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Connecting Communities for Emergency Awareness within the Short Circumference

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ABSTRACT: Emergency notifications and passing the information is required in this modern era because of constructions are beyond the rules of the government. If there is any emergency we need to have and IoT device which will connect to the nearest IoT which are connected to the same network tower in that locality and there will be transmission of data from one device to other device which will be helpful for data transmission of emergency in a locality and meanwhile getting support from authorities we can save the lives of the people who need some help in that situation. The functionality of this system requires a high level interactive system which will support the low frequency band width which will form connection between the devices and that information must be store in the repository for the population awareness regarding the emergencies and to know how these devices will interact with each other for protecting the person in the emergency. IEEE standards of networking and the Big Data analytics are required for data transmission and to store the valuable data and to discard the unwanted data time to time from the repositories and the management of this kind of networking standards need more concentration on sensors which will carry and generate data and transfer to the repository as well are to the nearest devices. In this research article we are focusing on experimenting the connectivity between devices and how the data is stored in repository and how it is transferred from one device to another.

KEYWORDS: IoT, Devices, Connectivity, Big Data, Transformation, IEEE, Networking, Data Transfer

I. INTRODUCTION

Connecting communities using IoT for security systems is a novel task in IoT implementation and also Big Data analytics. We may have doubt that how we are related to Big Data analytics in the connecting communities and how we can solve this kind of issues in the real world and what is the actual purpose for connecting communities and the things created with these communities are causing the big data and which are further can or cannot be processed or need to be maintained. The purpose of this study is to help the people who are in danger in a location and signaling all the connected devices in that locality to save the person before happening anything to him or her. Consider a simple example for connecting devices and communities for better understanding. “We have 15 floored building and a lady in top floor was stuck in fire in her residency and she is unable to contact the people outside for help. The main purpose of these connecting devices will start now by generating message regarding the current accident, scan for the connecting devices surrounding to that building within a specific region, let it be a 100 meters circumference around that building and send that common message to all the devices which are connected to Wi-Fi or to the mobile network. The logic here is all the different mobile networks or wireless networks will connect to same tower which is nearer to them and all the signals will be transmitted from the tower. This IoT device will generate message and scan the connecting devices in that locality and transfer to all the available towers in the zone. This operation is based on Zone wise. When this message is transferred it consists of location of the threat, longitude and latitude, small description. Here big data is created time to time, because there is a few steps we need to consider here while scanning the devices and transferring the data from towers. The results of scanning devices, scanning for nearest

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towers, transforming data, carrying bits information of message, checking for data loss prevention, verifying whether all the scanned devices got the message etc. Everything is stored in the repository is a big data. If this is from a single place we cannot call this as big data and we need not to process that data, but if the case is continued in different locations and scan is done with hundreds of devices then all the information we gather will become big data and the case here is how to store and process the data and how to provide security for the data. This kind of scanning devices is also used to create maps for the Google devices like Google maps. The reason is Google maps will work on the moment of the android device in a specific location and tracks its speed to create map from specific location. This kind of application will help to create awareness about the accidents and also will help to generate secure people if there is any risk for them from a specific locality."

Organizations comprehend there's an enormous inundation of unstructured information accessible from gadgets. Be that as it may, it's not just about information administration, organizations need to genuinely consider what information is significant and set the suitable information model to help investigation.

It is safe to say that you know about the experience your clients experience utilizing your item or administration? How regularly would they say they are utilizing the gadget? At the point when was did they last utilize the gadget? Keep it basic and concentrated on by what method would this be able to information enable you to reveal the client travel and enhance their experience. By beginning to comprehend use (recurrence, time of utilization, area), you can derive and start to impact use designs.

In case you're endeavoring to make sense of how to utilize IoT information for your business, here's a breakdown of how you can begin the discussion with your IT group or CIO/CTO:

Get clear on your targets.

Associate with your inward group and examine straightforwardly what you think about your clients to date and distinguish what holes or bits of knowledge you're endeavoring to recover from your information. What data will enable you to comprehend your clients' use of the gadget?

