**Internet of Medical Things (IoMT): Empowering Healthcare with IoT** and 5G



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### Self Introduction

Medical Doctor | Technology Enthusiast

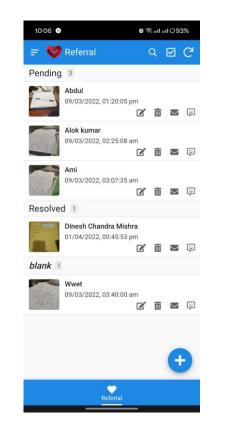




Syncing...

Cardiology Cancel IFH



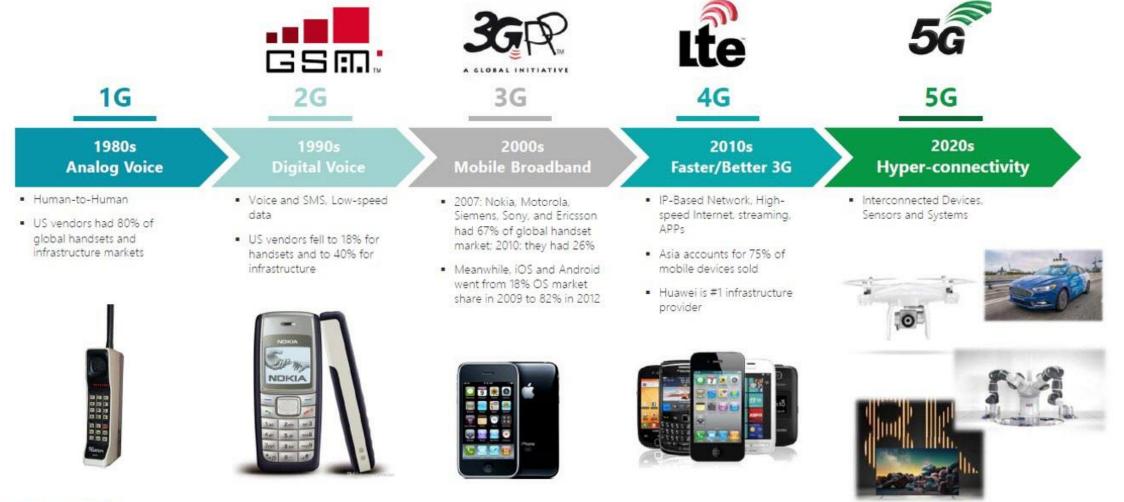






#### Every new generation of connectivity capability enables fundamental process reinvention

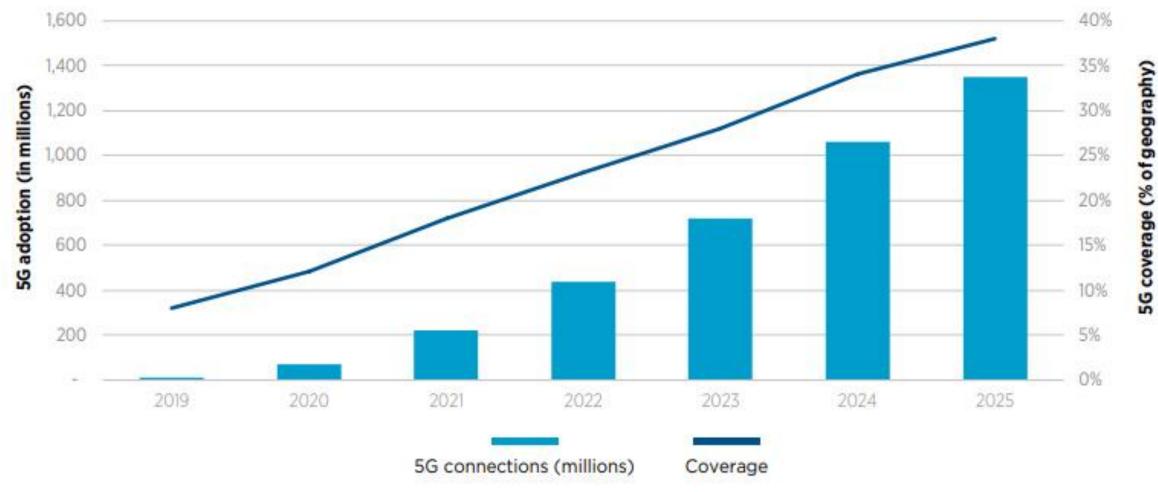
The 5G disruption - from Consumer centric towards Industry & Verticals



