

The logo for Keppel Capital, featuring the word "Keppel" in white on a grey rectangular background and the word "Capital" in red to its right. The background of the entire image shows three business professionals in a modern office setting, with a large red diagonal graphic element overlaid.

**Keppel Capital**

# Keppel Capital Virtual Corporate Day

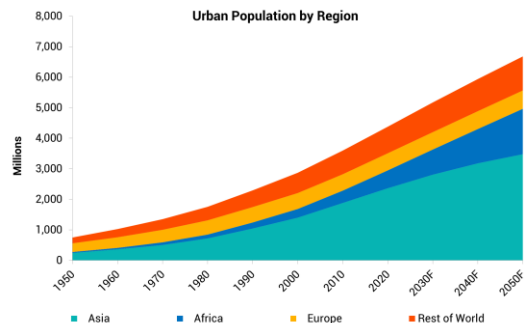
11 May 2021

# Navigating the Post-COVID World

# Focus on Fundamentals: Macro Trends do not Disappear with COVID-19

## Trend #1: Urbanisation

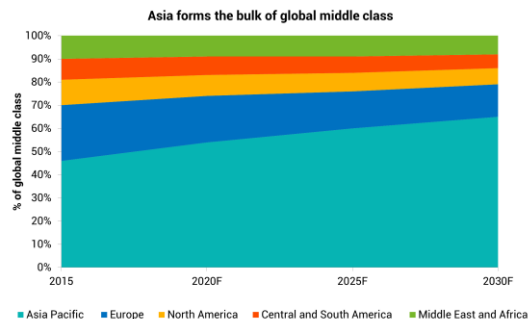
- Asia to drive global urbanisation as more move into cities
- Larger and denser cities
- More demand for housing and offices for economic activity



Source: UN World Urbanisation Prospects 2018 Revision, KepCap Research

## Trend #2: Growing Middle Class

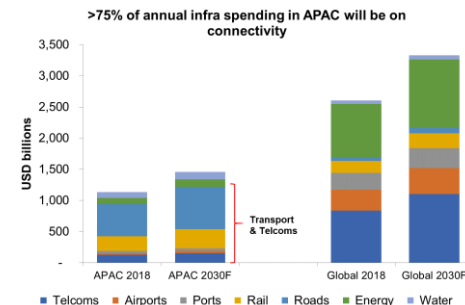
- Increased demand for goods and services
  - Higher domestic consumption
  - Larger tourist inflows
  - Silver economy: retiring better



Source: Brookings Institution, KepCap Research

## Trend #3: Connected cities

- Asia's cities will be more connected
- Increased infrastructural investments to boost flows of goods, capital, people and digital information
- Business activities will intensify at key gateway cities



Source: Global Infrastructure Hub, KepCap Research

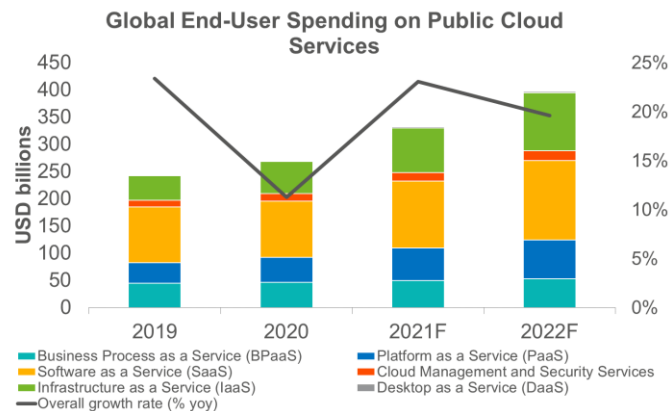
**Increased economic activity in cities generate demand for housing, commercial property, data centres and infrastructure**

# Post-COVID: What has Changed?

# COVID-19 Accelerated Digital Transformation Plans

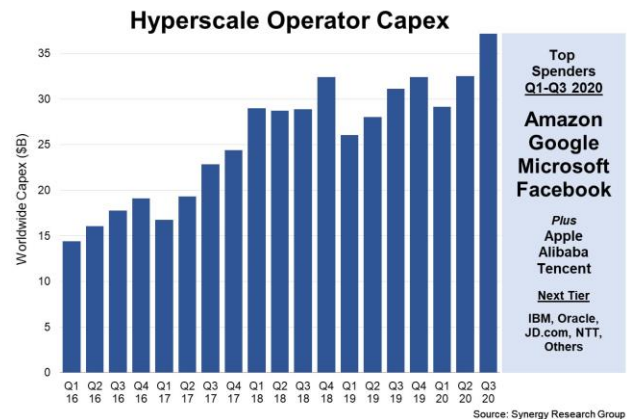
## Cloud spending keeps growing

- COVID-19 spurred the digital transformation of many corporates and governments
- End-user spending on public cloud services projected to grow at 17.8% CAGR between 2019 and 2022



