Cities Smart Buildings
DATA	Cat 5/6/7	Passive Optical LAN
Telephony	Twisted Pair	
TV	Coax RG6	
Surveillance	Coax	
Access Control	Cat 5/6/7	
iBMX	Proprietary	

Copper is Legacy, Integrated Optical Backbones are here.