5G Symposium: Hidden Concerns of a 5G SmartCity

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About Myself

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- Honorary Legal Advisor of Smart City Consortium

- Founding Chairman of eBRAM International Online Dispute Resolution Centre

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What is a "SmartCity"

- Not defined by civil engineering projects

- **Focus on Digital Infrastructure**

My Top 6 Immediate Concerns

1. Widening the digital divide

2. Unhealthy Competition

3. Biased/Unethical use of AI

4. Cybersecurity

5. Loss of Data Privacy

6. Limitations with Existing Legislation

1st Concern: Widening the digital divide

- Create wealth gap

- leaving behind minority and underprivileged communities.

Solutions: General Education

- **Support Minorities and Underprivileged Groups**
- STEM education

- E-learning

- Telehealth
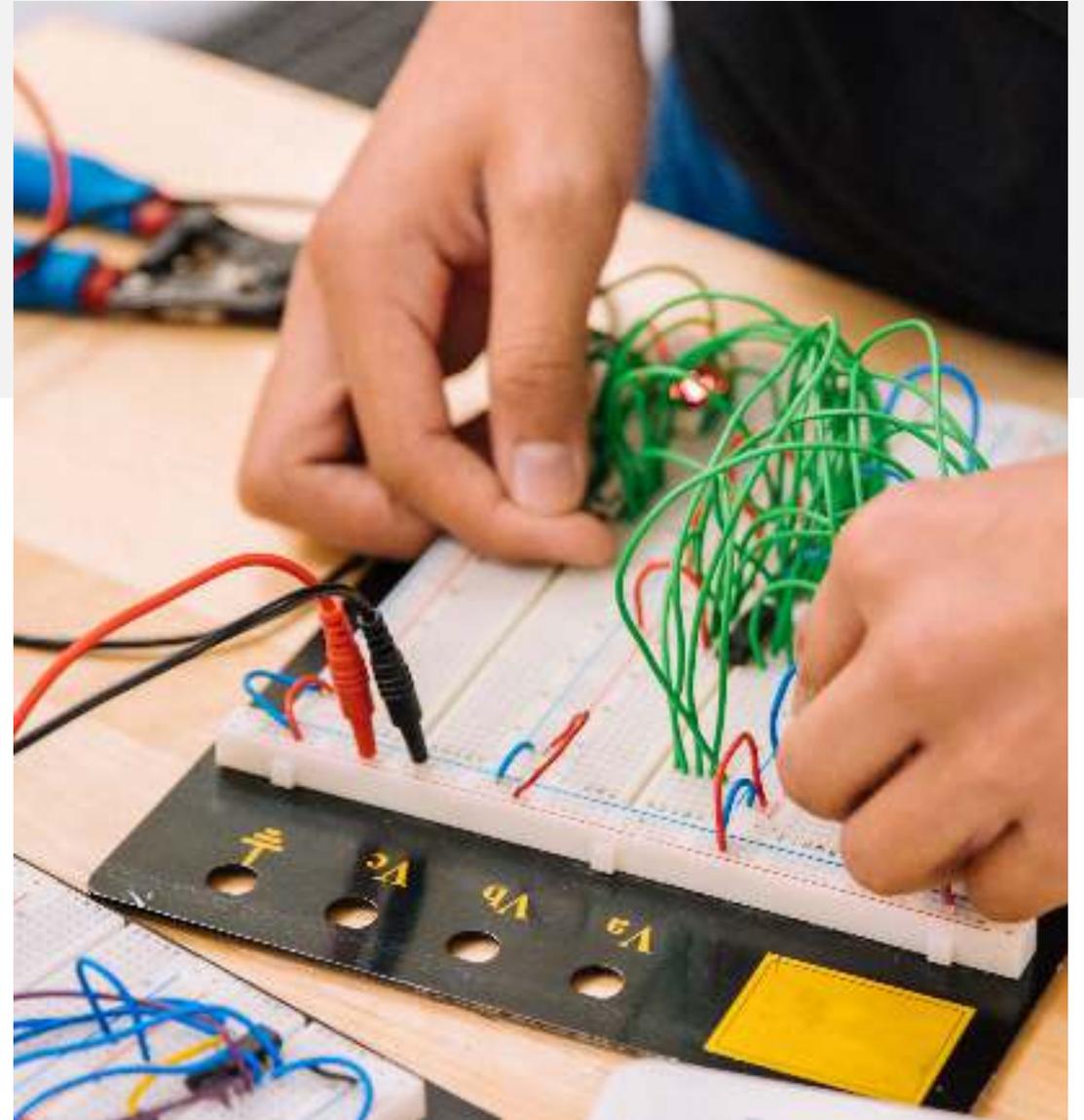
Solutions: Develop Technological Infrastructure