Do you require ongoing data for basic choices OR noteworthy inclining and intermittent reports?

What industry would you say you are in? Who are your clients?

Is it accurate to say that you are a keen auto producer and need to screen fuel levels, tire weight, driver conduct or motor capacities to inform the driver when a potential issue is coming up?

It is safe to say that you are a rancher who needs to track resources like shipments of deliver or estimate yields through sensors that check temperature and precipitation?

Understanding the information focuses will enable you to build up a fitting information show that will go about as the channel for the information. It is one thing to store the greater part of the unstructured information and just oversee it, yet another to audit the data the information is giving and finding a significant method to process and associate with an investigation stage for bits of knowledge.

When you distinguish the information that should be gathered, the subsequent stage is to interface your information

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and imagine it. You should affirm how the information will be gathered, prepared and coordinated into a business framework like Optimizely, Tableau, Salesforce, and so on. Combination is critical. The information that you gather is just as important as the devices used to make it noteworthy, visual and sagacious. Finding the correct instrument can be testing, so ensure the examination stage comprehends your industry information, offers an extensive variety of highlights (perception, security, expansive channels) and meets your financial plan.

When you have a comprehension of what you need your information to give, you would then be able to gather a technique to diagram the majority of your stack choices from equipment, iOS, stage and dashboard. Gartner gives an extraordinary breakdown on the best way to set up an IoT procedure.

Try not to attempt to heat up the sea instantly. Potential is about boundless because of cutting edge usefulness and heaps of information. Be that as it may, begin little and get brisk/early wins. Expand on those in resulting periods of work. This space is advancing so quickly that you are probably going to find extra abilities as you travel through your procedure.

IoT information accumulation and preparing can be unpredictable and we are just at the cutting edge of mass multiplication of the innovation. Be that as it may, keep it basic by understanding the information your gadget can create, discover a cloud stage to gather the information, incorporate it through your business, dissect it to distinguish patterns or examples, and utilize the bits of knowledge to enhance operational efficiencies or administrations.

The idea of a system of shrewd gadgets was talked about as ahead of schedule as 1982, with an altered Coke machine at Carnegie Mellon University turning into the primary Internet-associated appliance, ready to report its stock and whether recently stacked beverages were cold. Mark Weiser's original 1991 paper on pervasive processing, "The Computer of the 21st Century", and in addition scholarly scenes, for example, UbiComp and PerCom created the contemporary vision of IoT. In 1994 Reza Raji depicted the idea in IEEE Spectrum as "[moving] little parcels of information to a huge arrangement of hubs, in order to incorporate and robotize everything from home apparatuses to whole factories". Between 1993 and 1996 a few organizations proposed arrangements like Microsoft's at Work or Novell's NEST. In any case, just in 1999 did the field begin gathering energy. Bill Joy imagined Device to Device (D2D) correspondence as a major aspect of his "Six Webs" system, introduced at the World Economic Forum at Davos in 1999.

The idea of the Internet of things wound up noticeably mainstream in 1999, through the Auto-ID Center at MIT and related market-examination publications. Radio- recurrence recognizable proof (RFID) was seen by Kevin Ashton (one of the originators of the first Auto-ID Center) as an essential for the Internet of things at that point. Ashton lean towards the expression "Web for things." If all items and individuals in day by day life were outfitted with identifiers, PCs could oversee and stock them. Besides utilizing RFID, the labeling of things might be accomplished through such innovations as close field correspondence, scanner tags, QR codes and advanced watermarking.

The further sections we discuss about current connecting communities in different domains, research gaps in current scenarios, proposed approach architecture, advantages and disadvantage of using this kind of architecture, future scope and conclude the research article.

