

Decision Support Systems for Smart City Applications

Chapter 11

Cognitiveness of 5G Technology Toward Sustainable Development of Smart Cities

Kumari Priyanka, Gnapika Mallavaram, Archit Raj, Devasis Pradhan, Rajeswari

Book Editor(s): Loveleen Gaur, Vernika Agarwal, Prasenjit Chatterjee

First published: 01 December 2022

<https://doi.org/10.1002/9781119896951.ch11>

Summary

The principle objective of this logical exploration is to analyze the role of information and communication technologies (ICTs) in the sustainable development of smart cities toward futuristic communication. Along these lines, we have involved expressive examination and basic near investigation to feature the effect of the new age of 5G advancements on the shrewd improvement of the fundamental regions that structure the design of a city. The main objective of this chapter is to present the advantages of incorporating 5G innovations for an overall smart, comprehensive, and long haul improvement of cities. However to economically profit from 5G technology, it is very fundamental that authorities of urban areas/states should make productive execution structures as far as possible, including mechanical framework, human resources, advancement, inside guidelines, and clients.

References

Gartner , Gartner forecasts worldwide 5G network infrastructure revenue to reach \$4.2 billion in 2020 , *White paper from Gartner* , August 22, 2019. Available online: <https://www.gartner.com/en/newsroom/press-releases/2019-08-22-gartner-forecasts-worldwide-5g-network-infrastructure> (accessed on 17 August 2021).

[Google Scholar](#)

Recommendation ITU-R M.2150-0, 2021.02 , International Telecommunication Union Radio Communication , Geneva, Switzerland , 2021 .

[Google Scholar](#)

Yigitcanlar , T. , Dur , F. , Dizdaroglu , D. (2015). Towards prosperous sustainable cities: A multiscale urban sustainability assessment approach . *Habitat International* , 45 , 36 – 46 .

[Web of Science®](#) | [Google Scholar](#)

UK Department for Digital, Culture, Media & Sport , *UK Telecoms Supply Chain Review Report* , Telecoms Security and Resilience Team Department for Digital , Culture, Media, and Sport, 100 Parliament Street SW1A 2BQ, July 2019.

[Google Scholar](#)

Bansal , R. , Obaid , A.J. , Gupta , A. , Singh , R. , Pramanik , S. , Impact of big data on digital transformation in 5G era . In *Journal of Physics: Conference Series* , 1963, 1, p. 012170 . IOP Publishing , 2021 July.

[Google Scholar](#)

Ahmad , I. , Shahabuddin , S. , Kumar , T. , Okwuibe , J. , Gurtov , A. , Ylianttila , M. , Security for 5G and beyond . *IEEE Commun. Surv. Tut.* , 21 , 4 , 3682 – 3722 , 2019 .

[Web of Science®](#) | [Google Scholar](#)

Huang , T. , Yang , W. , Wu , J. , Ma , J. , Zhang , X. , Zhang , D. , A survey on green 6G network: Architecture and technologies . *IEEE Access* , 7 , 175758 – 175768 , 2019 .

[Web of Science®](#) | [Google Scholar](#)

Tomkos , I. , Klonidis , D. , Pikasis , E. , Theodoridis , S. , Toward the 6G network era: Opportunities and challenges . *IT Prof.* , 22 , 1 , 34 – 38 , 2020 .

[Web of Science®](#) | [Google Scholar](#)

Cui , J. , Chen , J. , Zhong , H. , Zhang , J. , Liu , L. , Reliable and efficient content sharing for 5G-enabled vehicular networks . *IEEE Trans. Intell. Transp. Syst.* , 23 , 2 , Feb. 2022 .

[Web of Science®](#) | [Google Scholar](#)