- **Encourage Tech Uptake**
- Build 5G base stations → "New Last Mile issue"

- Industries should help different enterprises, like SMEs

→LEI

→LawTech, ODR to resolve disputes

China

- **14ᵗʰ Five Year Plan (Ch.11, S1 and Ch.15, S2)**

- Expand scope of 5G Network

→Increase 5G users by 56%

→Allow for the building of smart cities, e.g. Luoyang, Wuhan

- Expand practical applications of 5G

→ Autonomous vehicles, smart manufacturing, smart healthcare, etc.

- Establish foundation for future implementation of 6G

→ Create new access for international telecommunications

Solutions: Promote Widespread Adoption of 5G

- Public/Private sector collaboration

- Allocate scarce/critical resources for deploying 5G and reduce roll-out costs
→ Avoid 5G driven digital divide

Solutions: Promote Widespread Adoption of 5G

Create	Long-term 5G implementation strategy
Invest on	Nationwide 5G network development
Allow	Smart manufacturing, autonomous vehicles, digital healthcare, etc.

Solutions: Financial/Infrastructure support from Government

Regionalize	5G
Enable	5G to be enjoyed in rural areas
Enable	Non-urban communities/businesses to participate in the digital economy
Foster	Industrial growth, management of natural disasters and resources
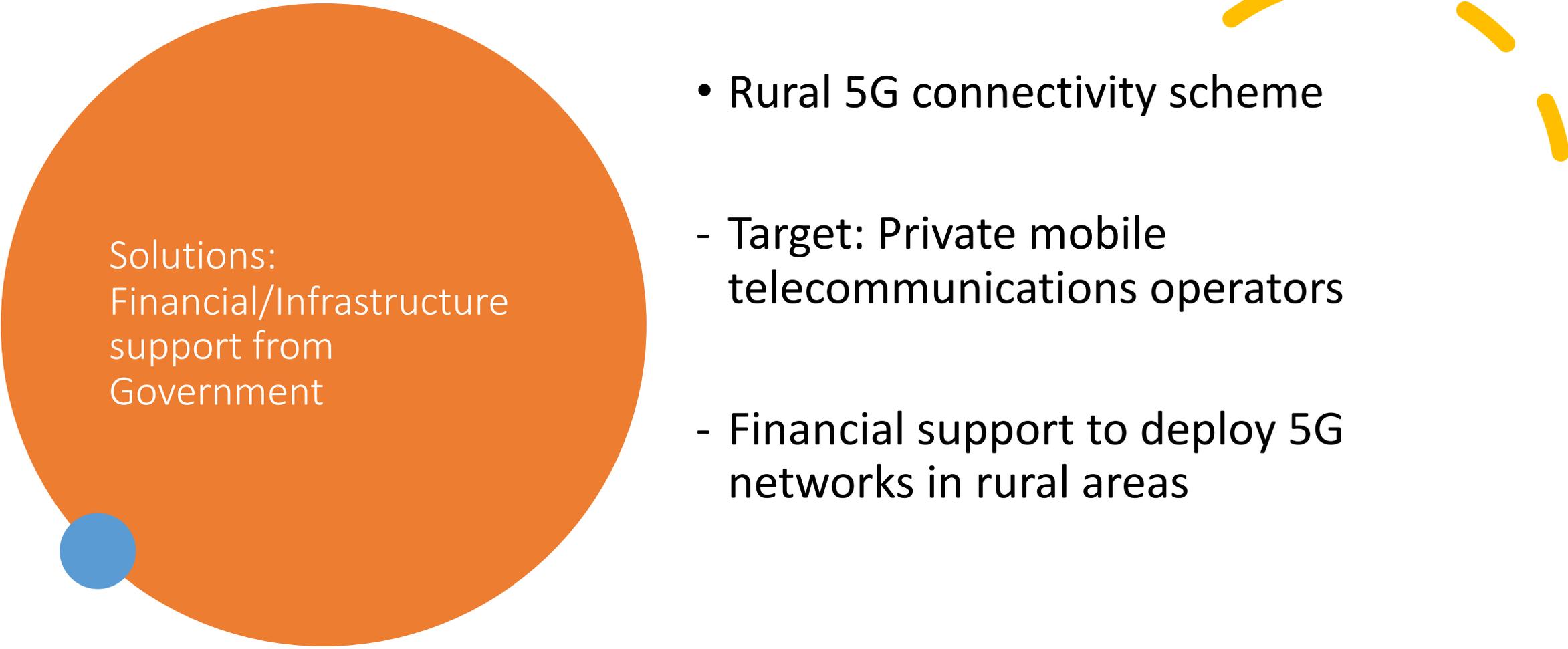
Solutions: Financial/Infrastructure support from Government