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II. EXISTING APPROACHES

The existing approaches considered as smart connecting communities for tourism in the smart city based on the past experiences and the past data collected from the devices in the specific city. In this current scenario we have and approach designed in the existing scenario by combining the Cloud computing and IoT for connecting devices by scanning them in the specific locality[1]. TreSight is the technology or the architecture in the existing scenario which is used to connect devices in the locality in Italy based on the tourism requirement. In this architecture we can find the connecting devices architecture through which all the information is forwarded and stored in the repository. On November 2015 a new version of smart connecting communities was released and its version 4 framework [2].

The vision plot in this system is that groups in all settings and at all scales approach progressed digital physical frameworks/Internet of Things innovations and administrations to improve the manageability and personal satisfaction, enhanced wellbeing and security, what's more, monetary success for their occupants. The European Commission has likewise started the European Innovation Part- nership on Smart Cities and Communities in July 2012. IEEE formally propelled the IEEE Smart Cities Initiative on 25 March 2014. [3-7]

It is discernible that the idea of shrewd urban communities is advancing into the idea of savvy and associated groups (SCC). As indicated by Merriam-Webster, a group is defined as a gathering of individuals who live in a similar territory, (for example, a city, the town, or neighborhood). Albeit more individuals live in urban.

regions than in provincial regions comprehensively, 46 percent of the world populace dwell in provincial regions in 2014; around 53 million people live in residential areas with populaces of under 25,000. Notwithstanding size distinction, normally huge urban communities vary from residential areas in history and landscape [2], [3]. In this way SCC, which considers both enormous urban areas and residential areas, will benefit a bigger number of individuals than brilliant urban communities.

We contend that web of things can possibly give a pervasive system of associated gadgets and shrewd sensors for SCC, and huge information investigation can possibly empower the move from IoT to ongoing control wanted for SCC. The motivation behind this article is to portray SCC, display openings and difficulties of IoT and huge information examination in SCC, and exhibit the utilization of IoT and huge information investigation in SCC. [8-12]

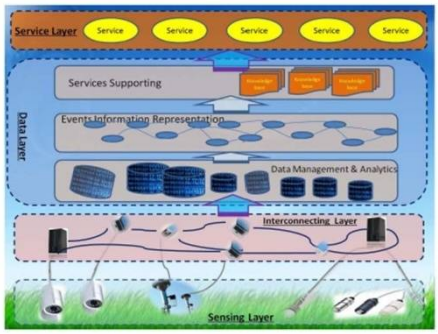

Figure 1: Architecture of transferring data using IoT device and connecting with the device for data transmission

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In figure 1 we can consider the basic architecture of transferring the data from one device to other device. In the sensing layer we have the devices which are capturing data from the location, they are connected with the interconnected layer where we have storage devices which are connected to store the information[13-14]. Then they are further connected with the Data management and analysis algorithms in the data layer and finally in the service layer we have different kinds of services

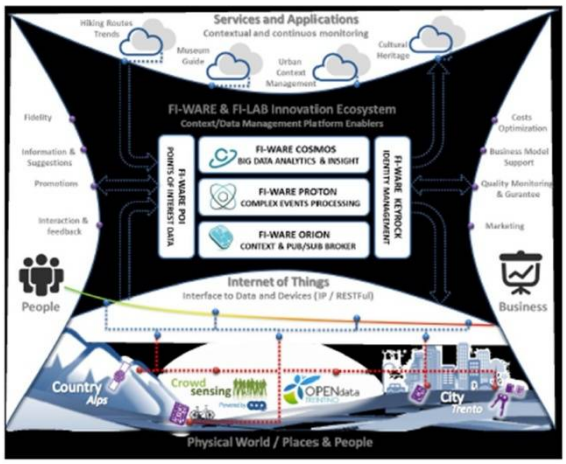

Fig 2: Existing architecture used for tourism maintenance .

IV.PROPOSED ARCHITECTURE OF CONNECTED COMMUNITIES

In this architecture we need to have some operations. They are mentioned as follows:

a. Device must take the commands of the person who is maintaining that.
b. Device must be capable of handling all type of sensors like smoke, fog, smoke, voice etc. If the person is unable to talk it must sense the situation there.
c. That device must be capable of scanning all the devices in the locality to pass the data.

