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# Smart Governance for Smart Cities: A Conceptual Framework from Social Media Practices

<sup>1</sup>Harish Kumar, <sup>1</sup>Manoj Kumar Singh and <sup>1</sup>M.P. Gupta

<sup>1</sup>Department of Management Studies,  
Indian Institute of Technology, IIT Delhi, New Delhi 110016, India

{harishkr08@gmail.com, manojksiet@gmail.com, mpgup-  
ta@dms.iitd.ac.in}

**Abstract.** The governance for smart cities must improve democratic processes, transparency in governance, citizen-centric development and political strategies for the cities. To achieve this, the government needs to gather information about citizens' perceptions, demands, development priorities, grievances, and feedbacks about policies that are being developed or implemented. To involve the citizens in governance, governments should facilitate multiple ways to citizens to communicate. Social media platform empowers the citizens to use technology oriented common platform to communicate among themselves as well as with government. This study proposes a conceptual framework for smart governance illustrating how the governance could be transformed towards smart governance through social media platform.

**Keywords:** Smart cities, citizen-centric development, Smart city governance, Social media.

## 1 Introduction

The governance includes all governing processes of political, social, economic, educational, development, city infrastructure and administrative work to enhance the prosperity and growth in the cities as well as country. The quality of governance [25] affects the development of cities. The smart cities are an ICT enabled city, which facilitates fast communication, real-time information to citizens, quality life, well connected transport, better civic services, health facilities, continuous energy and water supply, environment conservation and appropriate use of natural resources.

To maintain the self-aware nature of smart cities, citizens are expected to retrieve all information and participate actively in the government actions, development plans, and future policies etc. For the successful smart cities, citizens' suggestions, participation and feedbacks in government process are essential. Therefore, there is need for an efficient governance structure [8] and the two ways communication channels to make the city government smart.

## 2 Literature Review

The smart administration, integration of various services, and multiple channels of communications [22] are required for the development of the smart cities.

Social media has the unique ability to enable politicians and policymakers to mine user-generated data and content from their Facebook pages and twitter accounts to look for reactions to various policy proposals [23], [27]. The participation, collaboration and transparency in governance could be improved via open government policies [6], [19], [24]. The evaluation criteria of social media use in the Korean government [29] was developed among four dimensions i.e. openness of information, Promptness of information, mutuality of information, and control of information.

The social media could be used for citizen empowerment [16] and crisis situations [12]. Automation in governance [1] through e-governance has improved the efficiency and transparency in the government processes and services [9]. The government can use social media to discuss about implementation challenges, new services, monitoring the process, crowdsourcing over various issues to get the appropriate solutions.

### 3 Selection of Indicators for Smart Governance

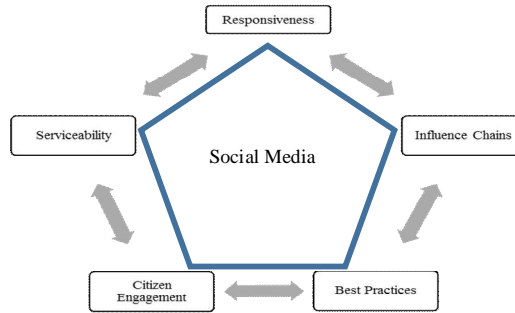
Some indicators have been identified from the various research articles (table 1) which are considered essentials for smart governance.

**Table. 1.** Various indicators for smart governance

Citizen centric government [13]	Interactive monitoring process [2]
Quality of policy making [18]	Strategic urban planning [2]
Expanding the number and types of participants [18]	Transparency in government processes [2], [13], [18], [23]
Providing information to citizens [2], [18]	Public engagement [28]
Easy access to information for the citizens [13]	Planning and regional development [17]
Equality of participation [13], [18]	Citizens' feedback systems to government [2], [23]
Open governance [3], [14], [20]	Public perception [20]
Government innovations [7]	Increased degree of government openness [13], [23]
Response from target audience [18]	Collection of valuable opinions [5]
Decision making planning [28]	Public and social services [10]
Resource efficiency [8]	Understanding citizens' problems and context [23]
Responsible resource consumption [8]	Open government for direct and indirect effects [19]
Decision making process [18]	Citizen satisfaction [11]
Political strategies [10]	E-participation [11]
E-Consultation [18]	E-empowering citizens [18]
Increased efficiency and effectiveness in government processes outcomes [2], [13]	Use of social media for crisis situations (traffic and weather etc.) [12]
Accountability [2], [8], [13], [23]	Creating a digital space from social space [23]
Increased collaborative ability [13], [18], [24]	Promote citizens trust [23]
Trust in government [21]	Crowdsourcing solutions and innovations [4]
Public Participation in decision making [10], [13]	Reduce difference in communications among govt. vs regions vs citizens [23]
City policy making [2]	Encouraging citizens participation [23]
Social Interaction [3]	Sharing of Information to create awareness [13], [15]
Organizational capacity [8]	Citizens' co-production [16]
Transparent governance [10], [23]	Public forum over social media [26]
Use of social media for critical situations (earthquakes and floods etc.) [12]	Direct communication channels between government and citizens [23]

## 4 Conceptual Framework and Discussions

Social media meliorate the government’s vision, strategies, planning, leadership and resources utilization. The rapid increase in the internet usage and social media have forced government to show presence on social media for public engagement and mobilizing individuals. The study designs a conceptual framework with five dimensions to find the social media role to improve the city governance (figure 1).