#### Towards $\rightarrow$ 5G

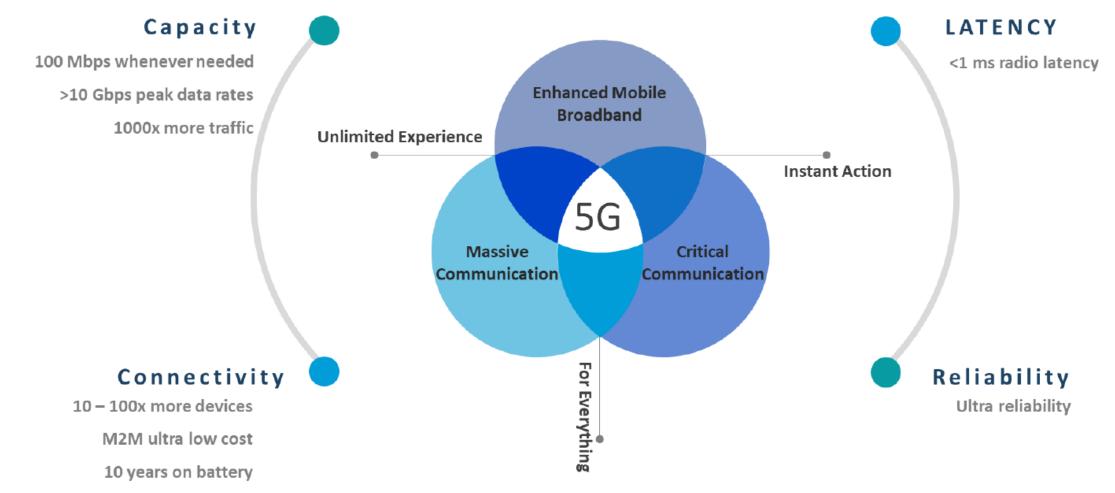


## Global 5G coverage and adoption (Source: GSMA Intelligence)



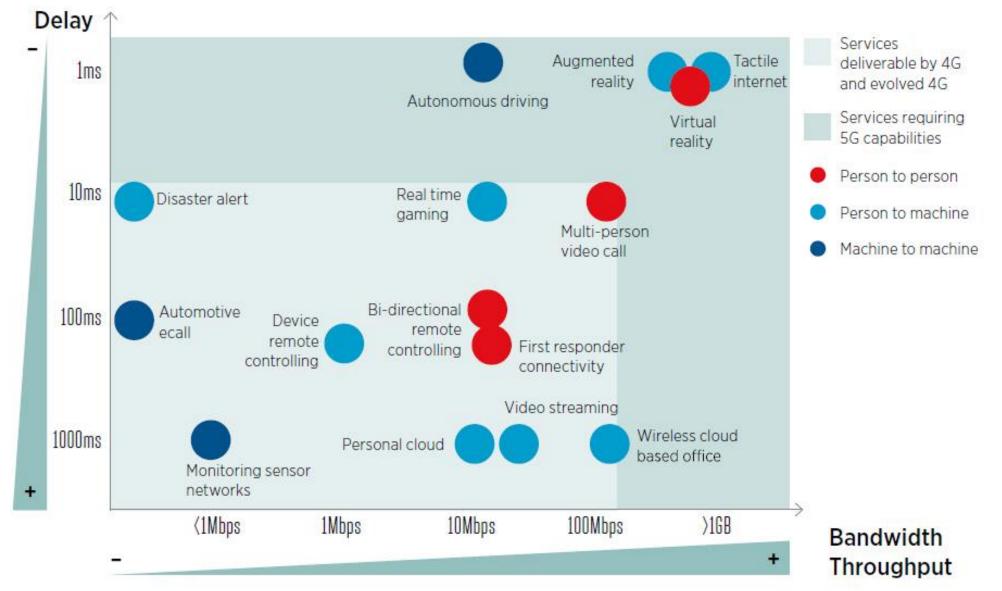
#### Towards $\rightarrow$ 5G





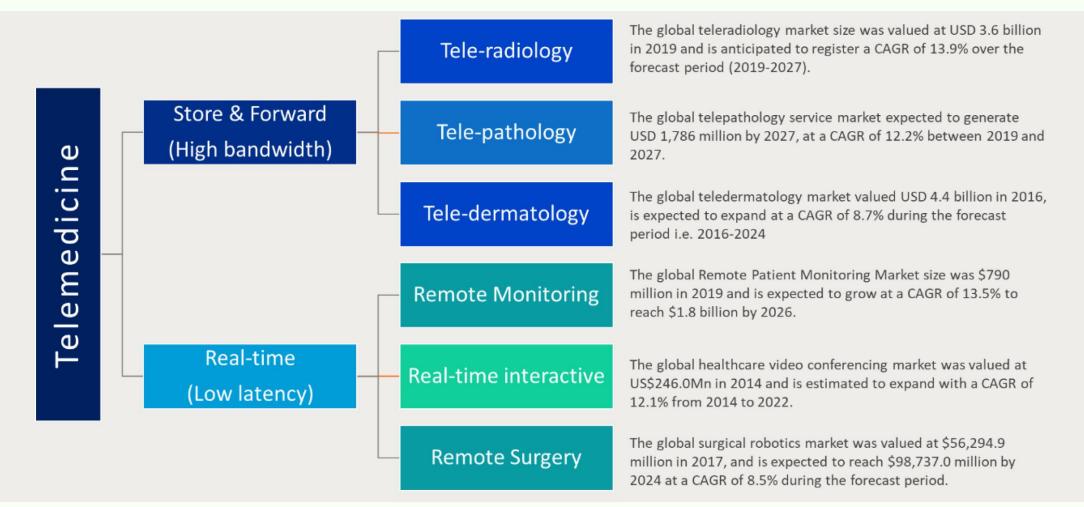
