Make 5G Broadband a viable investment through Co-creation and Collaboration

Bridging the Digital Divide while Creating Shared Value

Dr Mothilal De Silva
Internet Plus Asia

Hilton Hawaiian Village
Honolulu
16th January 2022

PACIFIC TELECOMMUNICATIONS COUNCIL

PTC'22
REUNITE. RETHINK. RENEW.

@PTCouncil #PTC22

Content

- Post Covid “Digital Poverty Trap” and Solutions
- Network Sharing
- Co-Creation for 5G ready services
- Conclusion

Post Covid “Digital Poverty Trap” and Solutions

Collaboration for Network Sharing and Co-Creation

PACIFIC TELECOMMUNICATIONS COUNCIL

PTC’22
REUNITE. RETHINK. RENEW.
@PTCouncil #PTC22

Post Covid scenario since early 2020

5G is a transformational technology for new use cases

- Working from home
- Schooling from home
- Buying from home
- Remote doctor consultation, scheduling vaccine appointments

The Pandemic had changed the way we interact and have a lasting effect on the way we communicate.

But at the same time Covid lockdown turned the problem of Digital Exclusion a catastrophe for deep rural and marginalized poor due to high cost of data and lack of fixed broadband / 4G accessibility. Online education of the most vulnerable children were greatly affected.

Millions in emerging markets will suffer the consequences irrespective of technology.

5G - Optimizing Cost is the solution for “Digital Poverty Trap”

- People in developing countries face the “Digital Poverty Trap”
- Incremental CAPEX for 4G to 5G is 1.7 times higher than 3G to 4G transition
- Revenue from plain vanilla connectivity is not sufficient to justify 5G investment. More revenue streams will be required to fill the gap and Telecom industry can unleash the power of these new technologies to explore new revenue opportunities.

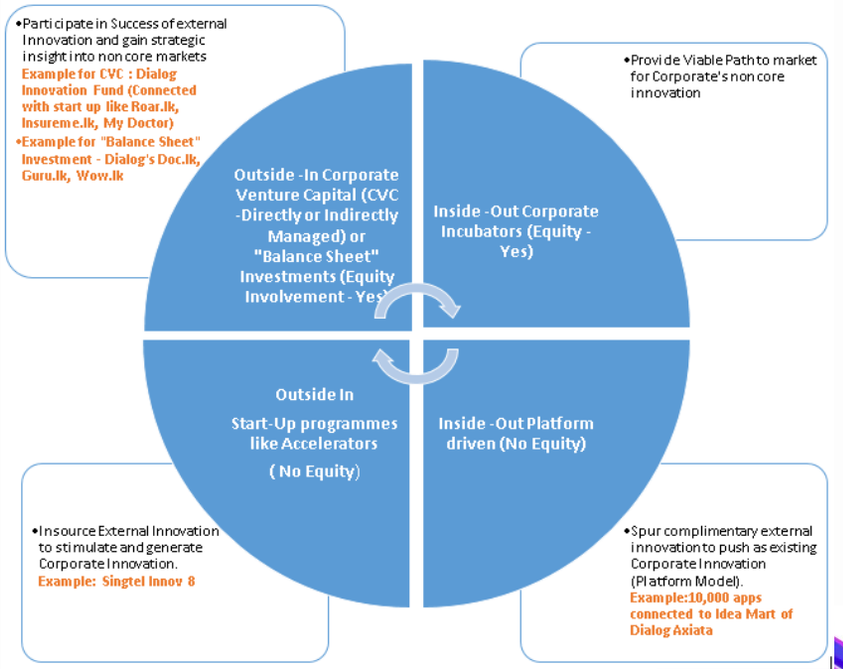
To optimize cost, attack on two fronts

Collaboration - Hardware and Software

- Share Infrastructure
  - Multi-use networks- One Trench (piping/electricity/telecom), ecological protection – Sustainable Development Goals – CAPEX Optimization
  - Passive Network Sharing – Mast, Co-location – CAPEX and OPEX optimization
  - Open RAN
  - Spectrum Sharing
  - SDN / NFV and Automation
  - Network Slicing – Multi Tenancy

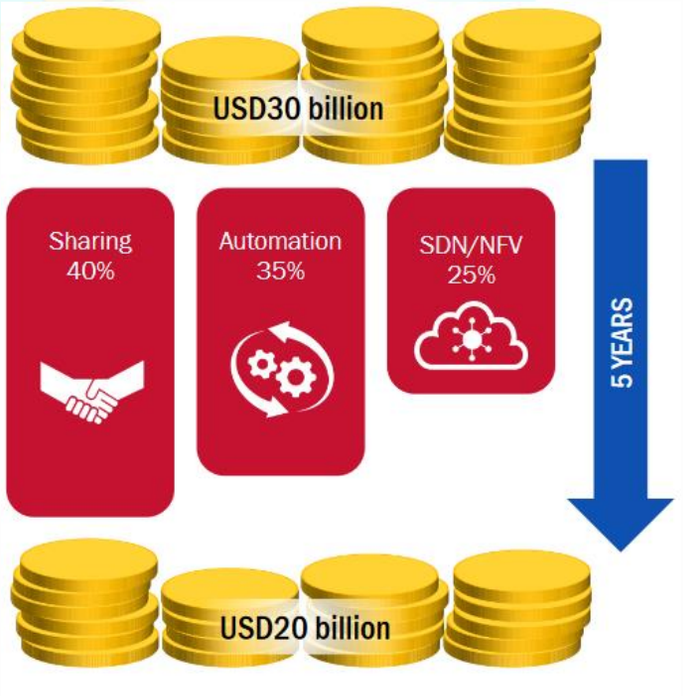
Co-Creation – 5G ready Applications

Co-Creation through 3rd parties ,Telco – Startup collaboration



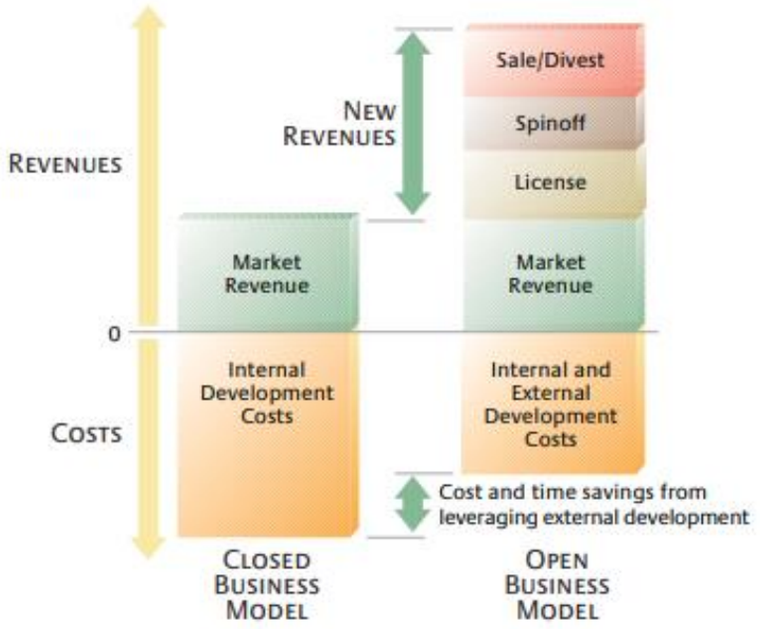
Optimization of cost through Network Sharing, Collaboration and Co-creation

Cost Reduction through Network Sharing and Collaboration

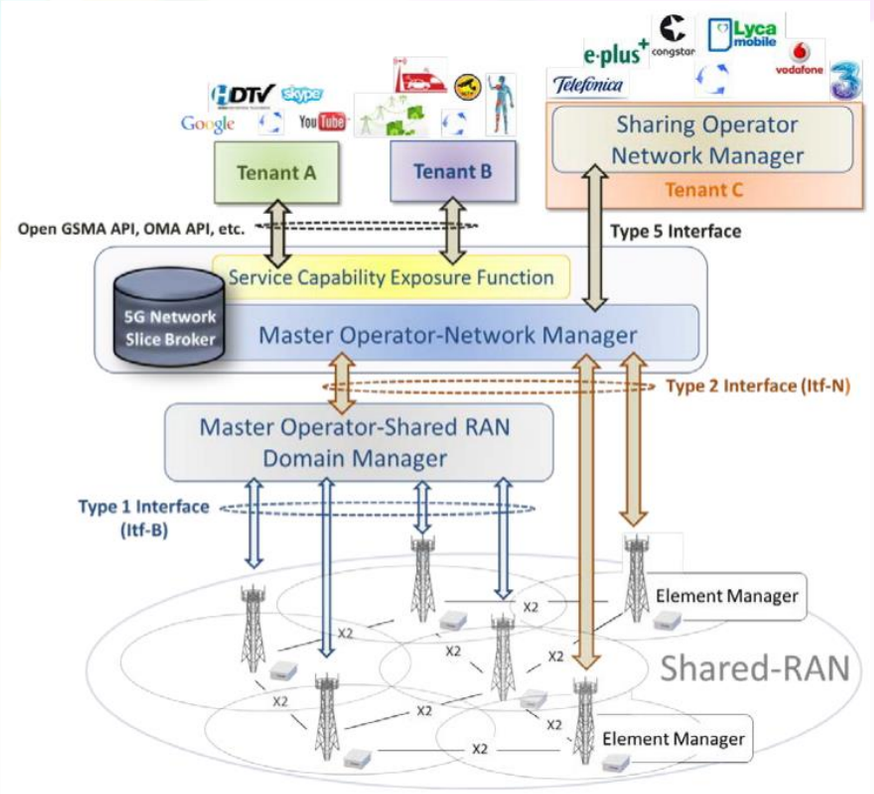


[1]This conclusion is based on calculations by over 50 MNOs surveyed by Analysys Mason, and case studies of disruptive, opex-light MNOs such as Reliance Jio. The results of these studies are detailed in the report.

