



Creating Infinite
Possibilities.

Requirements for the IoT infrastructure in the customer premises

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Evolution of cable operator's customer premises

Customers



Services



“Wiring Closet” Evolution



Emerging IoT Applications – Home Automation and Security



Emerging IoT Applications – Aging-in-Place and Tele Health





Retail Business Applications



Factory / Industrial Automation



Inventory Management



Transportation / Fleet Management



Utilities / Energy Management



Utilities / Energy Management



Traffic Management



Street Lighting Management



Public Safety Management



Public Transportation Management

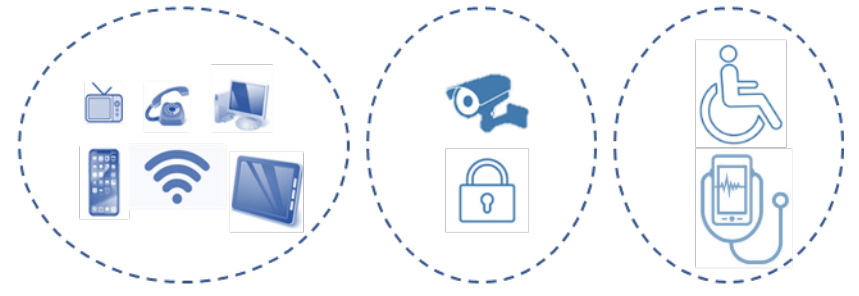
Needs of IoT Applications – Location and Coverage Needs



Service	In single-family homes	In multi-dwelling homes	In business Premises	In common areas	In public places
Traditional quad-play	X	X	X		
Residential IoT	X	X		X	
Business IoT			X		X
Smart city applications			X	X	X
Telehealth applications	X	X	X		
AIP applications	X	X		X	X