### G Motivations





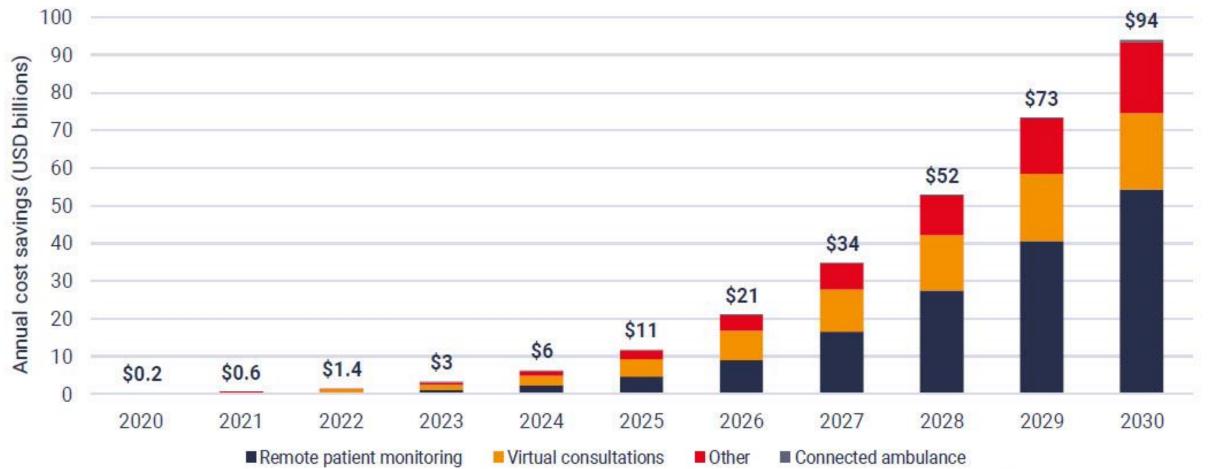
## 5G & Health





## 5G & Health

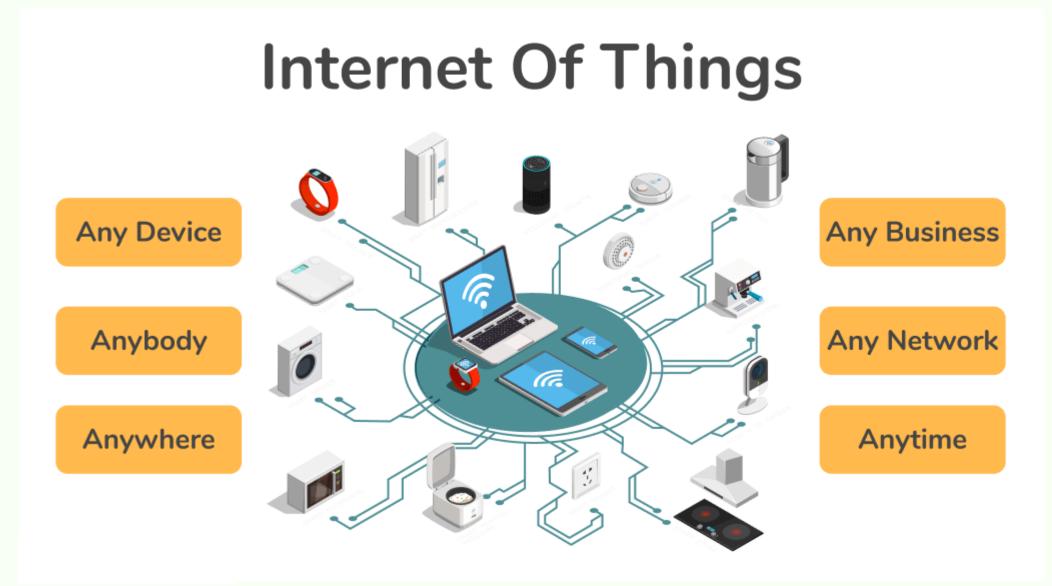




Source: STL Partners analysis

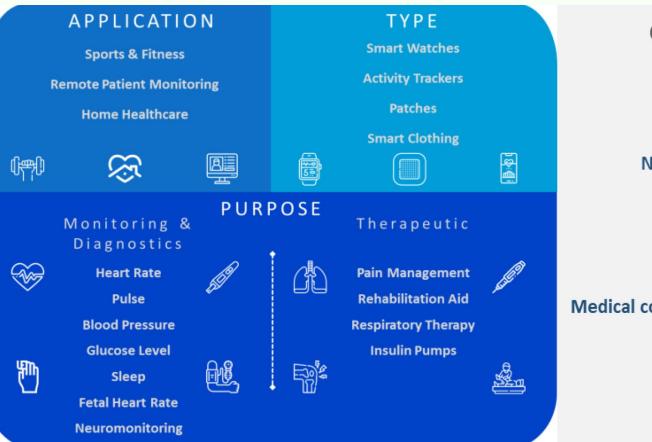
## IoMT, 5G & Health





# IOMT, 5G & Health





Category-wise Usage of mHealth Apps Across the Globe



## 5G & Health





#### Estimated global impact of remote patient monitoring (2030)

Source: STL Partners analysis, NHS data, NHS England data, STL Partners survey August 2019, World Bank Data