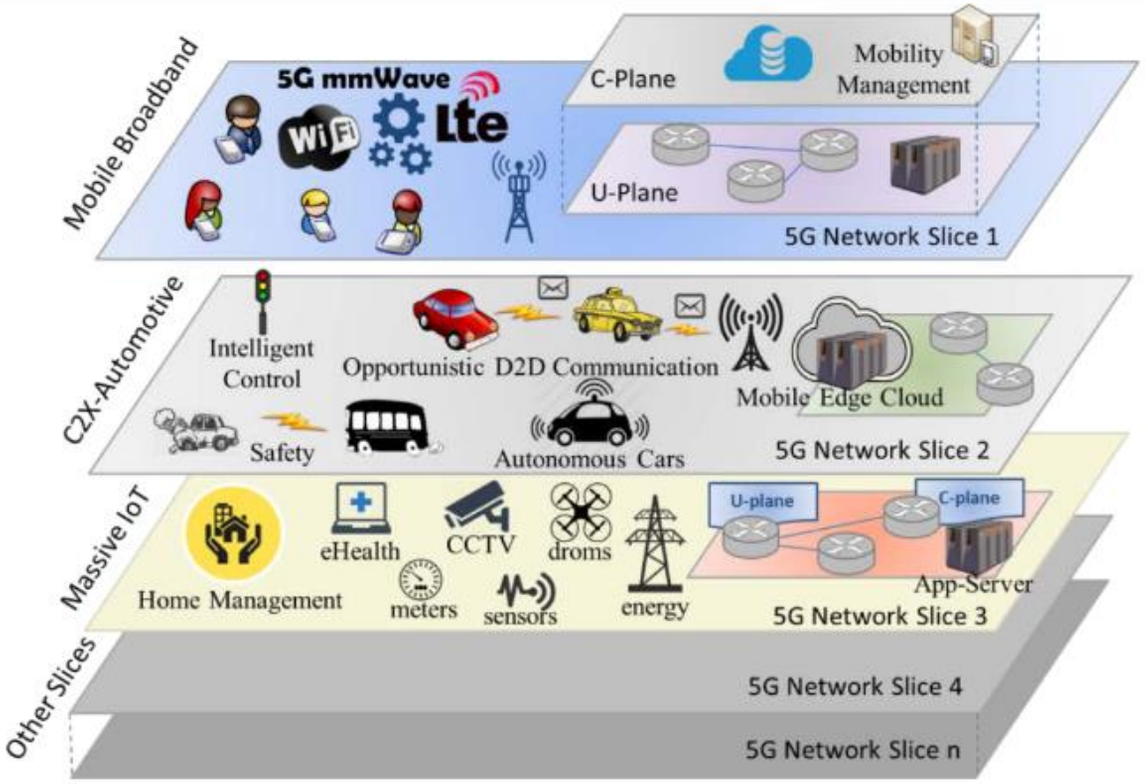
Cost reduction through Open Innovation Co-Creating 5G applications through Start-up Telco Collaboration



Sharing of Infrastructure and Network Capabilities



Network Slicing in 5G facilitate sharing of network with not only other operators but also with other Verticals such as MedTech, EnergyTech, EdTech



