Value network configurations (VNCs) for urban small cell connectivity…

	International cloud provider-driven VNC	Joint MNO-driven VNC	Neutral Connectivity Operator-driven VNC
Resources of VNC driver			
Small cell spectrum	Unlicensed, e.g. 60 GHz	MNO's 26 GHz nationwide	MNO's 26 GHz nationwide + city's 26 GHz local
Fiber and power networks	Data center transit/peering	BS backhaul	BS backhaul + city fiber
Technical competence	Advanced in IEEE	Advanced in 3GPP	Advanced in 3GPP
Broadband service			
MAN-WAN access	Consumer switching	Roaming	5G slicing
MAN competition	Monopoly	Monopoly	Service-based
Public/private network provider	Public	Public	Public and private
Application hosting			
City hosting location	Cloud provider's data center	MNOs' data center	The city uses MNOs' data center
Edge hosting competition	Cloud provider's monopoly	MNOs' monopoly	MNOs' monopoly
Sensor data collection			
Sensor ownership and data mgmt.	Cloud provider	MNOs	The city owns / MNOs manage
Sensor data commercial availability	Cloud provider control	MNO control	City control

… and data commerce

	International cloud provider-driven VNC	Joint MNO-driven VNC	Neutral Data Operator-driven VNC
Enabling resources of VNC driver			
Data hosting capacity	High	Medium	Medium
Categories of managed data	Personal, App usage, etc.	Mobile service	Municipal + Mobile
Service dev. and data analytics competence	High	Medium	Medium
VNC data trading outcomes			
Ability to attract stakeholder data for trading	Low	Medium	High (neutral infrastructure)
Willingness to use managed data for trading	Low	High	High
Achieved volume of data trading	Low	Medium	High
VNC data-based application outcomes			
Ability to attract stakeholder data for apps	Low	Medium	High (neutral infrastructure)
Willingness to use managed data for apps	High	High	High
Enabled data-based apps	More cloud provider apps	Improvement of existing apps	New stakeholder apps

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