   The scanned information for every second must be backed up into the remote location storage space. It may be a cloud storage
d. Device must be capable of handling all the network towers in that locality. For this first the device must be configured to the network stations so that it can scan the network hosts in that specific locality it configured.
e. It must have the capability to transfer the message to the devices in that locality through network host.
f. The data transferred to all the devices must be stored in the server for the future requirement.
g. The device we are considering must be carry supportive. We must carry that device to anywhere we go. So that device will always connect to your mobile device through IoT app, and through app it will connect to the remote server.
h. This application and device can be utilized as health maintenance software like electronic health records to maintain all the related health records.

In the figure 2 we can find the things related to the existing architecture of tourism communication in Italy which have some devices and connected with each other with some applications a middle ware and transfer the data from one device to other using IoT and cloud computing. This will cause a lot of big data and these kind of connected communities are helpful for the people but we are proposing one new structure with this existing architecture with

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some modifications which will help people to help each other in the risk situation.

The proposed architecture needs the things discussed above.

V. RESEARCH GAPS IDENTIFIED

The existing approach is having a lengthy architecture of collecting data and transferring data from one device to another device and there is a much use do f cloud computing to store data from different resources. The main research gap here is to there is no chance of utilizing the same architecture for protecting people in the risk zone. Suppose if any tourist is in the trap and they don't have any life support then there is no chance of transferring data of that person to other for help. Here there will be no use of maintaining this kind of community information in cloud which cause big data and we have to pay for those resources of cloud without knowing the importance of that data and security issue also will arise in this case.
To avoid this kind of issues we are trying to implement connected communities to save the people in the critical position. All the thing we need here is a device which will do all the operations required. In the later section we will discuss about the architecture of proposed approach of the connected communities.

VI. APPROXIMATION OF RESULTS

The expected results will be as follows in the following able format. This table consists of the variables the device will forward to the connected devices.

Table 1: Contents which the device will transfer to the devices connected to it.

Type of Requirement	Rank of Emergency	Location	Estimated time to reach
Fire Accident	1	Longitude and latitude values	2 min
Accident	1	Longitude and latitude values	1 min
Health Issue	1	Longitude and latitude values	2 min
Fire Accident	1	Longitude and latitude values	5 min

VII. ADVANTAGES AND DISADVANTAGES OF THE PROPOSING ARCHITECTURE

a. We can better utilize the big data architecture for the maintenance of data of different types
b. Cloud computing provides secure storage of data in repository

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c. Network utilization will be in an effective manner.
d. IEEE MAC protocols will be used secured transmission of data
e. People can be saved if they are in any risk. Communication of devices will be excellent and with good quality.

The main disadvantages of this architecture are not yet registered. Will be update soon in the future execution of this research.

VIII. CONCLUSION

The complete article is focusing on the concept of protecting the people in their risk position by communicating their location to outside world who are in the nearest location to that person. The details which the device will transfer are type of requirement like what is the actual emergency. Rank of the emergency like priority we can give to that emergency, location of that person with longitude and latitude and estimated time in which anyone can reach that person. Using which we can safe any person. Using cloud computing we can store the complete communication data, using IEEE standards the device with sensors will communicate to the devices and transfer the data.