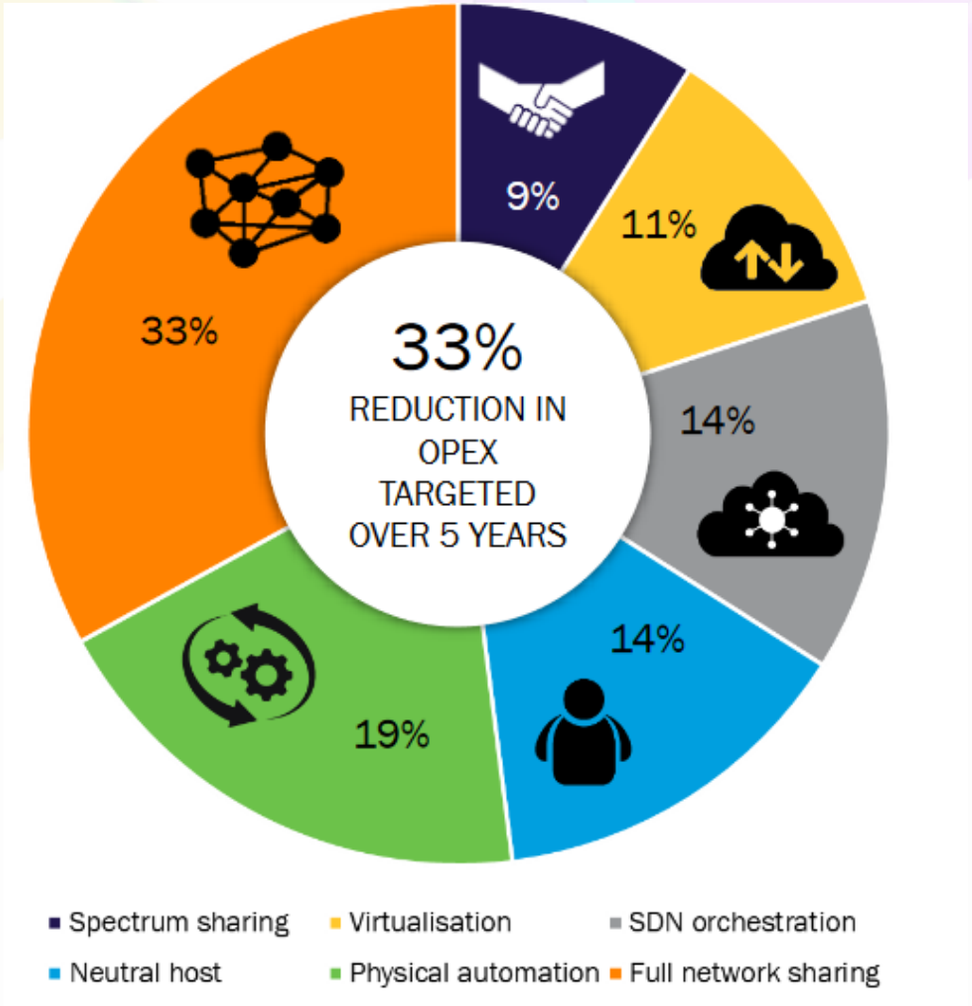
PACIFIC TELECOMMUNICATIONS COUNCIL

PTC'22
REUNITE. RETHINK. RENEW.
@PTCouncil #PTC22

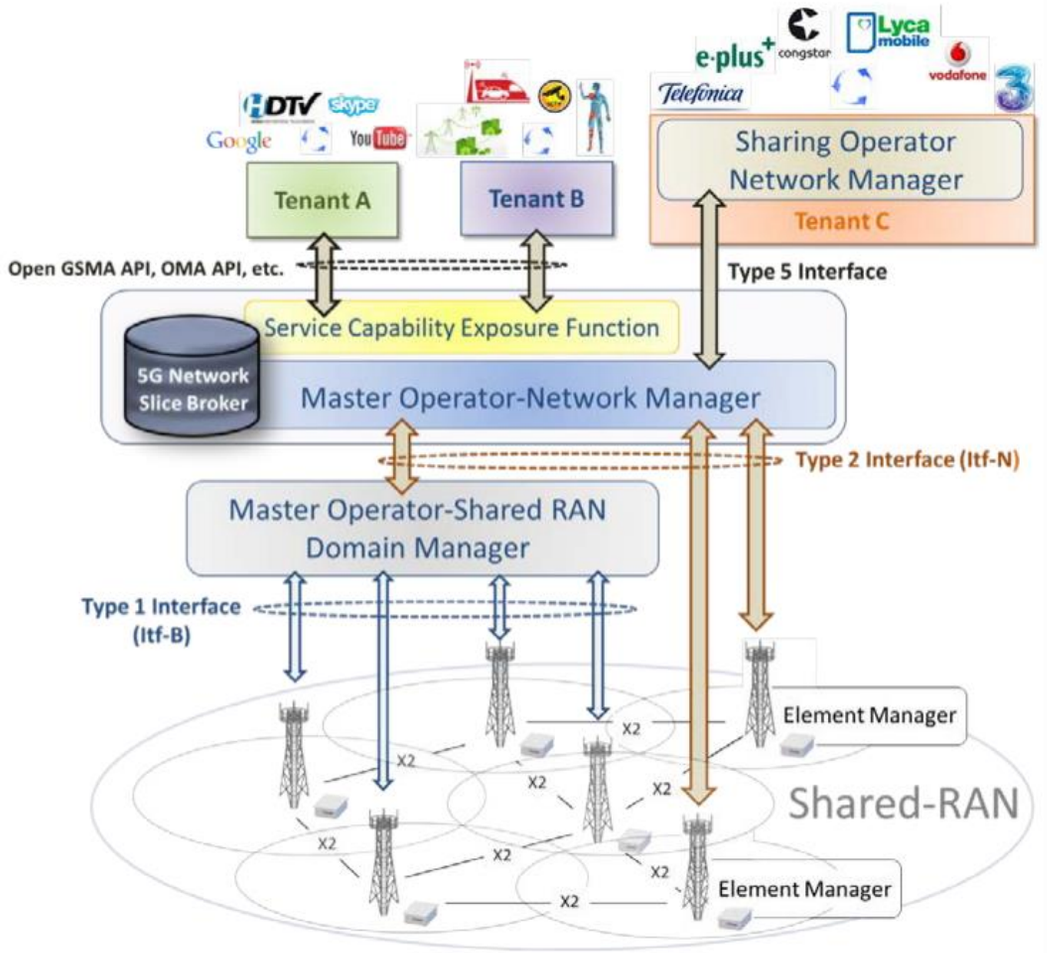
- 5G is the new frontier technology that can be used by the new Start-ups to run their applications circumventing telecom service providers by leveraging advantages of 5G such as over 1Gbps speed, low latency and slicing of network to have a dedicated space for each super service. Hence it is important for Telecom operators to bring start-ups within the Telecom ecosystem without forcing start-ups to build their own ecosystem bypassing telecom, in Over the Top (OTT) fashion like Skype and Whatsapp for voice and messaging. 5G will provide a meaningful outcome to the bandwidth hungry, low latency applications/ platforms such as remote surgery, autonomous vehicles and smart cities.

Network Sharing

OPEX Optimization through Sharing



analysys mason

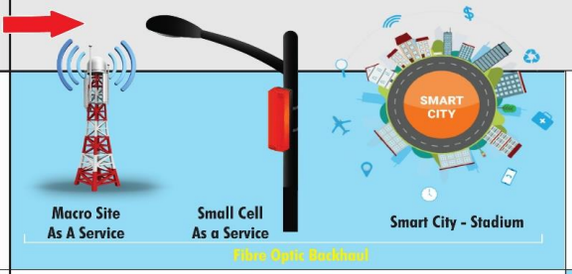


PACIFIC TELECOMMUNICATIONS COUNCIL

PTC'22
REUNITE. RETHINK. RENEW.

@PTCouncil #PTC22

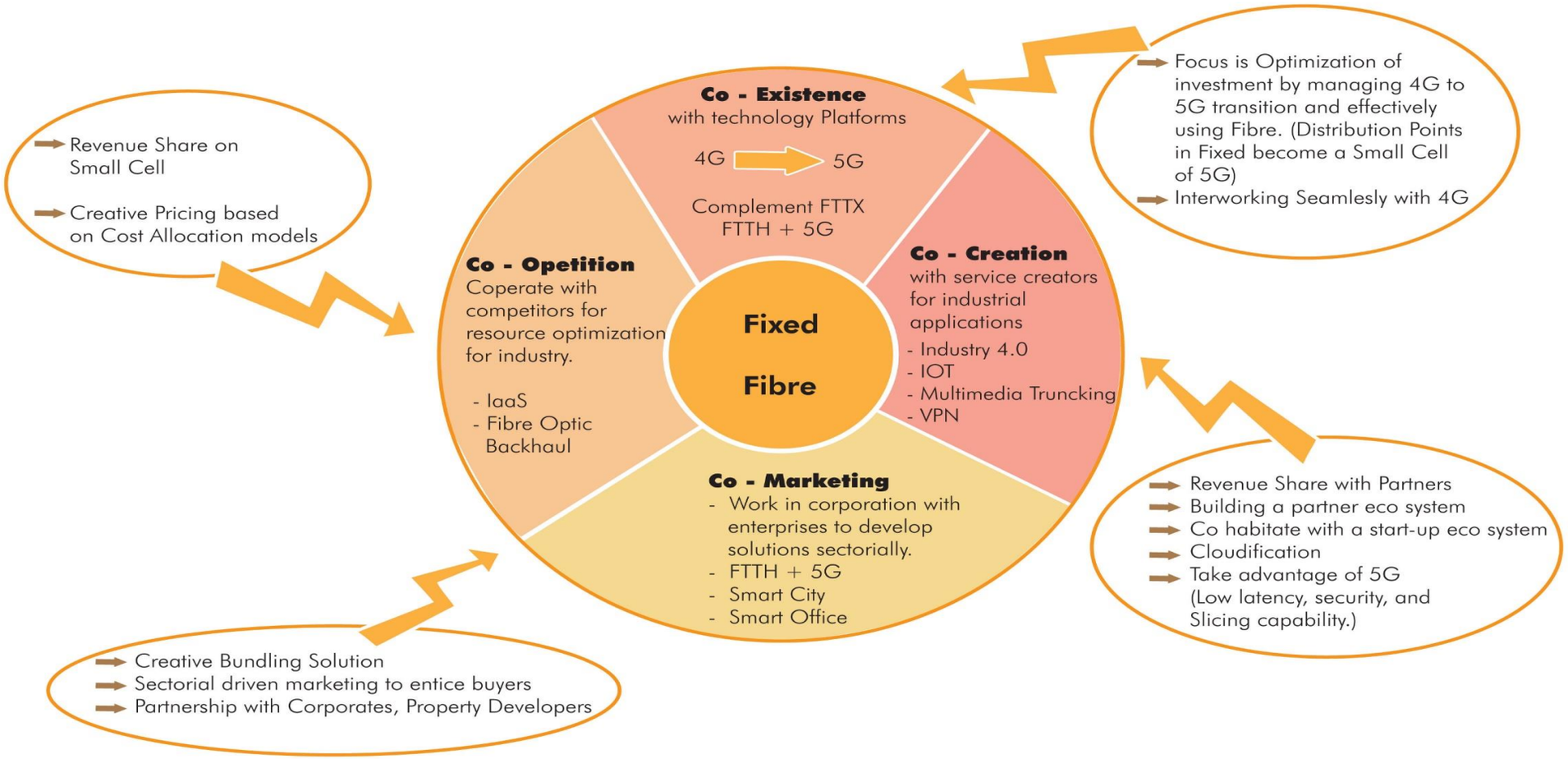
5G Focus Areas for Fixed and Mobile

	Mobile Operators	Fixed Operators		
Wholesale (Infrastructure)				
Corporate			5G for Redundancy	
SME			5G as a complementary solution to FTTX	
RESIDENTIAL	Urban CBD Area ✓✓ High Density Residential ✓✓✓ Sub Urban Fringe ✓✓ Rural ✓			
	Mobility & Home Applications 1.) Low Band spectrum obligations 2.) Gigabit connectivity to home 3.) Live immersive Sporting Experience 4.) Multiparty Virtual Reality Games 5.) Demanding low latency, high bandwith 6.) Smart Home/ infortainment	**(1.) Infrastructure As a Service** ⟶ Key focus area for TFL	**(2.) Industrial Solutions (fixed)** ⟶ Low latency connectivity solutions But non cellular IOT's are options Network slicing is critical for 5G	**(3.) Fixed 5G as a backup solution for FTTX** ⟶ MVNO with another operator?

(4.) Smart Multi-Tenant Buildings as a Service

- ⟶ Power Saving
- ⟶ Security
- ⟶ Partnering with Property developers
- ⟶ MVNO with another operator?
- ⟶ Millimetre wave length spectrum avoids expensive ducting and trenching.