- Rural 5G connectivity scheme

- Target: Private mobile telecommunications operators

- Financial support to deploy 5G networks in rural areas

2nd Concern: Unhealthy Competition

- Too focused on short term financial gain

- Influenced by geopolitical issues

- Ultimately hurt consumers and the environment

Solutions: Foster Fair Trade

Encourage
- Healthy Competition

Build
- Career neutral 5G base stations and installations

Provide
- Cost effective 5G services to customers.

Consider
- Enabling 5G licensing/trading and set review standards

Support
- Compatibility and portability

Reduce
- Risk of government driven trade oppression/ illegal sanctions

Solutions: Improved Monitoring with 5G

- **Environmental Protection**

- Improve an organization's capacity with connected sensors

→Fulfil whole-of-organization monitoring of energy consumption and waste management

- Real-time detection

→Effective monitoring of energy/emissions efficiency.

→Create cities that are more productive, less wasteful and have a high QoL
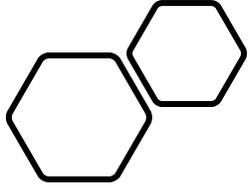
Solutions: IoT Integration

- **5G Integration with Internet of Things (IoT)**

- Energy Efficient

- Real-time monitoring of energy consumption for better optimization

Examples: Appliance sensors, streetlights, transportation
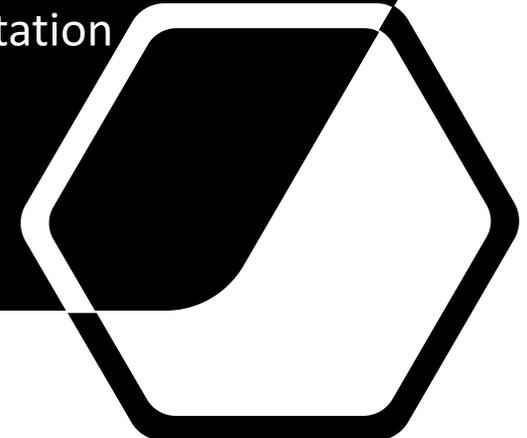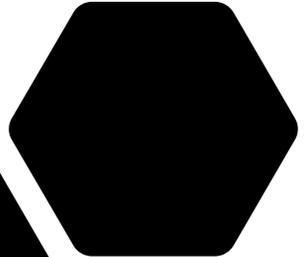
3rd Concern: Biased/Unethical use of AI