REFERENCES

1. Internet of Things and Big Data Analytics for Smart and Connected Communities, YUNCHUAN SUN *, IEEE- 2016.
2. Y. Sun, Y. Xia, H. Song, and R. Bie, ``Internet of things services for small towns," in Proc. Int. Conf. Identi_cat., Inf. Knowl. Internet Things (IIKI), Oct. 2014, pp. 92_95.
3. J. Jara, Y. Sun, H. Song, R. Bie, D. Genooud, and Y. Bocchi, ``Internet of Things for cultural heritage of smart cities and smart regions," in Proc. IEEE 29th Int. Conf. Adv. Inf. Netw. Appl.Workshops (WAINA), Mar. 2015, pp. 668_675.
4. H. Song, R. Srinivasan, T. Sookoor, and S. Jeschke, Smart Cities: Founda- tions and Principles. Hoboken, NJ, USA: Wiley, 2016.
5. U.S. Department of Transportation. (2013). Livability 101. [Online]. Available: http://www.dot.gov/livability/101.
6. UNESCO. (2014). Protecting Our Heritage and Fostering Creativity.[Online].
7. Available:http://en.unesco.org/themes/protecting-our- heritage- and-fostering-creativity.
8. S. Simon. (2015). In the company of scholars: `Are We Losing Our Past or Our Future? Sustainable Preservation of Cultural Heritage'.[Online]. Available: http://ipch.yale.edu/news/company-scholars-are-we-losing- our-past-or-our-future-sustainable-preservation-cultural.
9. N. D. Milder and A. Dane, ``Revitalizing small towns: Resolving downtown challenges," Econ. Develop. J., 2013. [Online]. Available: http://www.rural- design.org/resource/revitalizing-small- owns-resolving- downtown-challenges.
10. Annex, ``World commission on environment and development," Oxford
11. Univ. Press, New York, NY, USA, 1987. Tech. Rep. A/42/427, 1987.
12. Sustainable Communities. (2016). About Sustainable Communities. [Online].Available:http://www.sustainable.org/about.
    A. T. Campbell et al., ``The rise of people-centric sensing," IEEE Internet Comput., vol. 12, no. 4, pp. 12_21, Jul./Aug. 2008.
13. A. T. Campbell, S. B. Eisenman, N. D. Lane, E. Miluzzo, and R. A. Peterson, ``People-centric urban sensing," in Proc. 2nd Annu. Int. Workshop Wireless Internet (WICON), New York, NY, USA, 2006, Art. no. 18. [Online]. Available: http://doi.acm.org/10.1145/ 1234161.1234179.
14. R. K. Ganti, F. Ye, and H. Lei, ``Mobile crowdsensing:Current state and future challenges," IEEE Commun. Mag., vol. 49, no. 11, pp. 32_39, Nov. 2011.
15. M. Pouryazdan, B. Kantarci, T. Soyata, and H. Song,``Anchor-assisted and vote-based trustworthiness assurance in smart city crowdsensing," IEEE Access, vol. PP, no. 99, pp. 1_1, doi: 10.1109/ACCESS.2016.2519820.
16. "R. T. Mylavarapu, ""A Method for Approximated Deep Learning Towards Dynamic Sharing from Big-Data Analysis,"" 2018 International Conference on Research in Intelligent and Computing in Engineering (RICE), San Salvador, 2018, pp. 1-6. doi: 10.1109/RICE.2018.8509060"
17. Attangudi Perichiappan Perichappan, Kumar. (2018). Greedy Algorithm Based Deep Learning Strategy for User Behavior Prediction and Decision Making Support. Journal of Computer and Communications. 06. 45-53. 10.4236/jcc.2018.66004.
18. "S. Chandrasekaran, ""Contemplated Method for Predicting Disease by Deep Learning Approach Over Big Data,"" 2018 International Conference on Research in Intelligent and Computing in Engineering (RICE), San Salvador, 2018, pp. 1-5.
19. doi: 10.1109/RICE.2018.8509090"
20. "Sriramakrishnan Chandrasekaran; "A Collaborative Approach for Artificially Created Samples for Text Categorization for Advance Approach of SVM" -
21. Journal of Adv Research in Dynamical & Control Systems Volume 10 Issue 10 Page 25-32; http://jardcs.org/backissues/abstract.php?archiveid=6385"
22. U. S. Sekhar, G. Sasubilli and A. Z. Khurshudyan, "Computer model of point sources in control problems for heating bodies," 2018 International Conference on Computing, Mathematics and Engineering Technologies (iCoMET), Sukkur, 2018, pp. 1-5.doi: 10.1109/ICOMET.2018.8346361