BUSINESS MODEL FOR A FIXED OPERATOR IN 5G ERA

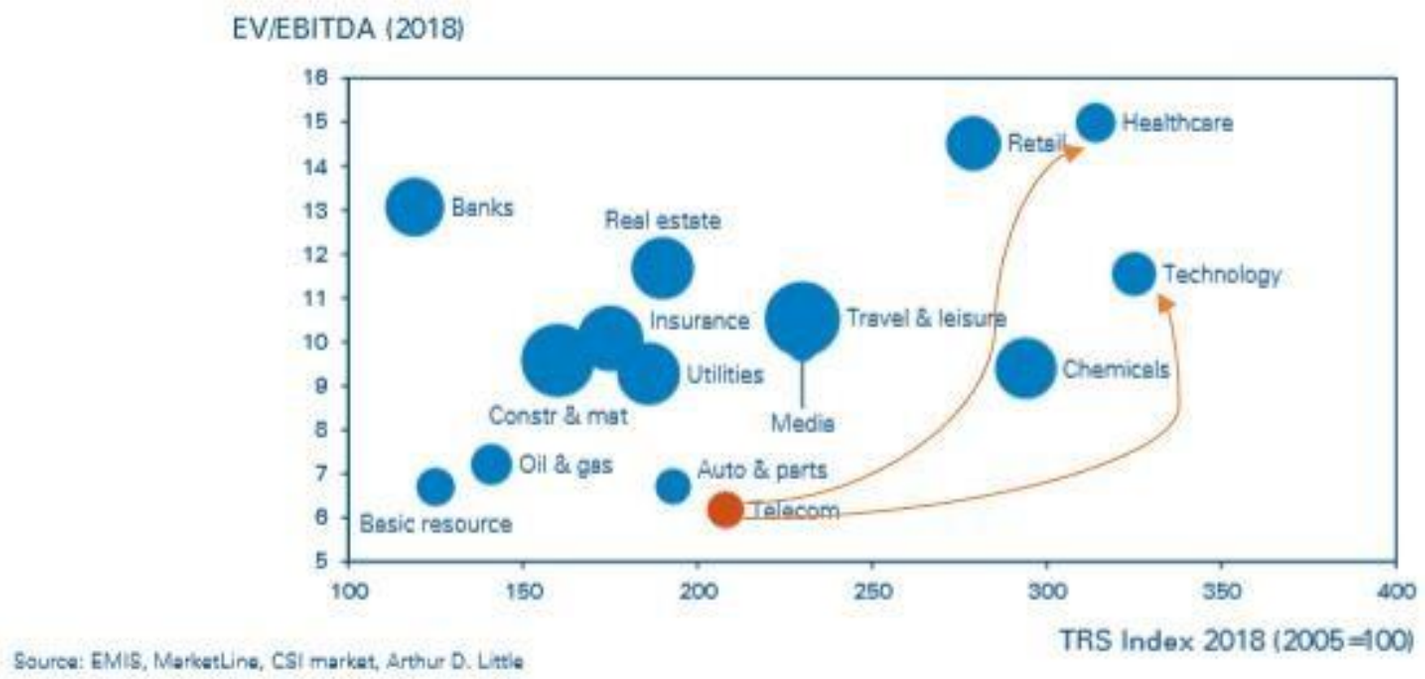


Co-creating 5G ready Services

Business Issues in Telecom landscape

- Share of “ecosystem market capitalization” of Telecom Operators had reduced from 37% (2007) to 24% (2016) compared to dramatic growth of Internet companies from 7% in 2007 to 24% in 2016. (Source: Thomson Reuters and Arthur D Little). Telecom Operator’s share of the industry profit pool had dropped from 58% in 2010 to 45% in 2018. (Source: World Economic Forum 2017).
- Pressure on traditional revenue streams such as Voice and SMS are high due to increasing adoption of internet Over-The-Top (OTT) services such as WhatsApp, Skype. As digital disruptors, OTT providers encroach the domains of Telecom operators.
- Incremental CAPEX for 4G to 5G is 1.7 times higher than 3G to 4G transition

- Enterprise Value / EBITDA is lower in Telcos compared to other industries like Healthcare, due to stagnant revenue and high OPEX, CAPEX resulted from growth in traffic volumes.
- According to MCCI world equity index (30th Sept 2019), returns from Telco stock is more than 10 times lower than Health and finance sectors. Therefore Telcos need to co-create next generation services in 5G era with the collaboration of start-ups in promising vertical industries like Health, Finance to increase valuation.
- Good Asian examples for co-creation are KDDI (Japan), NTT DoCoMo (Japan), SK Telecom (South Korea), SingTel (Singapore) and Axiata Group companies across South East Asia and South Asia.
- They create value through Open Innovation that utilize the capabilities of start-ups.



Source: EMIS, MarketLine, CSI market, Arthur D. Little

Make 5G investment viable through Collaboration -

“Often we just cannot develop new technologies in-house at the right speed with the right customer-centric and competitive mind set. That is why collaborating with start-ups are important, even for larger players like Deutsche Telekom”

(Axel Menneking, Managing Director of hub: raum Tech Incubator of Deutsche Telekom)

Weaknesses

- No quest for developing new and safeguard status quo
- Long innovation cycle
- Legacy Infrastructure stack
- ROIC < WACC

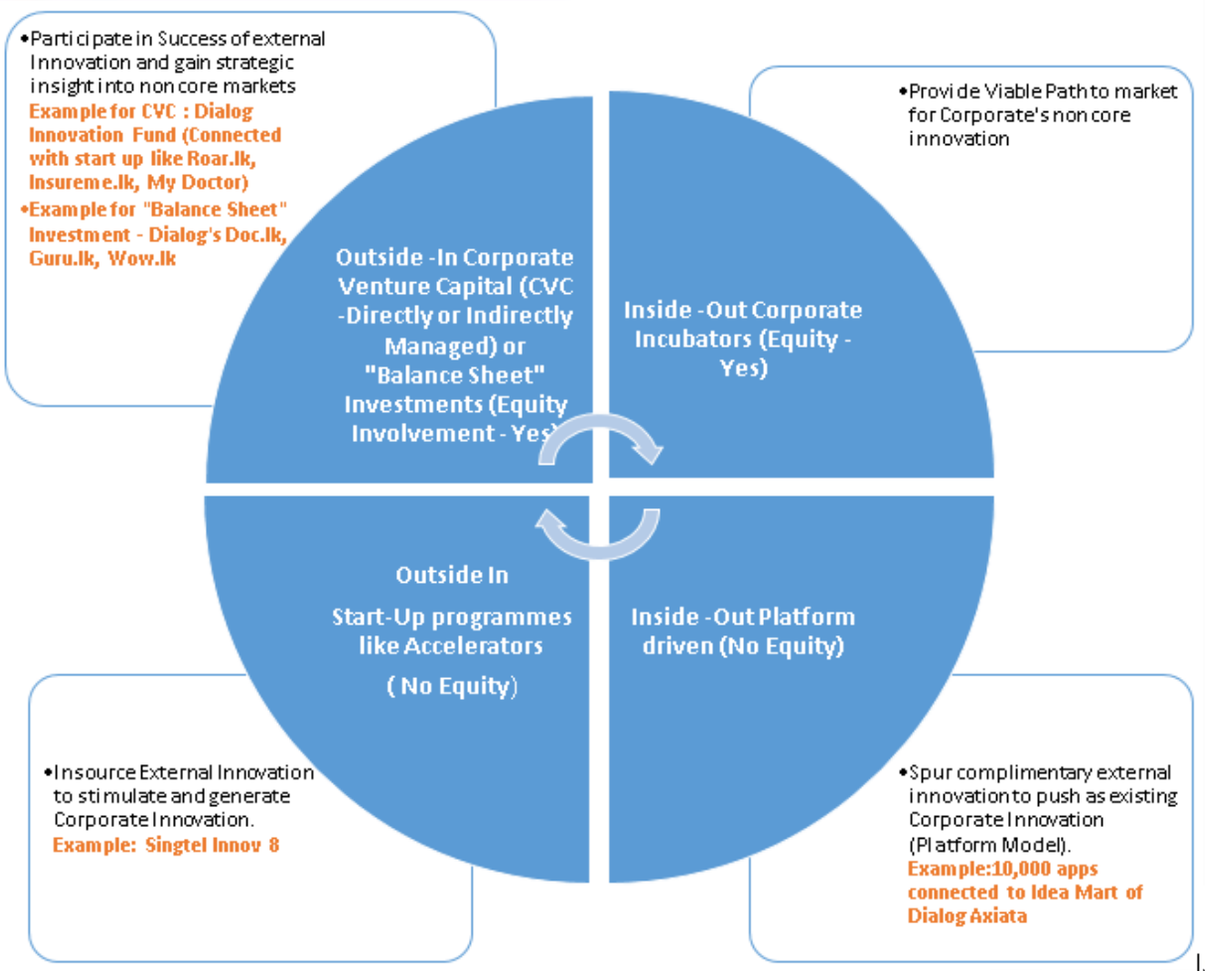
Strengths

- Subscriber Data, Billing are unique assets that can be levaraged by 3rd parties
- APIs of "network capabilities" as above can be released for 3rd parties to develop orchestarted apps
- Platform Ecosystem

Opportunities

- Digitalization
- Taking a slice of digital service providers and achieving at least 25% of telecom revenue through digital services

Different engagement models - Co-creating 5G ready services with Telcos and Startups