**Fig. 1.** A conceptual framework to achieve smart governance through the social media practices.

The indicators for smart governance (table 1) have been classified into framework dimensions (figure 1) based on social media involvement towards the smart governance. Table 2 shows the key role of social media in improving the city governance.

**Table 2.** Characteristics features of each dimension

Citizen Engagement	Serviceability	Responsiveness	Influence chains	Best Practices for smart governance
Public Participation in decision making (E-participation)	Understanding citizens' problems and context	Response from targeted audience	Equality of participation	Citizen centric government
Improved decision making process and well informed citizens	Easy access to information for the citizens	Sharing of Information to create awareness	Expanding the number and types of participants	Providing information to citizens
Public forum for discussion over social media	Improved organizational capacity	Government accountability	Increased transparency in government processes	Transparent government
Citizens' co-production in development	Adoption of open data usage to innovate new services	Government innovations	Increased degree of government openness	Open governance
E-empowering citizens	Increased efficiency and effectiveness in government processes outcomes	Citizen satisfaction	Encouraging citizens participation	E-Consultation
Public engagement in policy making process	Responsible resource consumption	Taking public perception into consideration	Increased social interaction among government officials and citizens	City policy making
Citizens' feedback	Direct communication	Promote citizens' trust	Reduce difference in	Interactive monitor-

systems to govern- ment	tion channels between government and citizens	in government activities	communications among govt. vs regions vs citi- zens	ing process
Collection of valu- able opinions	Crowdsourcing solu- tions and service inno- vations	Resource efficiency	Quality of policy making	Planning and region- al development
Creating a digital space from social space	Use of social media for crisis situations and critical situations	Increased collaborative ability	Strategic urban plan- ning	Multichannel infor- mation delivery

**Citizen engagement through social media.** Social media encourages the citizens to participate in government processes as a co-producer in the policies, decisions making and planning for the city development. The citizens can play an active role in giving feedbacks or suggestions to the government schemes and programs. The citizens may take part in government process at anytime from anywhere.

**Improved serviceability through social media.** The citizens may inform their problems and requirements directly to government officials through social media. Adoption of open data and crowdsourcing solutions through social media could lead to the new innovations and wisely resources consumption.

**Social media and government responsiveness.** Information could be shared in fast pace over social media to create the awareness or to manage the disasters. Adoption of social media by government officials and responses over these sites would increase the government accountability and trust among the citizens.

**Social media and Influence Chains.** Influence chains enhances the capacity of government to mobilize changes in the city as per citizens' requirements. E-participation over social media enlarges the scope of citizen participation and equality of participation among the citizens in decision making. Social media increases the transparency and openness in government via reducing the middleman in the government procedures.

**Best Practices for smart governance.** The facility for E-information, E-consultation and E-participation through social media fulfills the basic criteria of smart governance for a smart city. The interactive monitoring process for planning and policy implementations increases the transparency in the government.

Thus, the framework suggests that the social media improves government functionality, planning and reachability, and user participations for the cities development. Therefore, the social media plays a crucial role in the transformation of city governance into smart governance.

## 5 Conclusions, Limitations and Further Research

Social media is a two way medium for sharing the thoughts, feelings and opinions that could be used to deliver the smart solution for smart cities. It increases the

potential of city government to grow into effective, responsible and well-resourced unit to improve the urban conditions. The smooth functioning of all systems, good strategies, integrated operations & maintenance, and controlled civic services to the citizens are the main keys of smart governance for the smart cities.

Government needs to set up the privacy and security solutions and also legitimacy check of the information spread over the social media. The effects of social media issues like privacy, authenticity of data, fake social accounts, hacking of the personal accounts, and misuse of social media to get political or religious benefits could also be considered while making the social media as an open governance platform.

