IOT Brings New Opportunities for MSOs

2019.04.11









Porti	ons of IoT	Verticals Addressable by
IoT Vertical	% Addressable By Cable MSOs	Notes
Humans	30%	 This category represents wearables. For the time the human is at home they could connect to the home cable network. Outside the home they could choose to be an IoT cable MSO services subscriber, so their IoT data is routed to the cable MSO network
Home	100%	No surprise! The home market is completely addressable by the cable MSO. The competition from cell phone providers, home entertainment and over the top (OTT) players will be stiff. Customer retention will become challenging resulting in subscriber loss or the cable MSO just providing opaque connectivity.
Retail Environments	100%	 Cable MSDs provide some business services or broadcast TV, however, there are many small businesses looking for a one-stop shop with managed services for all their needs. IoT will become just another service in the overall service catalogue. The cable network could extend to these customers. Connectivity potions include cable, Wi-Fi or small call.
Offices	100%	Offices present a similar proposition to retail environments. The difference in some cases may be that offices require all data to be resident on premise.

Work sites	0%	Work Sites typically need temporary connectivity. It is possible for cable MSOs to provide this. This vertical currently seems a little further away from the services cable operators provide today.
Factories	10%	 Cable MSDs operate in many states in the United States that have industries and factories. Cable today concentrates on providing broadcast TV and Internet connections for human consumption. However, once the network is enhanced with other access technologies, cable MSDs could penetrate this vertical as well.
Vehicles	30%	- Vehicles, like wearables, are an adjacent market to the home. Cable MSOs could extend their reach by providing service at least when the vehicle is within the range of the home network or outside plant. - Cable MSOs as add-on subscription could offer vehicle IoT data management services.
Cities	100%	 Public infrastructure IoT is ripe for the taking for cable MSOs. Cable MSOs already provide free Wi-Fi access in urban areas. They could leverage this existing infrastructure to provide IoT sensor aggregation.
Outside(Cargo handling)	0%	This vertical includes shipping, cargo movement, and transport infrastructure. The preferred uplink for sensor data is satellites. It will be difficult for cable MSOs to significantly impact this infrastructure.

	Projectio	n
IoT Addressable Market by Cable MSOs	Market Size	Notes
Verticals Addressable by Cable Operators Worldwide	\$1.8T – \$4.4T	Applying the percentages of each vertical
North America (NA)/Europe Addressable Market	\$522B - \$1276B	• The share of the total market is 29% each for North America and Europe.
Cable MSO Market Share	\$104B - \$255B	 Assuming cable operators take 20% of the market.

		•
basis of the Internet vices can be divided in prate anytos: mainly veillance, digital med formance; itum rate service: mainly e such as POS, smart hom prate services: mainly shaologies such as NB-14 king, logistics and trai	of Everything is data transmo to high, medium and low rate su use technologies such as 36, - ical, and car navigation et y uses GPES and other technol- e, lockers, etc., but with low use LFWAN (Low-Power Wide J, Loka, Sigfox, etc., which socrtation. intelligent build	ission, and according to the transmission rate, [10] rices. Fit, and are used in pervices such as vide- iteration of the second second second second second second second second second second second second real-time requires this frequency, real-time requirements: Area Network) abort-reaser wireless communication into a second
-	应用场景	网络接入技术
高速半 (>10Mbps)	应用场景 CCTV, eHealth	周纬接入技术 3G: HSPA/EVDO/TDS 4G: LTE/LTE-A WIFI 802.11 技术
高速率 (>10Mbps) 中速率(<1Mbps)	点用装茶 CCTV, eHealth POS, Smart Home, M2M Backhaul	用件格入技术 3G:HSPAJEVDOTDS 4G:LTE/LTE/A WIFI 802.11 北米 2G:GPRS/CDM/2K1X MTC/eMTC

		LTE-M		10.1-7			
	Cat1 (Rel.8)	Cat 0 (Rel.12)	Cat M (Rel.12)	NB-101 (Rel.13)	LoRa	SigFo	
Coverage*	Same as LTE coverage (Cat-M : Deeper Penetration)		+ 20dB than LTE (<22km)	<14km	<17km		
Spectrum		LTE In-band Onl	y	LTE In-band Guard band Standalone	Un-licer	ised Band	
Signal BW	20 MHz	1.4 MHz	1.08 MHz	180 kHz	125 kHz	0.1 kHz	
Data Rate	10Mbps	1Mbps	1Mbps	200kbps	10kbps	100bp	
Battery Life		10years		10years	100	wars	

Technology	Frequency	Data Rate	Range	Power Usage	Cost
2G/3G	Cellular Bands	10 Mbps	Several Miles	High	High
Bluetooth/BLE	2.4Ghz	1, 2, 3 Mbps	~300 feet	Low	Low
802.15.4	subGhz, 2.4GHz	40, 250 kbps	> 100 square miles	Low	Low
LoRa	subGhz	< 50 kbps	1-3 miles	Low	Medium
LTE Cat 0/1	Cellular Bands	1-10 Mbps	Several Miles	Medium	High
NB-IoT	Cellular Bands	0.1-1 Mbps	Several Miles	Medium	High
SigFox	subGhz	< 1 kbps	Several Miles	Low	Medium
Weightless	subGhz	0.1-24 Mbps	Several Miles	Low	Low
Wi-Fi	subGhz, 2.4Ghz, 5Ghz	0.1-54 Mbps	< 300 feet	Medium	Low
WirelessHART	2.4Ghz	250 kbps	~300 feet	Medium	Medium
ZigBee	2.4Ghz	250 kbps	~300 feet	Low	Medium
Z-Wave	subGhz	40 kbps	~100 feet	Low	Medium













Thank you !