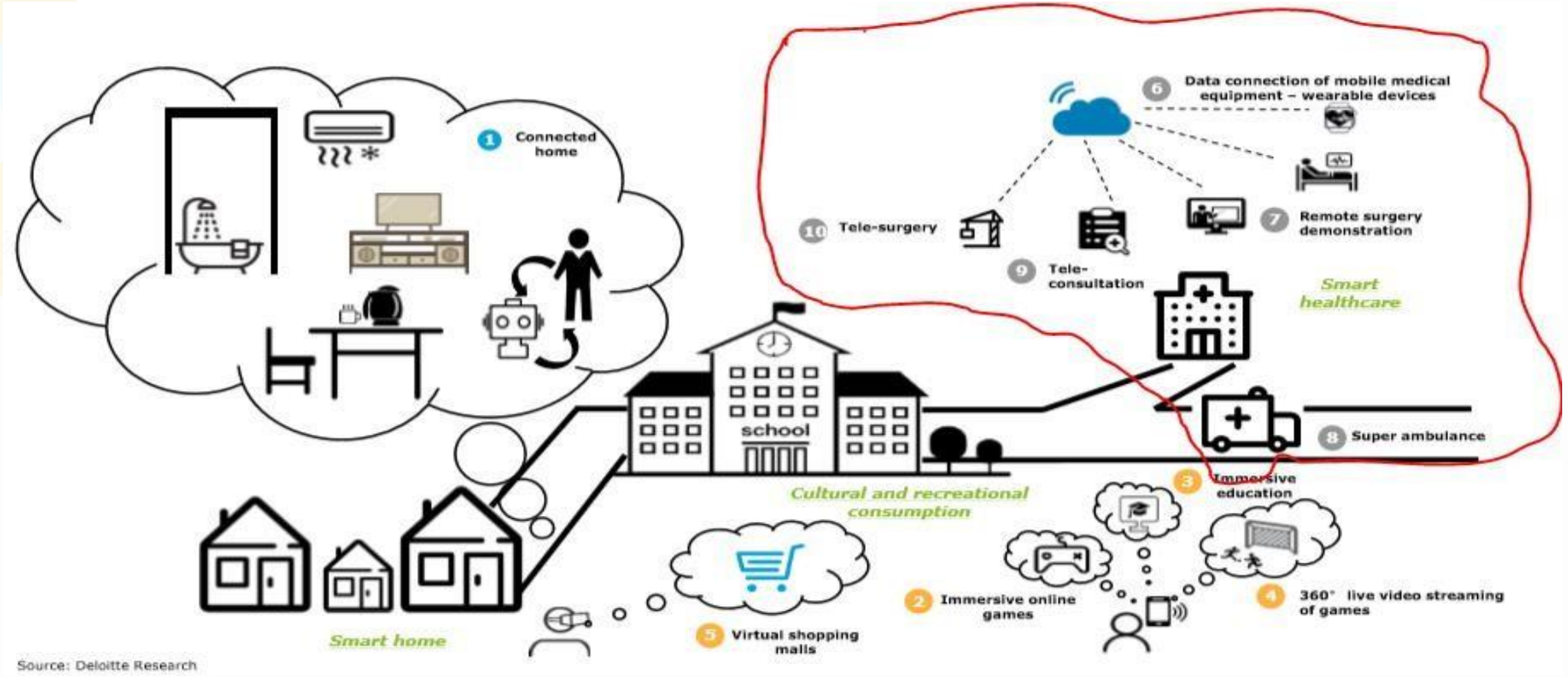


Promising 5G Use Cases

3GPP standard body had defined nearly 70 use cases under three broad categories of 5G, eMBB, URLLC, mMTC.

- $ 18 Billion for Fixed Wireless
- $64 Billion for manufacturing automation through IoT
- $9Billion for cloud gaming
- $7 Billion for autonomous vehicles
- $20Billion for surveillance / smart cities
- $4Billion for drones
- $32 Billion for remote healthcare services

5G Use Cases

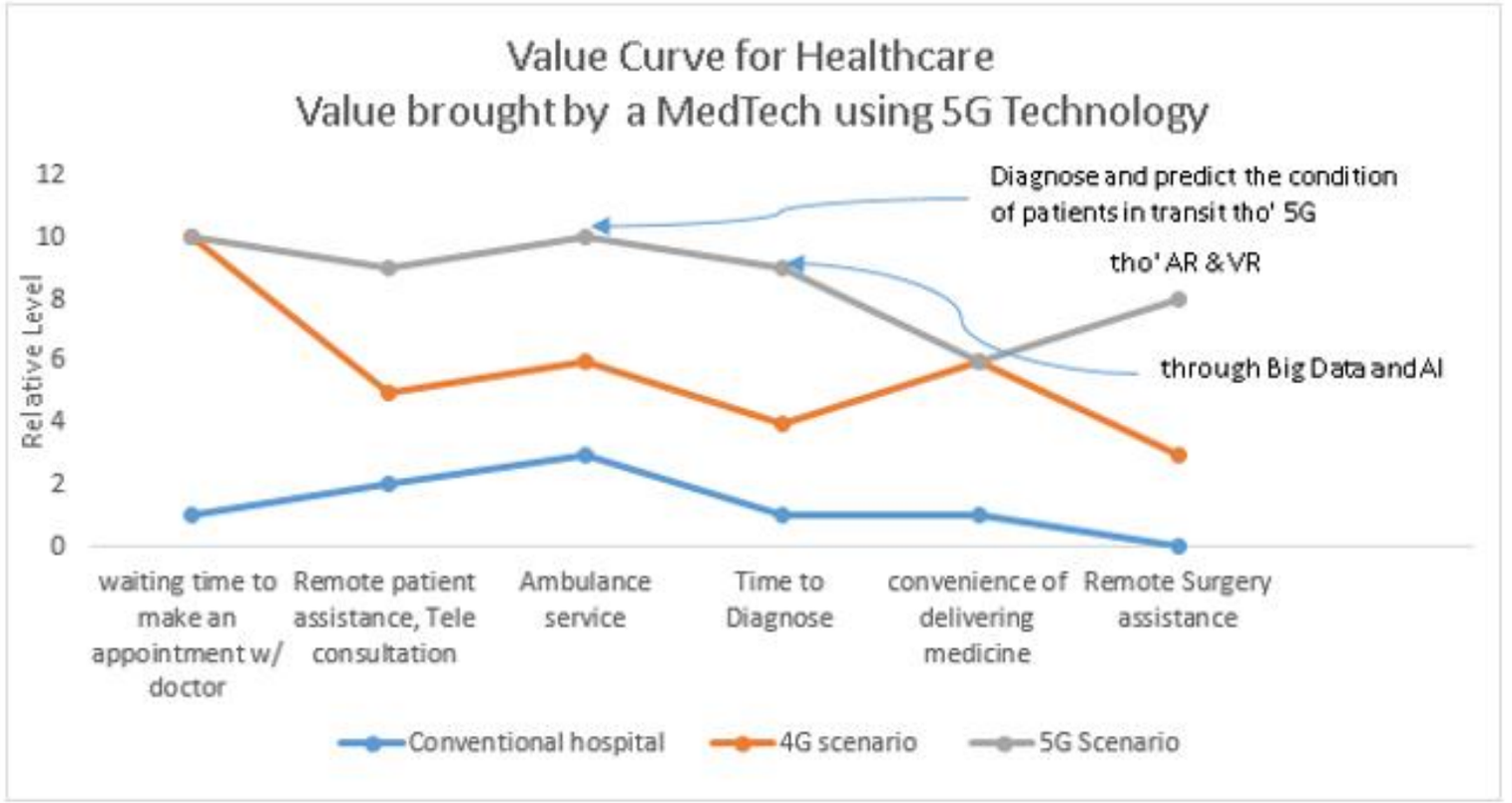

1 Connected home
6 Data connection of mobile medical equipment – wearable devices
10 Tele-surgery
7 Remote surgery demonstration
9 Tele-consultation
Smart healthcare
school
8 Super ambulance
Cultural and recreational consumption
3 Immersive education
2 Immersive online games
4 360° live video streaming of games
5 Virtual shopping malls
Smart home
Source: Deloitte Research

Where can 5G make a difference?