## Hyperscalers ramping up capex

- Global hyperscalers continue to increase capex to meet growing demand
- Total hyperscale capex grew by 16% yoy in 9M2020 despite COVID-19 disruptions

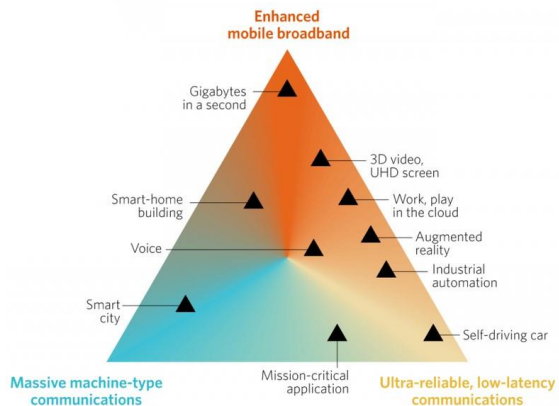


Continued growth in cloud computing underpins demand for hyperscale and colocation data centres

# New Opportunities from 5G and Edge Computing

## 5G spawns new opportunities

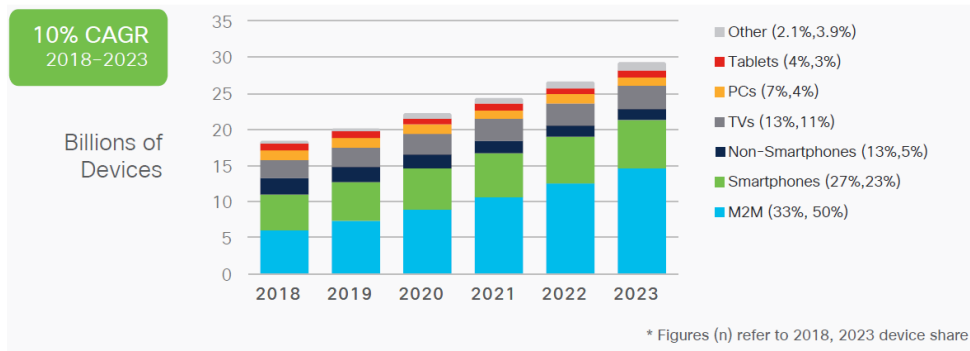
- 5G adoption spurs growth in new industries, e.g. autonomous vehicles, smart cities and telemedicine
- 5G value chain to drive USD3.8 trillion of economic output and support 22.8m jobs by 2035<sup>1</sup>



## Edge expands with more uses

- 5G is an enabler for the expansion of edge computing
- Growing number of connected devices, driven by Machine-to-Machine (M2M) connections


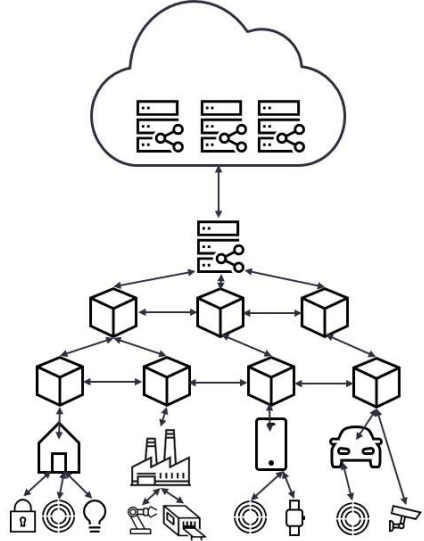








## Global device and connection growth



Source: CISCO Annual Internet Report (2018-2023)

Expanding edge computing facilitated by 5G use cases presents opportunities for new connectivity solutions

# The Edge is Part of the Cloud Continuum

Category	Types of compute resources	Sample architecture	Typical compute characteristics		
			Distance from data sources (km)	Latency (ms)	
Cloud	 National data centers		10+	10+	
	 Regional data centers (Core)				
	 Local data centers (Aggregation)				
Edge <small>3 types of edge</small>	<b>A</b>  Cell tower data centers (Access)			1 to 10	1 to 10
	<b>B</b>  On-premise data centers				
	<b>C</b>  Computers				
	 Networking equipment				
	 Controllers				
	 Sensors / devices				
			.001 to 1	.1 to 1	
			<.001	<.1	

Edge | Cloud

Note: Access, aggregation and core are terms used by open source group LF Edge to describe each edge layer  
 Source: IoT Analytics Research 2020

# Sustainability at the Core of Keppel Group's Strategy

## Sustainability as our business

- Seize opportunities in green developments, renewables, new energy and circular economy solutions