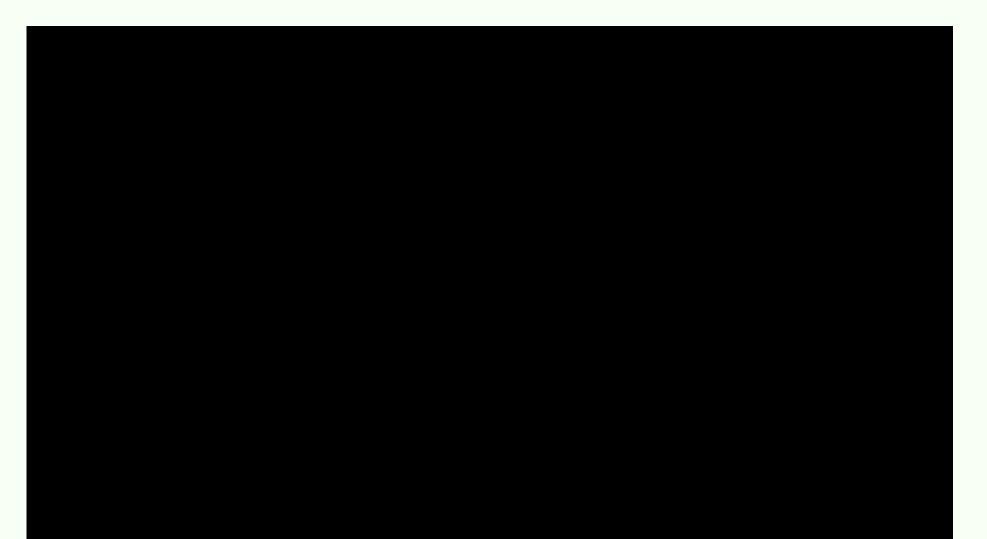
#### Asset Inventory Management







#### Asset Utilization



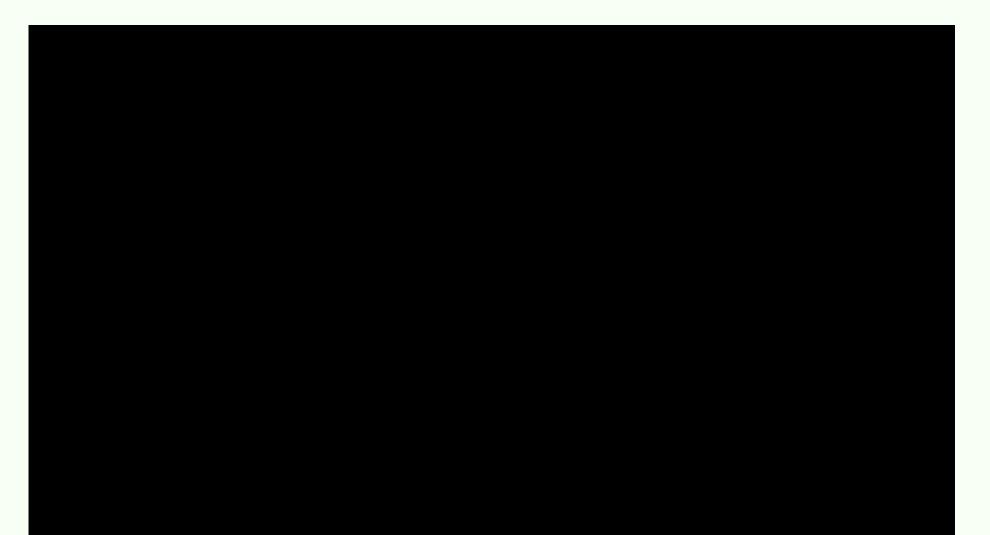


#### Asset Safety





#### Patient Throughput Management





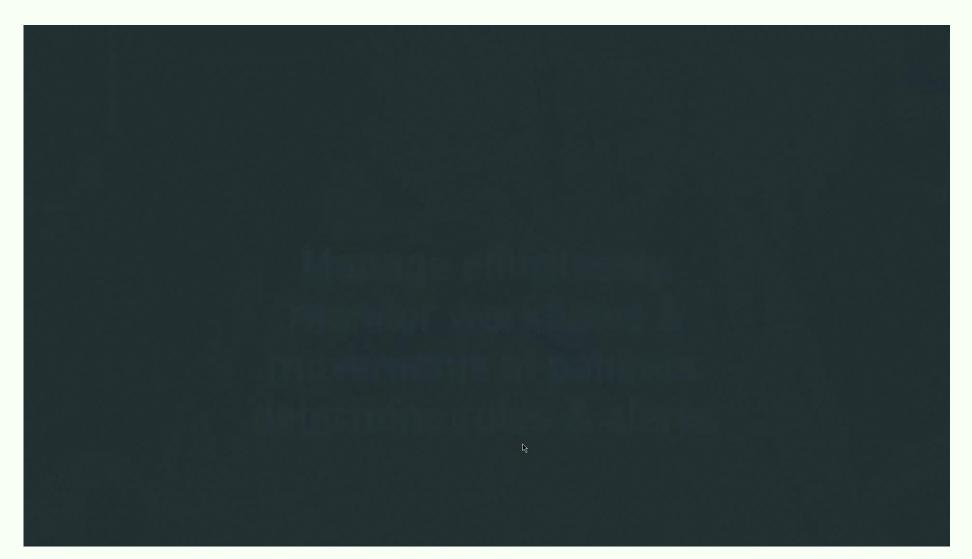
#### Patient Safety





# THEW DELH

#### Infant Safety



# AFAMILY HOSPITA

#### Staff Safety





#### Location-aware Work Demand Management



# AFAMILY HOGO ITA

#### Environmental Monitoring



	Use case			Benefits		Why 5G?
	Advanced predictive maintenance	Using dozens of sensors to give an accurate, real- time representation of the status of a machine to perform predictive and preventative maintenance	⇒	Reduce downtime Reduce spend on maintenance Reduce machine replacement rate	⇒	Capacity Reliability Device costs
B	Remote patient monitoring	Real-time streaming, monitoring and analysis of patient data from e-health devices and wearables	•	Reduce transfer delays Increase hospital throughput Increase emergency turnover	⇒	Device density Bandwidth MMTC
69	Augmented reality	Using augmented reality headsets to train/guide medical professionals, or create an immersive/ purposefully distracting experience for patients	•	Reduce maintenance resources Reduce spend on training Improve patient experience	⇒	Bandwidth Ultra-low latency
<b>.</b>	HD virtual consultations	HD video streaming between doctor and patient (e.g. for a routine appointment) or primary care and specialist doctor (e.g. for a referral appointment)	•	Increase patient throughput Reduce cost of appointments Cut "Did not attend" rates	⇒	Low-latency Bandwidth Reliability
₽ ₽ ₽	Connected ambulance	Real-time streaming of patient data/information (sensors + HD video) between ambulances and the hospital	•	Reduce ambulance handover times Increase emergency department turnover	⇒	Ultra-low latency Bandwidth Reliability
÷ Ņ.	Inventory management devices	Using light 5G sim devices (e.g. smart phone) to scan, track and manage inventory stores in hospitals or pharmacies	•	Reduce inventory costs Increase human productivity	⇒	Device costs Capacity
						Source: STL Partners



- A healthy society makes a healthy world and thus a better future comes with 5G-enabled smart healthcare.
- 5G brings latency low enough to provide real-time information either to deliver live HD video to a paramedic or to enable remote surgery.
- High bandwidth enables doctors to keep in contact with patients or the elderly or to transmit and analyze large data files.
- Reliability and security enhances communication within hospitals and thus 5G technology is set to have a transformative impact on healthcare.