MedTech	EdTech Immersive Education
-Super Ambulance • Enhanced Mobile Broadband eMBB, Massive Machine Type Communication mMTC • Transmitting HD Video and data from intelligent medical devices helping doctors to diagnose and predict in advance **Super Ambulance can not be realized through 4G**	• Enhanced Mobile Broadband eMBB, Ultra Reliable Low Latency Communication uRLLC • Video transmission, AR and VR, Remote Interactivity • Personalization, Engagement, Interactivity **Difficult through 4G**
-Tele Consultation • Enhanced Mobile Broadband eMBB, Ultra Reliable Low Latency Communication uRLLC • Transmitting HD Video **Difficult though 4G**	

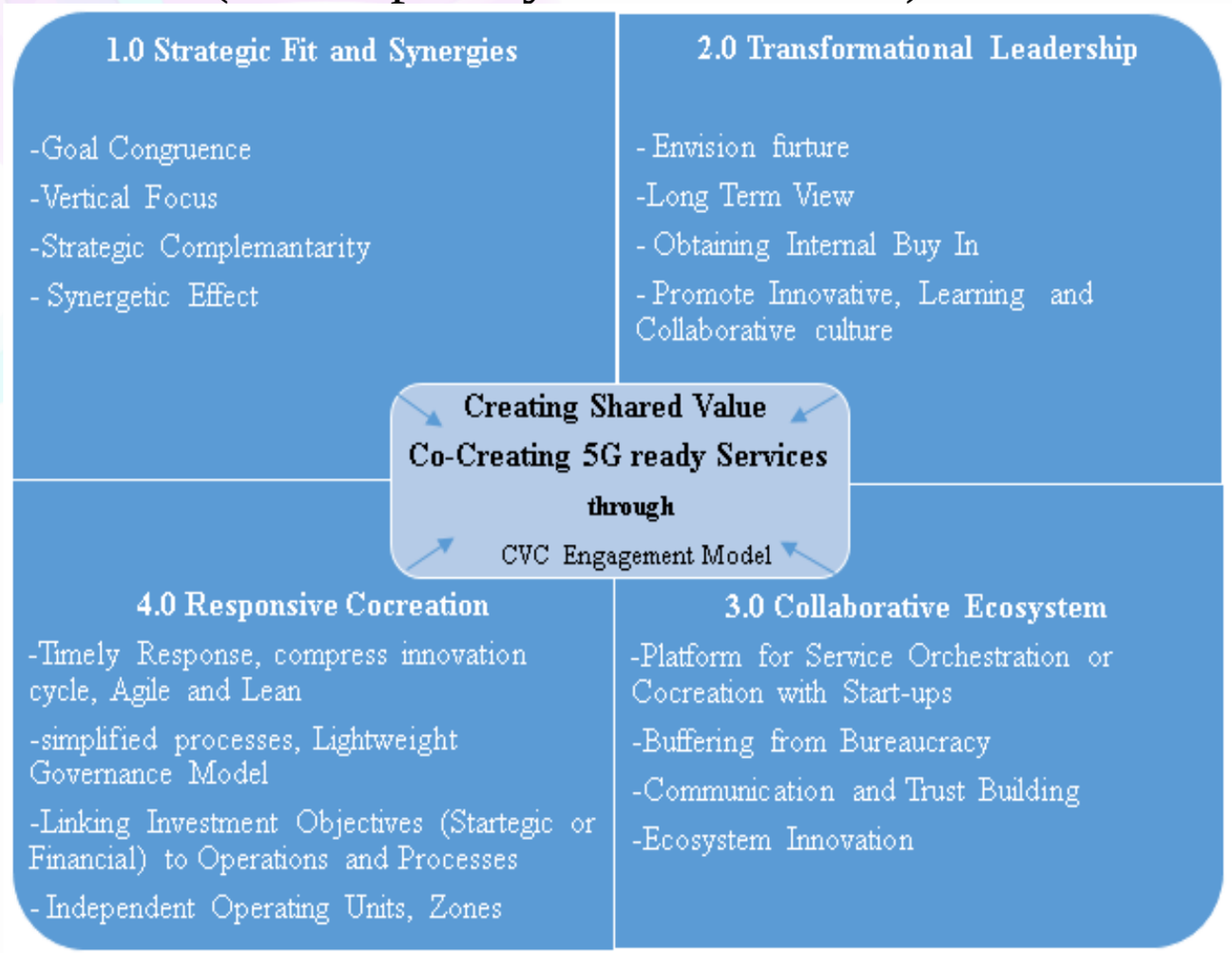
Value Curve enhancement in 5G for WeDoctor, China

MedTech similar to WeDoctor, China (developed by the researcher)



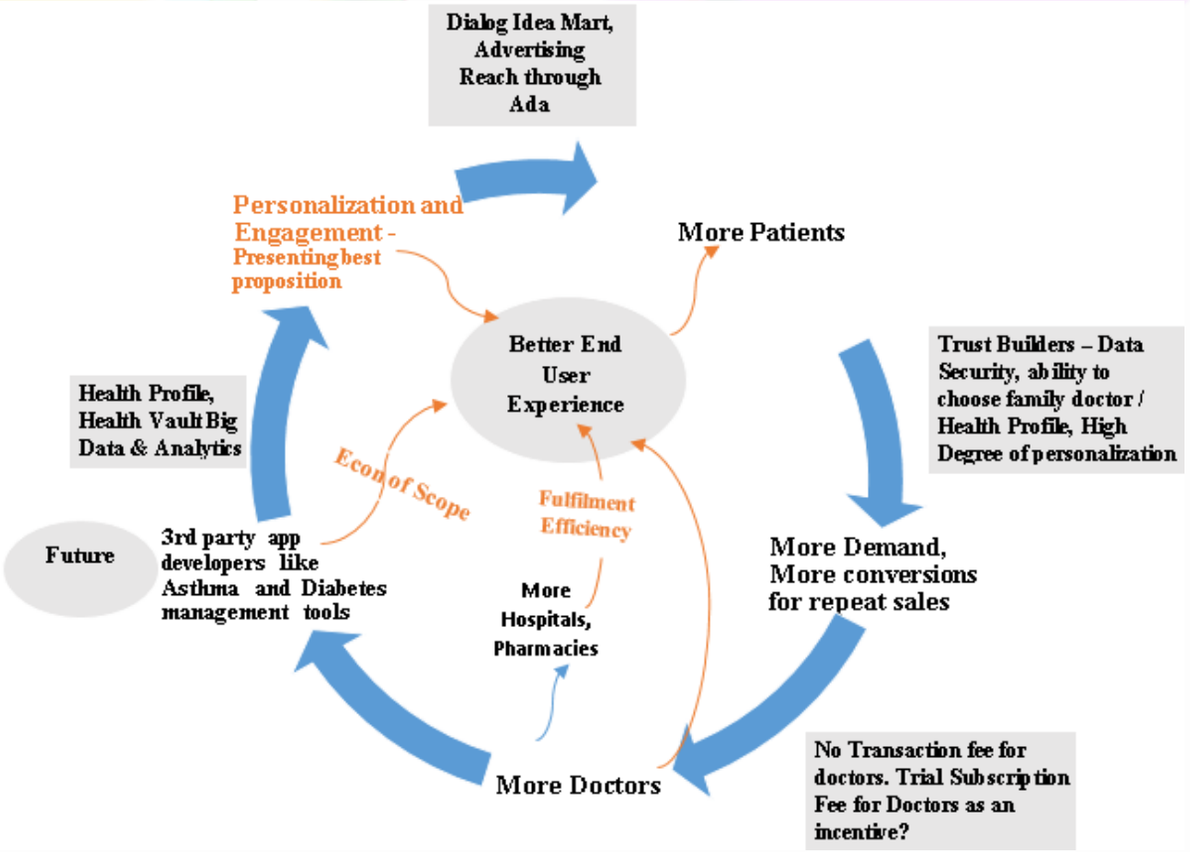
Co-Creation Model

(developed by the researcher)