## 6 References

1. Abdelsalam, H. M., Reddick, C. G., Gamal, S., & Al-shaar, A.: Social media in Egyptian government websites: Presence, usage, and effectiveness. *Government Information Quarterly*, 30, 4, 406-416 (2013).
2. Baud, I., Scott, D., Pfeffer, K., Sydenstricker-Neto, J., & Denis, E.: Reprint of: Digital and spatial knowledge management in urban governance: Emerging issues in India, Brazil, South Africa, and Peru. *Habitat International*, 46, 225-233 (2015).
3. Bertot, J. C., Jaeger, P. T., & Hansen, D.: The impact of polices on government social media usage: Issues, challenges, and recommendations. *Government information quarterly*, 29, 1, 30-40 (2012).
4. Bertot, J. C., Jaeger, P. T., & Grimes, J. M.: Crowd-sourcing transparency: ICTs, social media, and government transparency initiatives. In *Proceedings of the 11th Annual International Digital Government Research Conference on Public Administration Online: Challenges and Opportunities*, pp. 51-58 (2010). Digital Government Society of North America.
5. Bonsón, E., Torres, L., Royo, S., & Flores, F.: Local e-government 2.0: Social media and corporate transparency in municipalities. *Government information quarterly*, 29, 2, 123-132 (2012).
6. Chun, S. A., & Reyes, L. F. L.: Social media in government. *Government Information Quarterly*, 29, 4, 441-445 (2012).
7. Criado, J. I., Sandoval-Almazan, R., & Gil-Garcia, J. R.: Government innovation through social media. *Government Information Quarterly*, 30, 4, 319-326 (2013).
8. de Oliveira, J.A.P., Doll, C.N., Balaban, O., Jiang, P., Dreyfus, M., Suwa, A., Moreno-Peñaranda, R. & Dirgahayani, P.: Green economy and governance in cities: assessing good governance in key urban economic processes. *Journal of Cleaner Production*, 58, 138-152 (2013).
9. Dixon, B. E.: Towards e-government 2.0: An assessment of where e-government 2.0 is and where it is headed. *Public Administration and Management*, 15, 2, 418 (2010).
10. Giffinger, R., Fertner, C., Kramar, H., Kalasek, R., Pichler-Milanovic, N., & Meijers, E.: Smart cities. Ranking of European medium-sized cities, Final Report, Centre of Regional Science, Vienna UT (2007).
11. Jinmei, H.: Quality evaluation of e-government public service. In *Management and Service Science (MASS), 2011 International Conference*, pp. 1-4, (2011, August). IEEE.
12. Kavanaugh, A.L., Fox, E.A., Sheetz, S.D., Yang, S., Li, L.T., Shoemaker, D.J., Natsev, A. and Xie, L.: Social media use by government: From the routine to the critical. *Government Information Quarterly*, 29, 4, 480-491 (2012).

13. Kim, P. S., Halligan, J., Cho, N., Oh, C. H., & Eikenberry, A. M.: Toward participatory and transparent governance: report on the Sixth Global Forum on Reinventing Government. *Public Administration Review*, 65, 6, 646-654 (2005).
14. Lee, G., & Kwak, Y. H.: Open government implementation model: a stage model for achieving increased public engagement. In *Proceedings of the 12th Annual International Digital Government Research Conference: Digital Government Innovation in Challenging Times*, pp. 254-261 (2011, June). ACM.
15. Li, H., & Sakamoto, Y.: Social impacts in social media: An examination of perceived truthfulness and sharing of information. *Computers in Human Behavior*, 41, 278-287 (2014).
16. Linders, D.: From e-government to we-government: Defining a typology for citizen coproduction in the age of social media. *Government Information Quarterly*, 29, 4, 446-454 (2012).
17. Maas, L. T.: The Effect of Social Capital on Governance and Sustainable Livelihood of Coastal City Community Medan. *Procedia-Social and Behavioral Sciences*, 211, 718-722 (2015).
18. Macintosh, A.: Characterizing e-participation in policy-making. In *System Sciences, 2004. Proceedings of the 37th Annual Hawaii International Conference*, pp. 10-pp (2004, January). IEEE.
19. Meijer, A. J., Curtin, D., & Hillebrandt, M.: Open government: connecting vision and voice. *International Review of Administrative Sciences*, 78, 1, 10-29 (2012).
20. Mueller, M. L.: Hyper-transparency and social control. *Telecommunications Policy*, 39, 9, 804-810 (2015).
21. Nam, T.: Citizens' attitudes toward open government and government 2.0. *International review of administrative sciences*, 78, 2, 346-368 (2012).
22. Odendaal, N.: Information and communication technology and local governance: understanding the difference between cities in developed and emerging economies. *Computers, Environment and Urban Systems*, 27, 6, 585-607 (2003).
23. Picazo-Vela, S., Gutierrez-Martinez, I., & Luna-Reyes, L. F.: Understanding risks, benefits, and strategic alternatives of social media applications in the public sector. *Government information quarterly*, 29, 4, 504-511 (2012).
24. Stamati, T., Papadopoulos, T., & Anagnostopoulos, D.: Social media for openness and accountability in the public sector: Cases in the Greek context. *Government Information Quarterly*, 32, 1, 12-29 (2015).
25. Stead, D.: What does the quality of governance imply for urban prosperity?. *Habitat International*, 45, 64-69 (2015).
26. Stewart, K.: Designing good urban governance indicators: The importance of citizen participation and its evaluation in Greater Vancouver. *Cities*, 23, 3, 196-204 (2006).
27. Sobkowicz, P., Kaschesky, M., & Bouchard, G.: Opinion mining in social media: Modeling, simulating, and forecasting political opinions in the web. *Government Information Quarterly*, 29, 4, 470-479 (2012).
28. White, J. T.: Pursuing design excellence: Urban design governance on Toronto's waterfront. *Progress in Planning*. (2015).
29. Yi, M., Oh, S. G., & Kim, S.: Comparison of social media use for the US and the Korean governments. *Government Information Quarterly*, 30, 3, 310-317 (2013).