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Smart sustainable cities maturity model

-- Digital transformation for cities and communities

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- Editor of ITU-T Recommendation ITU-T Y.4904 Smart sustainable cities maturity model
- Committee member of ISO/IEC JTC1/WG11
- Committee member of IEC SyC on smart cities
- Committee member of China national smart city standardization group

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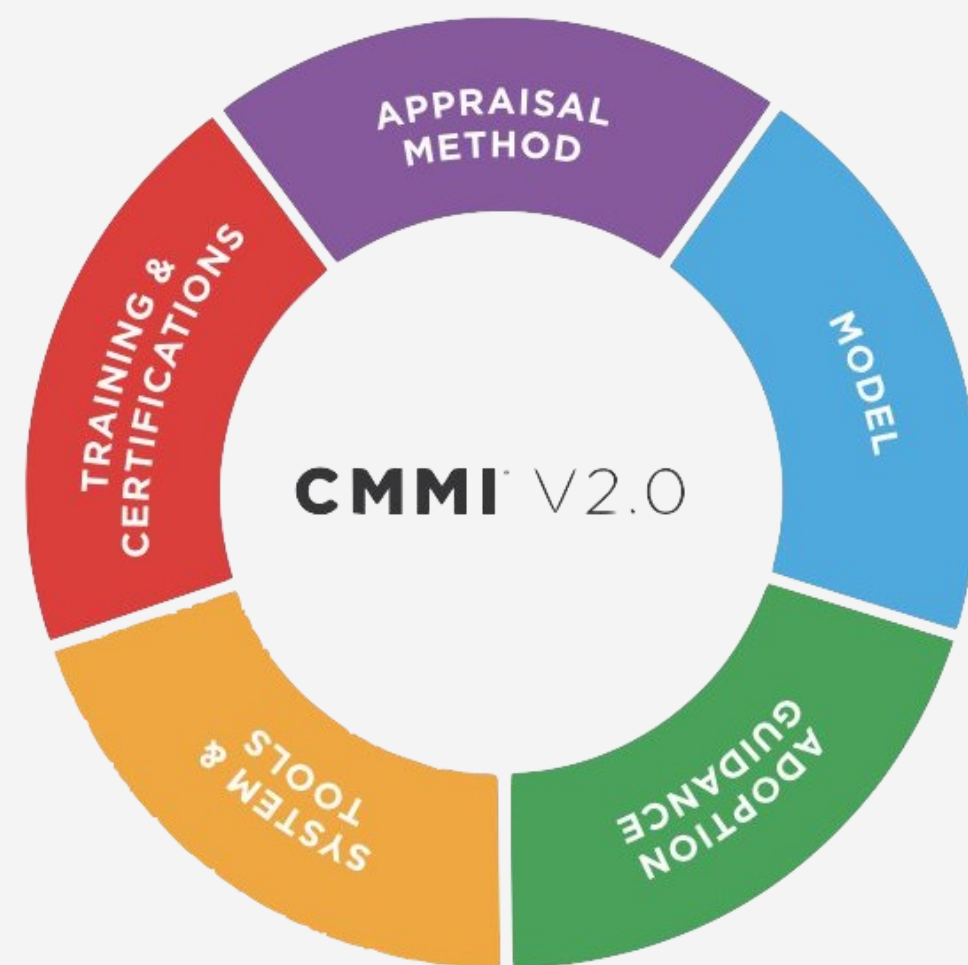
Tencent is a global technology leader and one of the largest technology company in Asia. Tencent Cloud is part of a rich digital ecosystem that includes some of China's top social, messaging, mobile payment, gaming, digital literature, music streaming, and video platforms.



Two million square-meter 'Net City' Dachanwan port district of Shenzhen, China

↑ What is maturity model

Maturity Model is a verified Self-Assessment Tool which helps organizations to quickly understand their current level of capability and performance in the context of their own business objectives and compared to similar organizations.