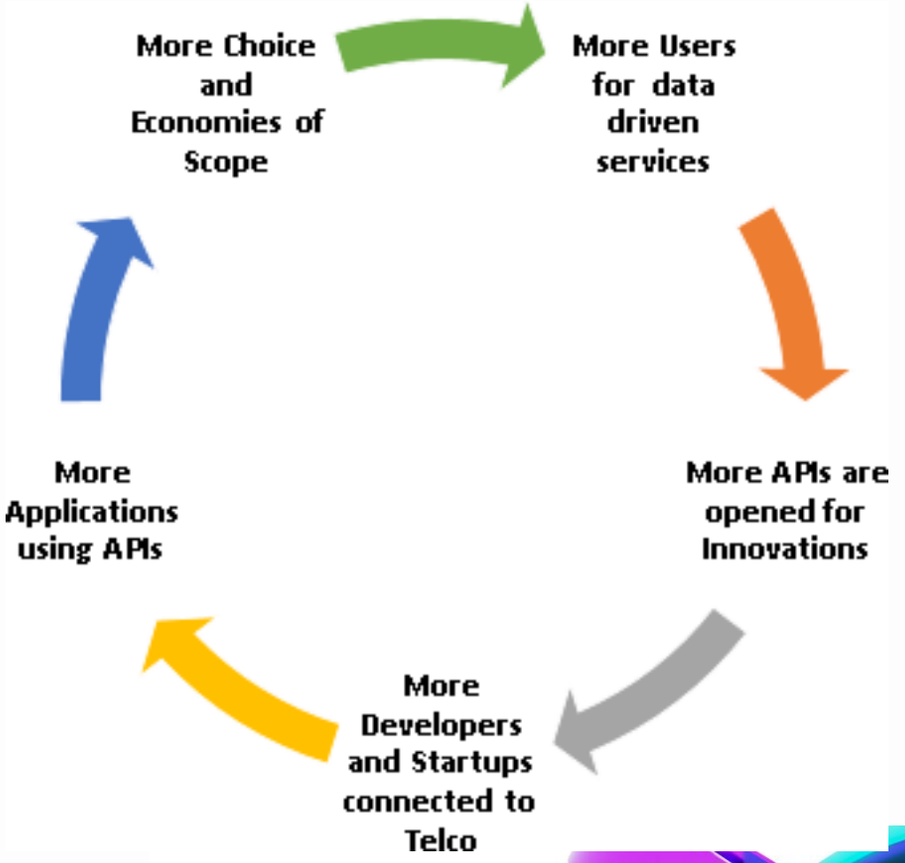


Domino effect of data, My Doctor and Dialog

Virtuous Cycle – Network Effect of merged MyDoctor platform

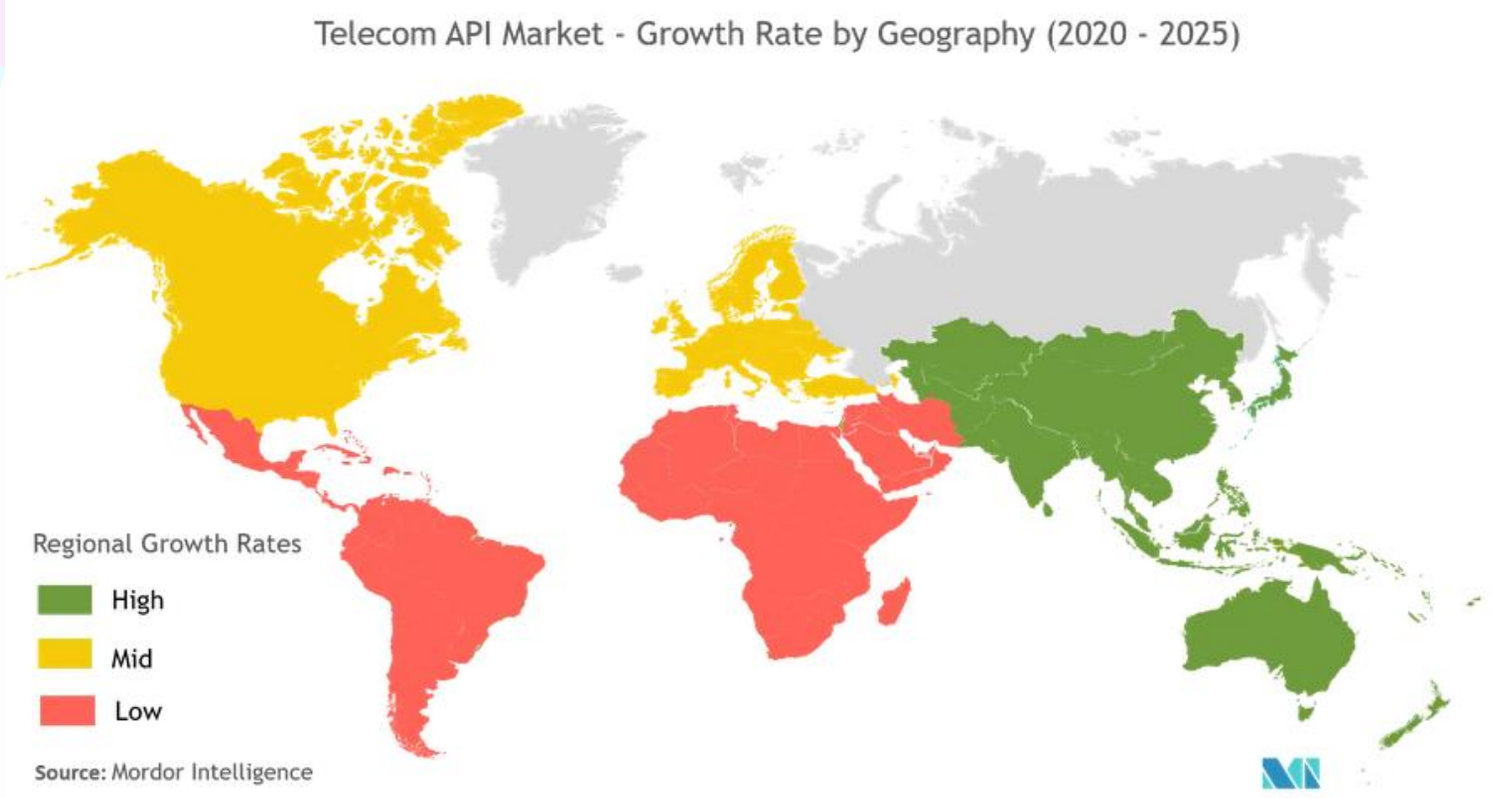


Virtuous Cycle and Multisided Network Effect created through Open APIs by Dialog

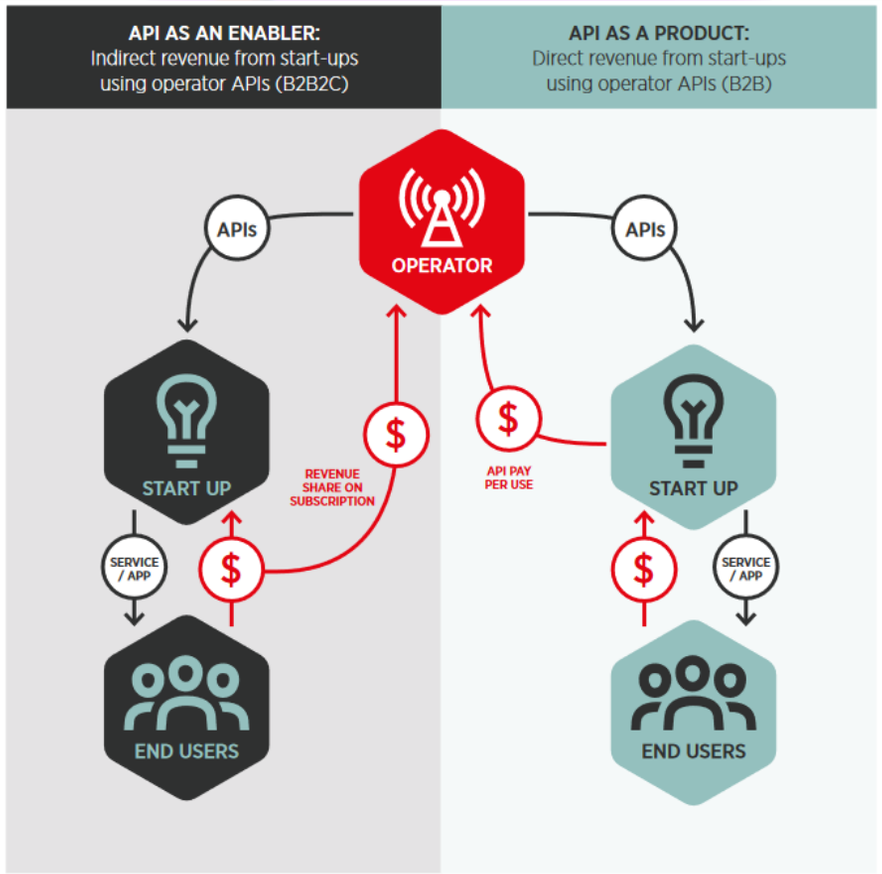


Telecom act as an Orchestrator and Mediator by releasing APIs

-During Covid pandemic Vonage (global Cloud Communication provider) had released APIs for its Vonage Video Conferencing / Collaboration Tool, primarily for the benefit of Telehealth and Online Education.
-Telcos can leverage 5G for IoT apps by acting as an orchestrator /mediator for IoT ecosystem
-Telecom API market will grow from $197B in 2020 to $514B in 2026. (Mordor Intelligence)