AI profiling →
Discrimination

Unethical surveillance practices

Solution: Legal Regulation

- **Refine relevant legislation to prevent such issues**

- Community discussion/consultation

- Self-regulation → laws/treaties

- Education

4th Concern: Cybersecurity

- Increased cybercrime over 5G

- New technologies → Deepfakes
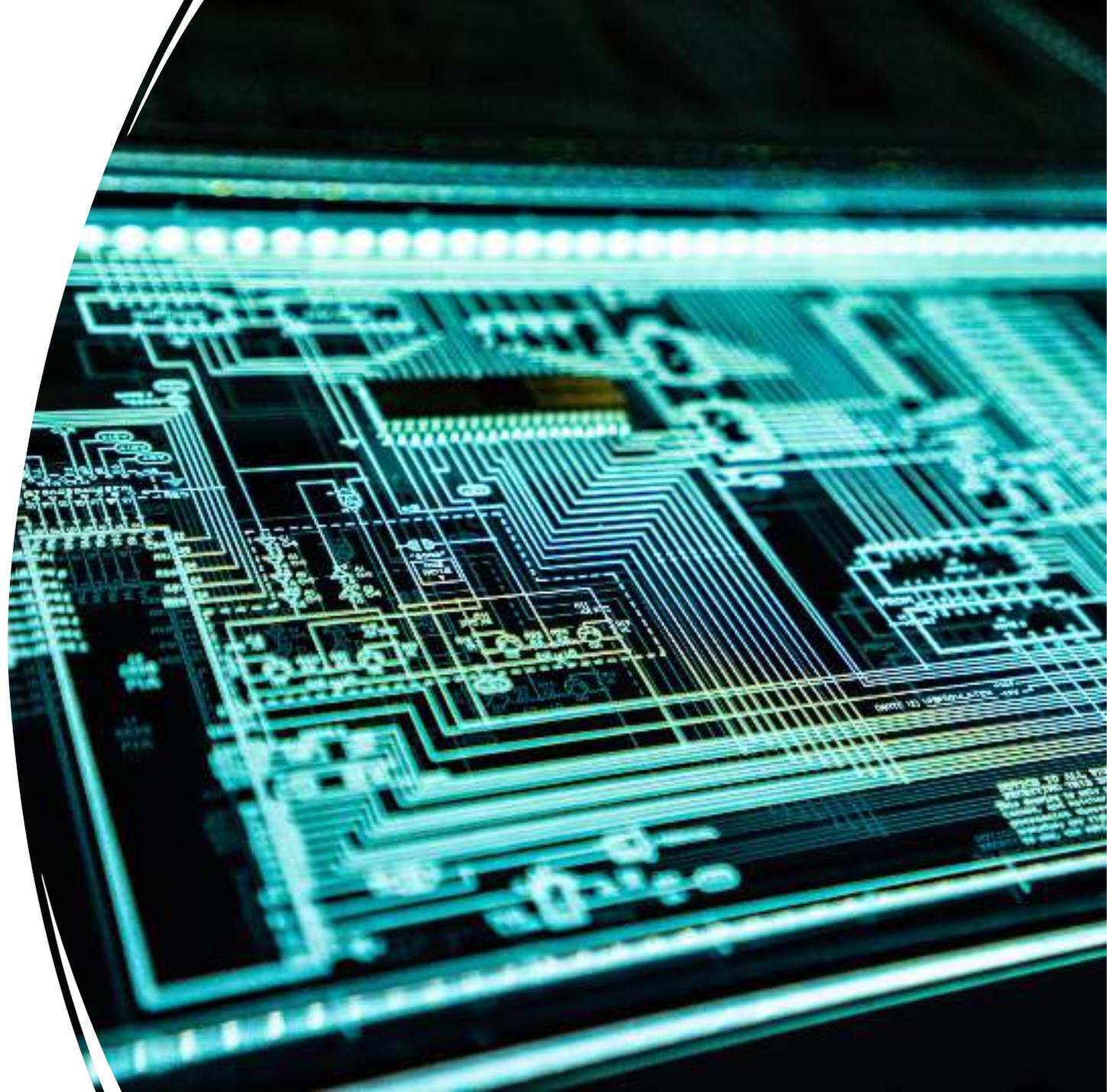
What are Deepfakes