- Improve Business Performance
- Leverage Current Best Practices
- Build Agile Resiliency and Scale
- Increase Value of Benchmarking
- Accelerate Adoption

-- CMMI institute <https://stage.cmmiinstitute.com/cmmi>

Why maturity model is needed for cities



The Smart Sustainable Cities Maturity Model is designed to walk cities through the process of becoming a Smart sustainable City

- Describe general smart sustainable city goals, recognizing that these will vary from city to city
- Assess the current situation in developing SSCs
- Assist in formulating a development strategy and outline the necessary milestones
- Learn the challenges and global best practices in developing SSCs
- Help cities to do self-evaluation and enable them to share the results with other cities

ITU-T Y.4904 Smart sustainable cities maturity model

The image displays five overlapping covers of the ITU-T Recommendation Y.4904 document, each in a different language. The covers are arranged in a staggered, overlapping fashion, showing the front and back of several documents. The languages represented are English, Chinese, Arabic, Russian, and Spanish. Each cover prominently features the ITU-T logo and the title 'Smart sustainable cities maturity model'. The document number 'Y.4904 (12/2019)' is also visible on each cover.

English Cover:
 International Telecommunication Union
ITU-T
 TELECOMMUNICATION STANDARDIZATION SECTOR OF ITU
Y.4904 (12/2019)
 SERIES Y: GLOBAL INFORMATION INFRASTRUCTURE, INTERNET PROTOCOL ASPECTS, NEXT-GENERATION NETWORKS, INTERNET OF THINGS AND SMART CITIES
 Internet of things and smart cities and communities – Evaluation and assessment
Smart sustainable cities maturity model
 Recommendation ITU-T Y.4904

Chinese Cover:
 国际电信联盟
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 قطاع تقيس الاتصالات في الاتحاد الدولي للاتصالات
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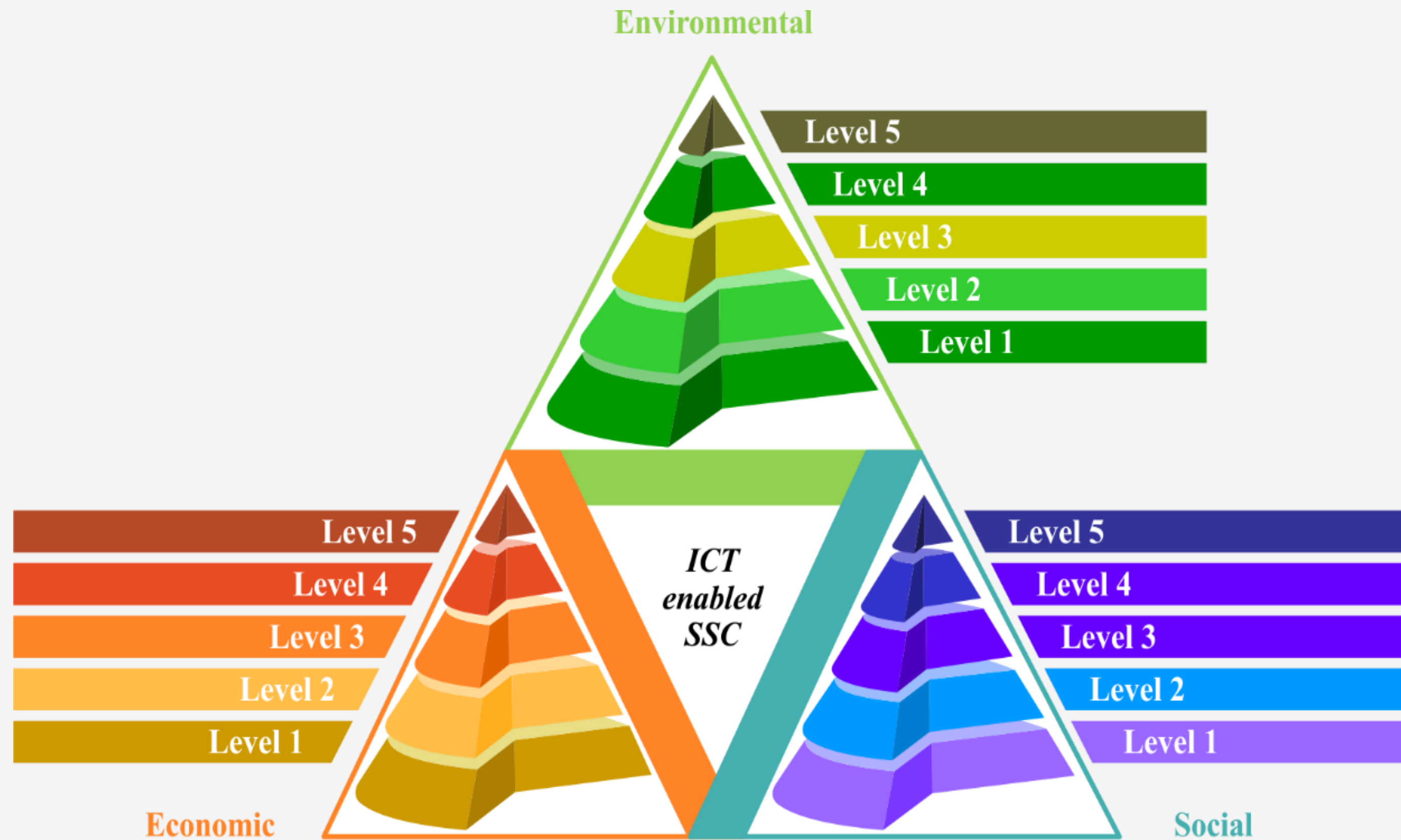
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 الاتحاد الدولي للاتصالات
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Russian Cover:
 Международный союз электросвязи
ITU-T
Y.4904 (12/2019)
 ОННАЯ КОЛА ЖКОЛЕНИЙ, ДА общества –
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 Modèle de maturité des villes intelligentes et durables
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 Unión Internacional de Telecomunicaciones
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Y.4904 (12/2019)
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 dades
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 Recommendation UIT-T Y.4904