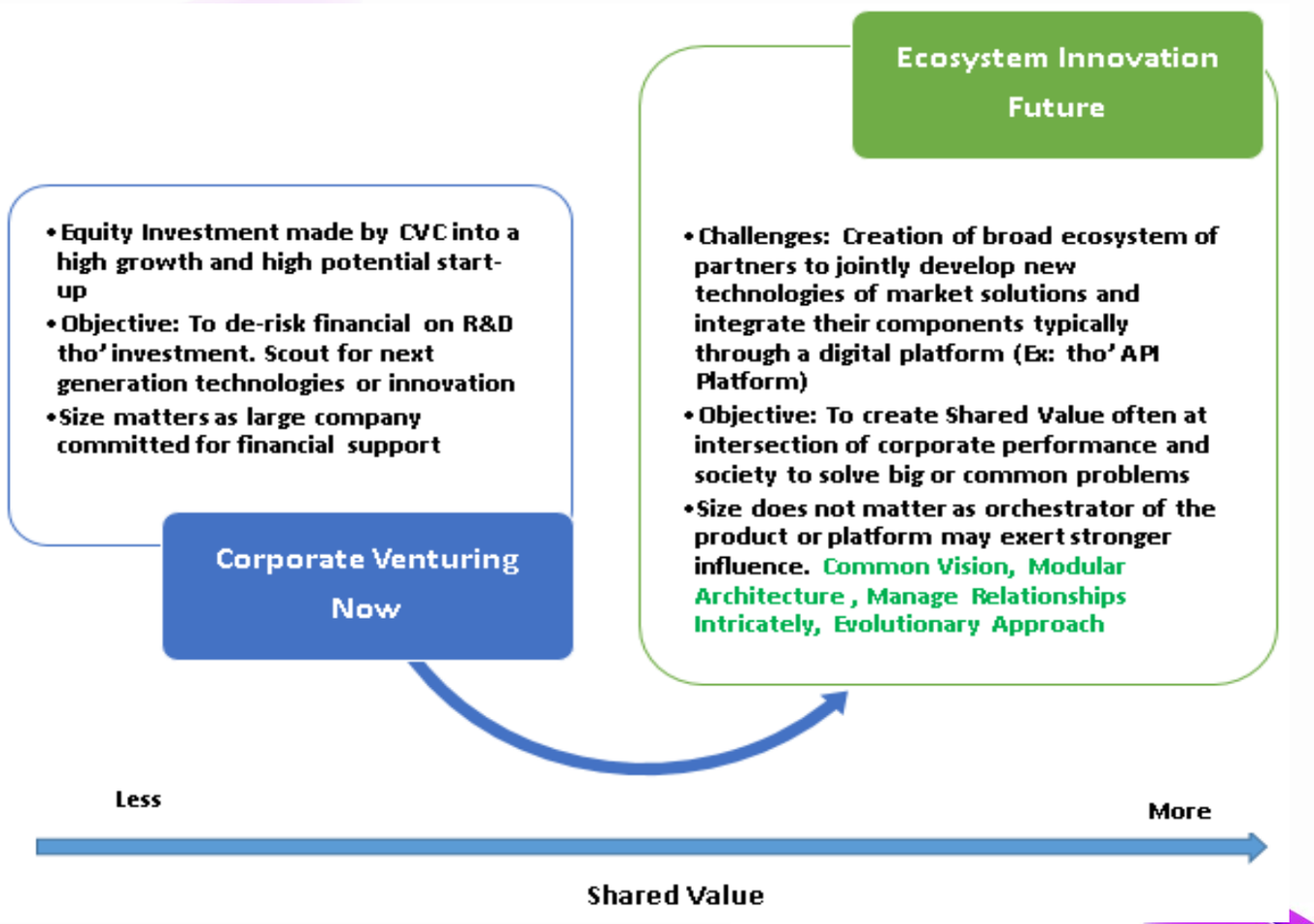
Operator API revenue stream models – Dialog Axiata (Sri Lanka)



Collaborative Ecosystem - Ecosystem Innovation

Examples of Ecosystem Innovation from Dialog Axiata Digital Innovation Fund

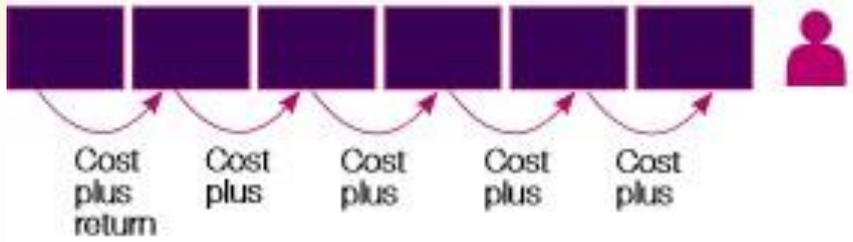
Partnership with Health Ministry and Samsung and MyDoctor to introduce remote consultation in 16 rural hospitals to handle COVID19 effectively.
- Digital Health Innovation Lab in partnership with Health Information Society of Sri Lanka, Dialog and MyDoctor to innovate future ready digital solution for health care industry. – Introducing Avidhrt (remote monitoring of heart condition. Dialog's connectivity + MyDoctor platform's capability to connect Doctors 24x7 + Device capability)



Value Creation in traditional markets tend to be linear; Value Creation in ecosystems tend to be networked and mutual

(Source – IBM)

Value creation in a traditional market or value chain



- Value creation is incremental as organizations cover costs plus some return on assets
- Value capture reflects an additive, sequential process of exchange

Value creation in an ecosystem

- Value capture reflects a networked, dynamic, everyone-to-everyone process of exchange
- Ecosystems produce more value as a whole, than the sum of the individual participants acting independently

Co-Creation and Ecosystem Innovation of 5G MedTech

NTT Docomo Japan, NEC, Wakayama Medical University and HKK Clinic

IOT ANALYTICS

Insights that empower you to understand IoT markets

System architecture of the field trial conducted by NEC and NTT DOCOMO in Japan for remote medical examinations.

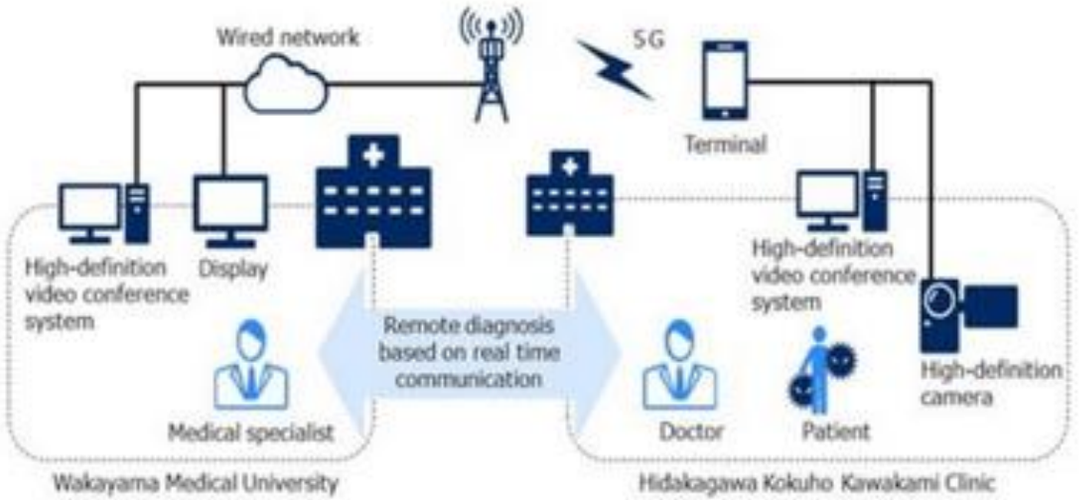


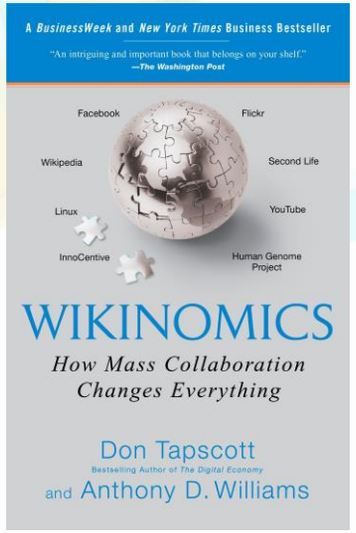
Image credit: NEC

Creating Shared Value

An emerging market MedTech is in a CVC arrangement with a Telco **(MyDoctor and Dialog Axiata)**

For MedTech	Telco Ecosystem Redefining the Productivity in Value Chain , Enabling Cluster Development	For Society Meeting Unmet Social Needs Freeing "Digital Poverty Trap"	For Dialog
• Through API integration, Ability to reach Dialog's 12 Million sub base, use "add bill" and eZCash, USSD/IVR of Dialog.	• Dialog launched "Digital Health Innovation" Laboratory in partnership with the HISS, Dialog and MyDoctor to innovate future ready / 5G enabled digital solutions for healthcare sector. • AvidHrt to monitor heart conditions of a patient remotely. Joint effort of Dialog, HISS, Health Innovation Center Faculty of Medicine, Bio Medical Research Lab of Fac. Of Eng and MyDoctor. – Benefit Rural Folk • MyDoctor partner with other VC start-ups	• Doctor on Call of MyDoctor without visiting a hospital during COVID • Virtual Advisory service for Rural Hospitals during COVID in collaboration w/ Samsung and Min of Health • Remote on line Consultation, "Doctor on Demand", e-Channeling and Pharm Delivery ease the life of rural folks and they are solutions to under supply of Doctors • 5G improves these services due to enablement of HD Video	• Utilization of Dialog API Platform Idea Mart increase with the high use of Billing and Payment such as eZCash and USSD/IVR (for health information dissemination) of Dialog. • Domino effect of Data

Old but still valid



"Web services to create platform for people to co-create their own services, communities and experiences……..In fact, 2006 was the year when programmable web eclipsed the static web; Flicker beat Web Shots; Wikipedia beat Brittanica, Blogger beat CNN; Google Map beat Map Quest; My Space, Facebook beat Friendster. The Difference?? The losers launched web sites, winners **launched vibrant communities.** The losers built walled gardens. The winners built **public squares;** the losers innovated internally. The winners **innovated with their users**. The losers jealously guarded their data and software interfaces. The winners **Share**."

Tapscott, Williams, 2008, 39

Thank You

mothilal@internetplusasia.com