## High-impact sustainability goals

- Business targets for deployment of sustainable solutions
- Operational targets including carbon emissions, waste and water



## Focused portfolio

Guide our portfolio towards sustainable solutions through:

- Climate risk assessments
- Internal carbon pricing



## Governance & incentives

- Strengthen board oversight
- Include environmental sustainability in executive remuneration







Photo Credit: ST Press

# Keppel Bay Tower

- Singapore's first commercial development to be fully powered by renewable energy
- First commercial development to be certified BCA Green Mark Platinum (Zero Energy)
- High-tech green building:



Facial recognition for contactless entry



Water-efficient cooling tower water management



Intelligent building control



Demand control fresh air intake



Energy-efficient air distribution



Smart lighting

# Physical Offices are still Relevant

## Form and function of offices to evolve

- Increased focus on providing a safe work environment and physical and mental wellness of employees
- Smart office buildings with flexible and green designs could be more sought-after

## Office is not just a physical space

- Important for building corporate culture
- Create opportunities for bonding, ideation, innovation through physical meetings and interactions



# Closing the Gap in Social Infrastructure

## Chronic underinvestment in social infrastructure

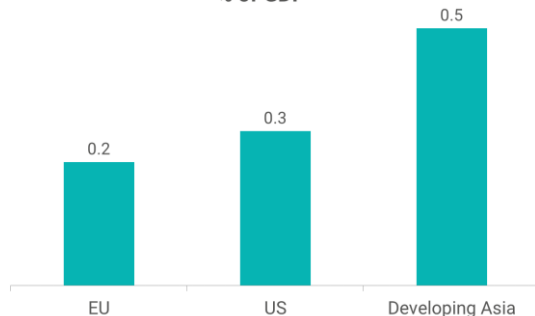
- COVID-19 highlighted the lack of adequate social infrastructure to combat health threats effectively
- Public investments have fallen over last decade due to austerity policies / limited tax revenue
- Developing Asia has a social infrastructure investment gap equivalent to 0.5% of GDP<sup>1</sup>



## Closing the gap through private investments

- Pandemic puts further stress on the healthcare capacity in developing Asian markets
- Private investors well-placed to fill the widening gap
- 90% of impact investors expect to maintain or increase allocation to education and healthcare sectors<sup>2</sup>
- Near-term priority will be on improving access to proper water and sanitation services

Social Infrastructure Investment Gap,  
% of GDP



Source: Global Infrastructure Hub

Hospital Beds per 1,000 People



Source: World Bank



# Increased Need for Quality and Sustainable Infrastructure

Urban cities of the future



Sustainable clean water sources



Smart and green offices



Accelerating digital transformation



Retiring gracefully



Quality education facilities



# Keppel Capital: 2021 & Beyond

# Harnessing Capabilities of the Keppel Group

## Strengths & Differentiators

1

Engineering track record

2

Project management

3

Efficiency in capital allocation

4

Focus on sustainability

5

End-to-end business model

## Focus Areas

### ENERGY & ENVIRONMENT



Keppel O&M •  
Keppel Infrastructure •  
Keppel Renewable Energy

### URBAN DEVELOPMENT



Keppel Land • Keppel Urban  
Solutions • Sino-Singapore  
Tianjin Eco-City

### CONNECTIVITY



Keppel Data Centres • M1 •  
Keppel Logistics



### ASSET MANAGEMENT

Keppel Capital • Eco-system of private funds and listed REITs & Trust



# An Integrated Fund Management Platform

## Listed REITs & Trust<sup>1</sup>

**Keppel REIT**



One of the largest Pan-Asian commercial REITs with premium Grade A assets in prime business and financial districts

**Keppel DC REIT**



First pure-play data centre REIT listed in Asia on the Singapore Exchange

**KIT** KEPPEL INFRASTRUCTURE TRUST



The largest diversified Business Trust with a portfolio of strategic infrastructure assets

**Keppel Pacific Oak US REIT**



US REIT with offices and business campuses in key growth markets driven by innovation and technology

**PRIME US REIT**



US REIT with Grade A office assets in key primary markets

Established fund manager offering investors quality investment products

## Private Funds

**Keppel Capital Alternative Asset**



Private equity manager focusing on alternative asset classes, including senior living, education, infrastructure, and private credit funds

**alpha**



Private equity fund manager with investments across key global gateway cities

**Keppel Capital**

1. Keppel Capital owns 50% of Keppel DC REIT Management Pte. Ltd. (Manager of Keppel DC REIT), 50% of Keppel Pacific Oak US REIT Management Pte. Ltd. (Manager of Keppel Pacific Oak US REIT), and 30% interest in KBS US Prime Property Management Pte. Ltd. (Manager of Prime US REIT).

# Thank You

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