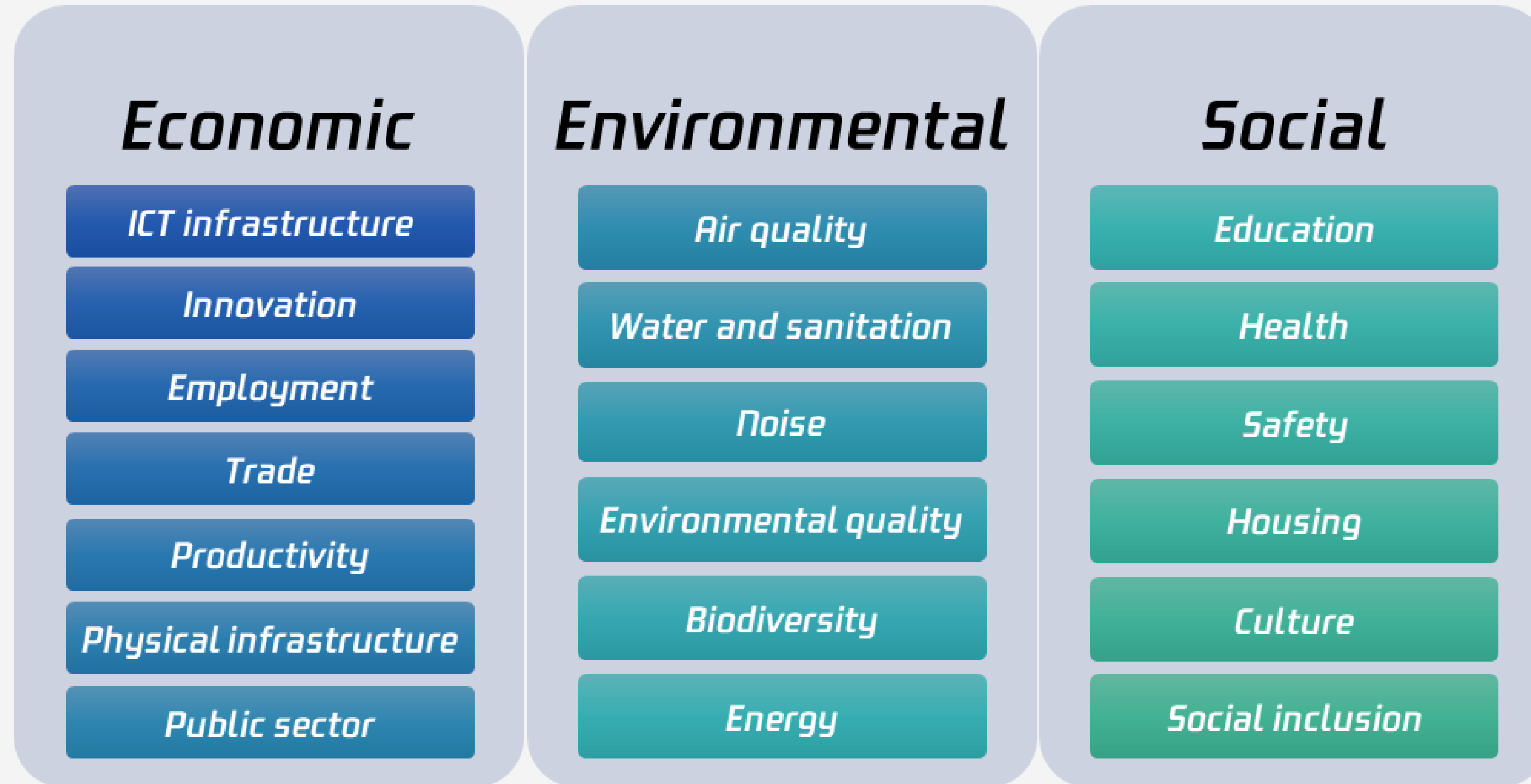
Smart sustainable cities maturity model



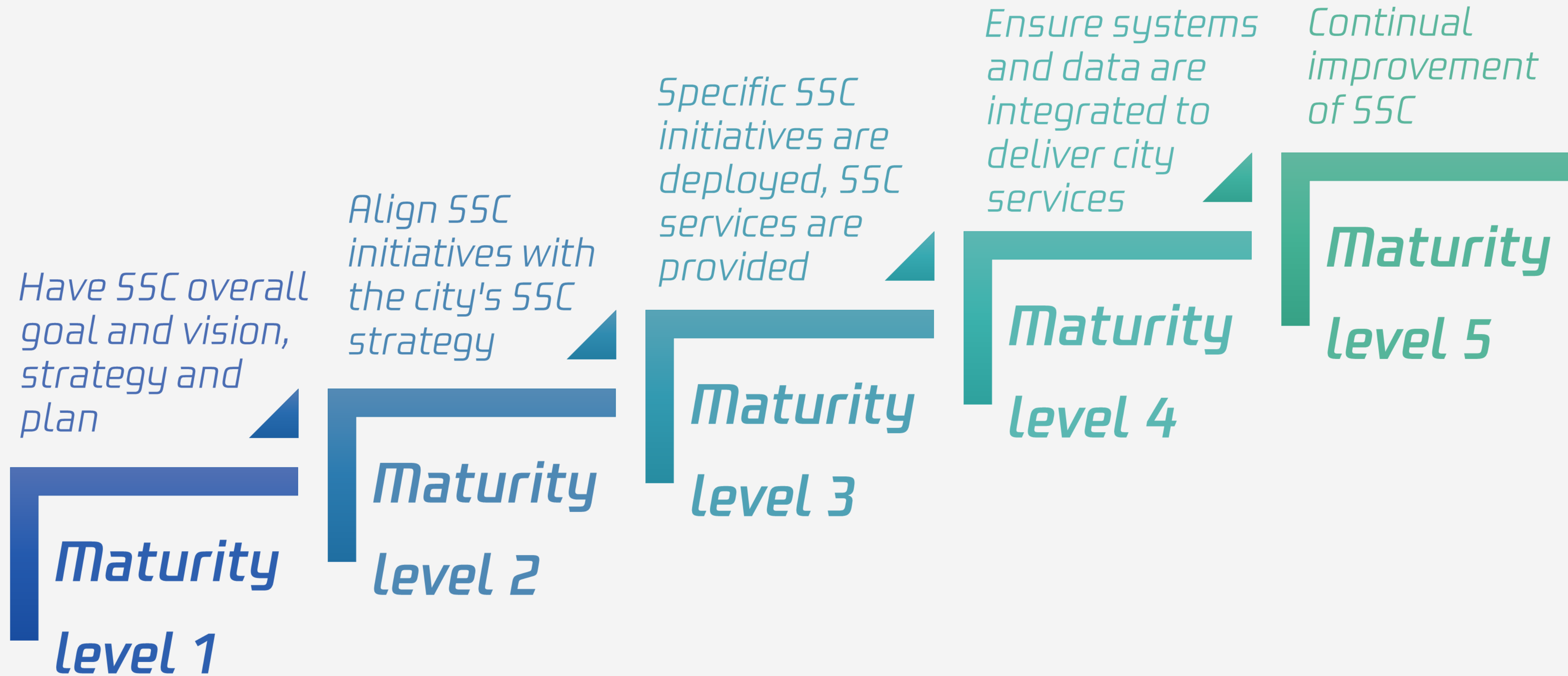
Y.4904(19)_F01

- general goals of a smart sustainable city
- identify development aspects and outline the necessary milestones
- identify KPIs for the purpose of the maturity assessment

Smart sustainable cities maturity model - Dimensions



Smart sustainable cities maturity model – Maturity levels





How to use the maturity model

Step 1 : Map KPIs, such as ITU-T SSC KPIs, into the maturity model;

Step 2: Prepare the maturity assessment related achievements and KPIs (cities can add additional KPIs according to their particular needs and strategy).

Step 3: Develop the performance matrix to show the maturity roadmap by setting target values for KPIs at each maturity level based on cities' situation and strategy.

Step 4: Conduct the maturity assessment at the beginning and also at different stages during the smart city development and determine the performance of the cities.

Step 5: Compare the cities' performance with respect to their baseline performance. The results of the comparison are recommended to include the results of the assessment, suggested actions, or any other suitable information required by the maturity model.





Guidance on how to use the maturity model - Step 1

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Smart sustainable cities maturity model – KPI mapping

Maturity level	Topic	KPI	Referenced ITU-T Recommendations		
			Y.4901	Y.4902	Y.4903
Level 1 and onward					