AI specialized in creating convincing images, audio and video hoaxes

Employs a person's behavior to create entirely new content

Virtually indistinguishable from authentic content

Example: Dancing Queen Elizabeth, Tom Cruise as President

Advantages of Deepfakes

- **Improve Quality of Life (QoL)**

- Virtual influencers

- Digital assistants

- Medical diagnosis and treatment

→ Develop new treatments without requiring actual patient data

Dangers of Deepfakes

- **Cybercrimes**

- Criminals more proficient in developing deepfakes

→ low costs and skill required nowadays

- Audio deepfakes could be used to scam firms/companies

Dangers of Deepfakes

- **Non-Consensual Pornography**

- Most online deepfakes are pornographic

- **Fake News**

- Project disinformation to manipulate public opinion

- Political manipulation

How 5G relates to Deepfakes

Rapid development of 5G bandwidth

Increased Computing power of the cloud

Real-time manipulation of video stream

→ Videoconferencing, Livestreams, etc.

Solution: Increase Security Awareness

01
Develop new legislation/technologies

02
Pass omnibus law against cybercrime

03
Utilize 5G to speed up development of deepfake recognition software

5th Concern: Loss of Data Privacy

- Fears of Personal data being infringed upon

→ Smart lamp posts

Solutions: Protect Data Privacy by Design

- **Respect Individual's data sovereignty**

- Lawful 'data' exchanges

- Federated Learning Initiatives

- Business opportunities arising out of data privacy concerns?

- **Software Protection by 5G Providers**

- Collaborate with cybersecurity firms

→ Develop encryption solutions, network monitoring, etc.

→ Develop Anti-virus solutions

→ Develop VPNs
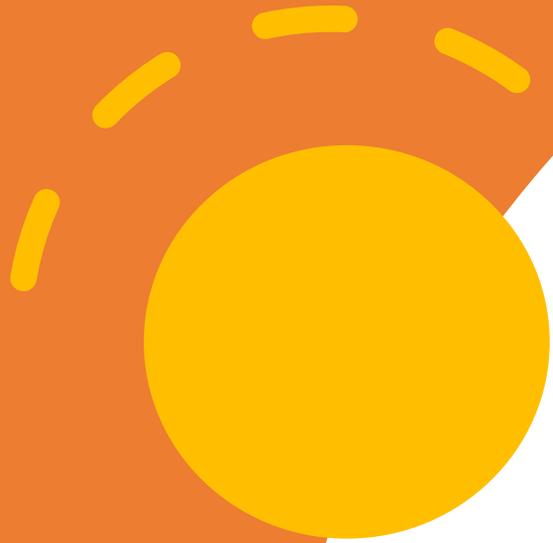
6th Concern: Can't Keep Pace with Technology

Limitations with Existing Legislation

Solutions: Refine Existing Legislation

Update Current Laws

Copyright laws

HK: Copyright Ordinance (Cap. 528)

Mainland: Copyright Law, Tort Liability Law

Patent laws

HK: Patent Ordinance (Cap. 514)

Mainland: Patent Law

Data privacy laws

HK: Personal Data (Privacy) Ordinance

Mainland: Personal Information Protection Law (PIPL)

Solutions: Develop New Legislation

- **Develop Cybercrime laws**

- HK: Anti-money Laundering and Counter-Terrorist Financing (Amendment) Bill

- **Relax Potential Regulations**

- Facilitate 5G development

→Autonomous vehicles

→Drones

→Virtual entertainment

- 5G Application on Autonomous Vehicles:

- Faster data Analysis

- Interconnected communications between autonomous vehicles

- Self-regulation on travelling speeds

- Self-Parking

- Intuitively calculate potential public transportation locations

→ Facilitate transfers with public transport
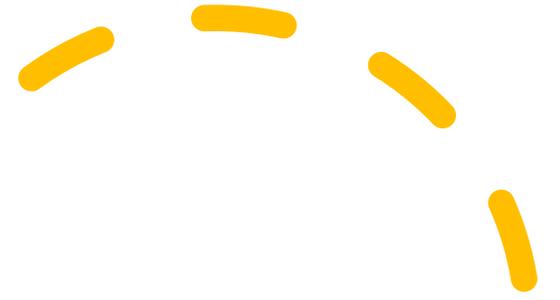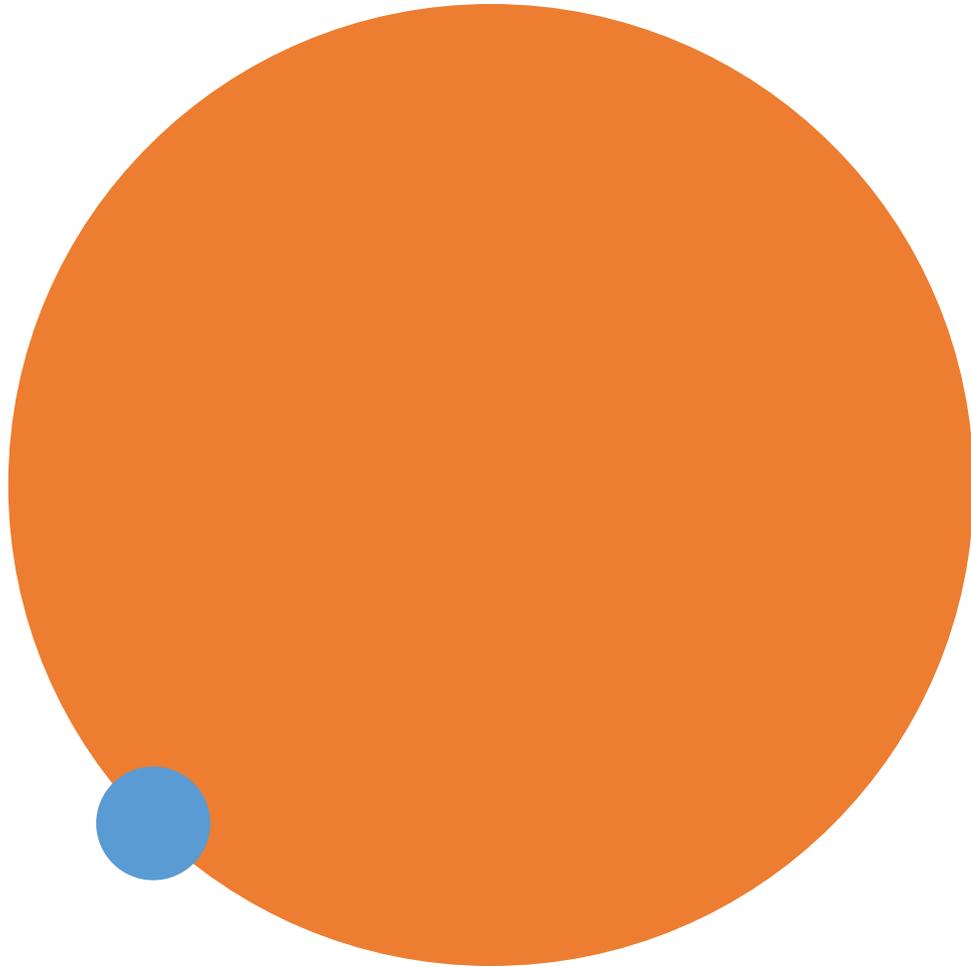
- **Future:**
- Initiate new policies to support autonomous driving

→Smart City Blueprint 2.0 (2020)

→Smart Mobility Roadmap (2019)

- Refine existing regulations/policies

→Guidance Notes on the Trials of Autonomous Vehicles

→'Movement Permit' scheme

Q&A

Thank You