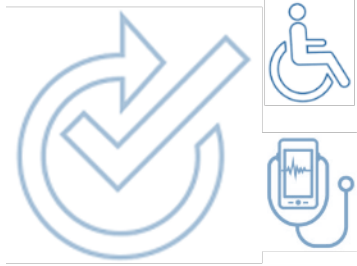
**Many Devices
Different Vendors**



**Different Classes
of Applications**



**Common Security
Framework**



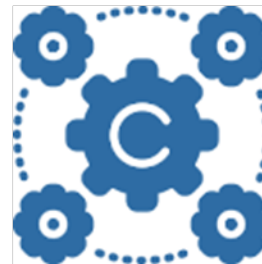
**Reliability
Needs**



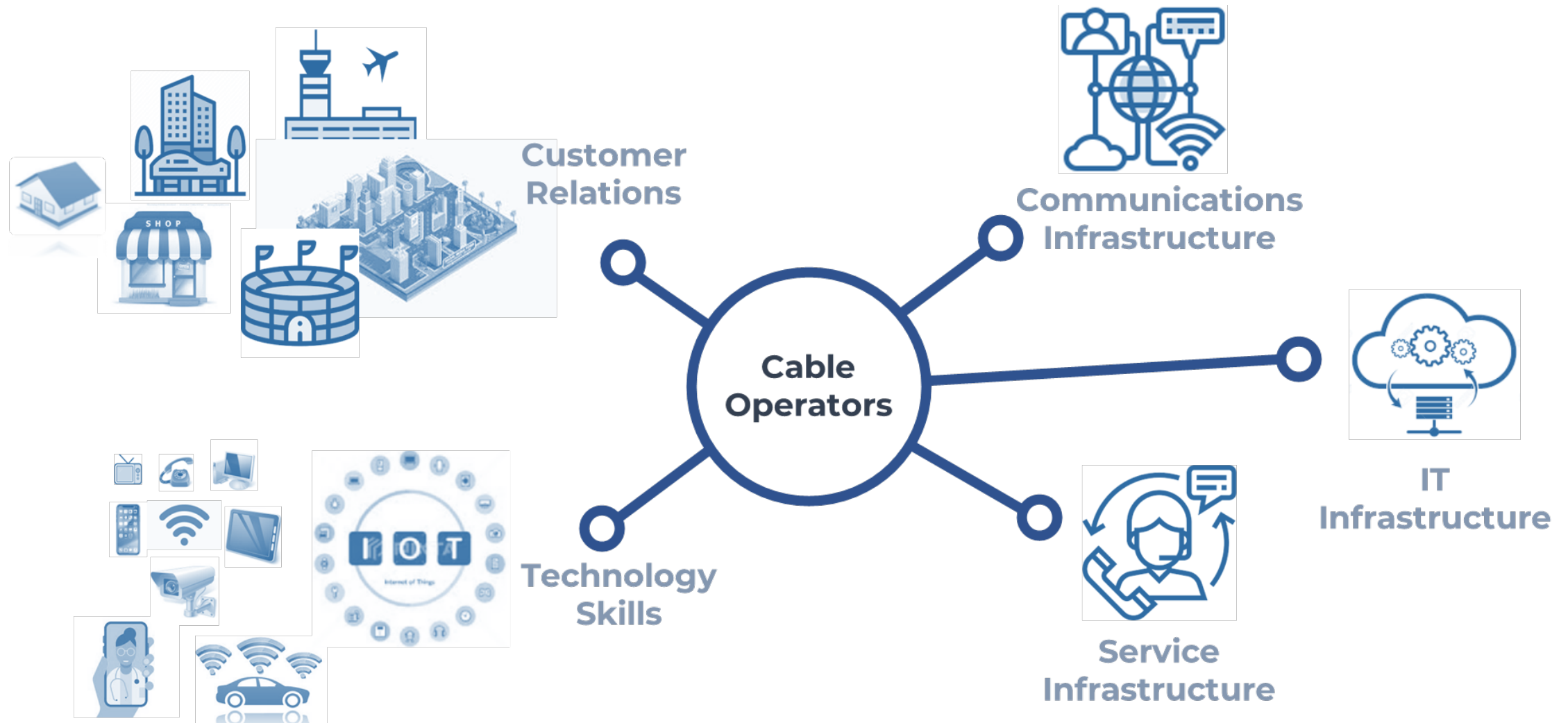
**Timing / Latency
Needs**



**Power
Needs**



**Interoperability
Needs**





Customer Premises Infrastructure shall support following locations:

- **Single Family Units:** Living Unit indoor and outdoor locations
- **Multi-Dwelling Units:** Living Unit indoor and outdoor + Common Areas indoor and outdoor
- **Commercial Units:** Unit indoor and outdoor + Common Areas indoor and outdoor
- **Public Spaces:** Support in indoor and outdoor cabinet and pole-mounted locations



Customer Premises Infrastructure shall support following:

- **Wired Infrastructure:** Preferably for distribution network and fixed devices
- **Wireless Infrastructure:** For movable devices.
- **Coverage:** Wireless infrastructure should support adequate signal coverage
- **Timing/Latency:** The network shall meet application timing synchronization/latency needs



Customer Premises Infrastructure shall support following security requirements:

- **Authentication:** All communication channels will support user authentication
- **Encryption:** All communication channels will support data encryption
- **Secure Boot / Upgrade:** All devices should support secure boot and upgrade capability
- **No Default Credentials:** Communication channels will not support any default credentials
- **Secure Test/Diagnostic:** Test/diagnostic ports should be disabled or require secure login



Customer Premises Infrastructure shall support following powering requirements:

- **Power Source Options:** AC mains, HFC 60V/90V, Power over Coax, POE
- **Power Backup:** Backup power capability depending on application and location



Customer Premises Infrastructure shall support following environmental requirements:

- **Locations:** Indoor wall cabinet, outdoor wall cabinet, street cabinet, pole-mounted cabinet
- **Environment/Safety Standards:** Meets local environmental/safety standards per UL/NEMA
- **Building Codes:** Installations shall meet local building codes including aesthetics



Infrastructure shall support following installation/support requirements:

- **Accessibility:** Must provide easy access to support personnel
- **Pre-Install:** New construction should pre-install basic infrastructure
- **Autoconfiguration:** Devices should support auto-configuration capability
- **Remote/Auto-upgrade:** Devices should support remote automatic software upgrades
- **Status Notification:** Should support notification of failure / maintenance status



Infrastructure shall support following reliability requirements:

- **Power Reliability:** Must provide backup power as needed for the application and location
- **Communication Reliability:** Must provide alternate backup communication channel
- **Device Reliability:** Critical devices need to support built-in redundancy or standby mode
- **Service Reliability:** Critical applications need 24x7 quick-response support services



Infrastructure shall support following interoperability requirements:

- Framework should provide a common interface for applications to work with each other
- Framework should provide a consistent way to manage all applications and devices



- **We have a well-defined need to support future IoT-enabled applications and services**
- **Cable Operators are very well placed to take advantage of this need**
- **It is important to develop a standards-based customer premises framework**
- **SCTE Wiring Closet Drafting Group has already done a lot of preliminary work**
- **We need active participation from more SMEs to help complete this important work**



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Thank You!

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