Level 2 and onward					
Level 3 and onward					
Level 4 and onward					
Level 5 and onward					



Guidance on how to use the maturity model - Step 2

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Smart sustainable cities maturity model - achievements table

	<i>Strategy</i>	<i>Infrastructure</i>	<i>Data</i>	<i>Services and applications</i>	<i>Assessment</i>	<i>KPIs performance</i>
<i>Maturity Level 1</i>						
<i>Maturity Level 2</i>						
<i>Maturity Level 3</i>						
<i>Maturity Level 4</i>						
<i>Maturity Level 5</i>						



Guidance on how to use the maturity model - Step 3

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Smart sustainable cities maturity model – performance matrix

Dimension	Topic	KPIs	Long-term target KPI value for maturity level 5				
			Interim target KPI value for maturity level 4				Target value
			Interim target KPI value for maturity level 3			Interim target value	
			Interim target KPI value for maturity level 2		Interim target value		
			Current KPI value for maturity level 1				
Economic	ICT infrastructure	Household Internet access	Baseline collected	Interim target value e.g., 30%	Interim target value e.g., 40%	Interim target value e.g., 60%	Target value e.g., 80%
		Electricity system outage time	Baseline collected	–	Interim target value e.g., 30 mins.	Interim target value e.g., 25 mins.	Target value e.g., 15 mins.





Guidance on how to use the maturity model - Step 4

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Verification Reports

City Snapshots



Case Studies

Factsheets

Thanks