An Overview of IoT in Employee Wellness in India

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Abstract : Internet of things is connecting simple physical devices used every day at home or at workplace, to computer based software or the internet to enhance economic benefits , reduce human effort and improve productivity. The devices would be embedded with sensors or actuators to enable this connectivity.(Source : Wikipedia).Smart technology and internet of things are in the forefront in transforming Global business. This would have a large impact on the future of business particularly in India. In India IOT is becoming robust since the Government of India has started the "Digital India Campaign". Annual report of "Vodafone" on IOT (2017-2018)mentions that the "percentage of companies with more than 5 lakhs connected devices active has doubles in the last 12 months". Study by Deloitte says that "the current number of IOT devices in India is around60 million and the number is going to increase to 1.9billion units by 2020. (Tina Gunaney ;2017). IOT has been implemented in sectors like Agriculture, manufacturing, retail ,automobiles etc.

This paper gives an overview of adoption of IOT in Employee wellness in India which is a key factor that would enhance efficiency and productivity. The study is based on secondary data which throws light on the how this is used in companies to ensure Employee wellness. The study also compiles the available data on the examples of devices, software, companies providing software support and the companies using the technology. The challenges in embracing IOT and the future prospects of this technology have also been discussed in this study.

Keywords: Internet of things , Employee wellness , IOT in India, safe workplace.

1. Introduction

Global level statistics says that there would be 50 to 200 billion connected devices by2020 (cited by Madhuri Singh 2017). "Consumers bought more than 45 million wearable devices and Fitness Trackers in 2015.Analysts expect the demand to grow annually in the global level by more than 45% through 2019,becoming one of the fastest growing technology markets."(Josh Bersin et al 2016). People in India buy smart wearables and other connected devices for their Personal use.

Industrial usage of wearables and smart devices have not developed in a full fledged manner in India. It is still in the infancy stage with respect to HRM particularly in Employee wellness aspects. The Government of India has proposed and started the digital India campaign which gives scope for expansion and growth of IOT in India. Indian business has adopted IOT in several sectors like Agriculture, retail , manufacturing ,automobile etc.

Internet of Things(IOT) :

Internet of things is connecting normal objects to the internet by embedded sensors, actuators ,connectors.etc. This enables data from the object to be transferred to another machine or computer based system for analysis and decision making. The devices that are being used now are smart wearables, fitness

bands , sensors in machinery , mobile apps etc. Adoption of internet of things would reduce human effort , simplify work and help collect accurate data. Using suitable Analytics, this data can be used for appropriate action. Machines can be made to communicate other machines and Human beings can be connected to machines.

Employee wellness:

Employee wellness is providing healthcare and a safe working environment for the workforce. A healthy and safe environment are key factors for the improvement of the efficiency of Employees. This enhances productivity which benefits the organisation and in turn the Employees also. Various Employee wellness Programmes are being organised by companies in order to ensure that a Employee feels happy and secure in his or her workplace.
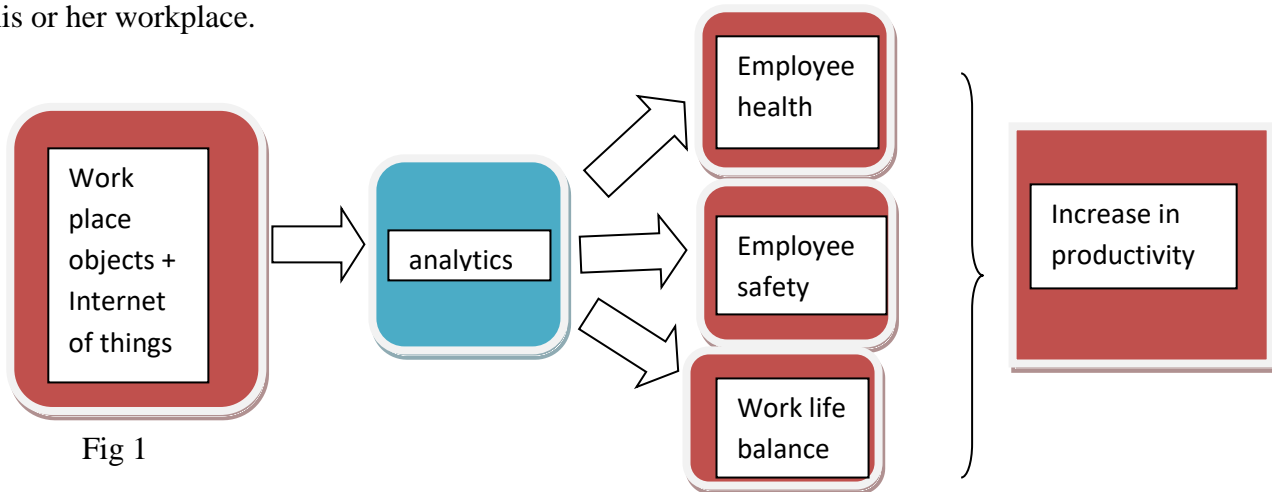

Fig 1

Connected objects can provide with accurate data for analysis which would improve Employee wellness.

2. Significance of the Study:

Employee wellness is vital to all organisations. When IOT is embraced by companies predictive and Proactive health and safety can be provided. Reacting after the occurrence of a disaster or a disease is futile. This has not been adopted by many Indian companies and not much research has been carried out in this area. So it is important to throw some light on the relationship between IOT and HRM. Hence this study has been carried out to give an overview of the current scenario of IOT in Employee wellness in India.

3. Statement Of The Problem

The study is based on secondary data which gives glimpses on the how this is used in companies to ensure Employee wellness. The study also compiles the available data on the examples of devices, software ,companies providing software support and the companies using the technology in India. The challenges in embracing IOT and the future prospects of this technology have also been discussed in this study.

4. Objective of the Study
  ➢ To give an overview of IOT in HRM specifically in Employee wellness.
  ➢ To study the adoption of IOT in India for Employee wellness.
  ➢ To reveal the challenges in implementation.
  ➢ To discuss the future Prospects.

5. Literature Review

Bill Cushard (2016) says that though IOT and HRM do not seem to gel, integrating thiese two aspects would bring enormous benefits to the Employees and HR manager should be Technology prepared for that. He mentions that a Company called " Target" has distributed "Fitbit" a fitness tracker to all its Employees to ensure they are hale and healthy.

Patrick Willer (2016) talks about some future prospects of IOT in HRM. He gives examples of Mobile phones and tablets , Health and fitness Trackers, Attendance and Location Trackers, Virtual and Augmented reality which can enhance Employer Employee connectivity , access to one's own data and analytics . He also says that the HR department should be ready to handle this huge data appropriately.

Joe Bersin et al (2016) have mentioned the" possible IOT applications in workplace". Controlling room temperature using sensors, illumination, sensing fatigue from voice tones are some of the aspects discussed in this study. The article also states that unless the benefits of IOT in HRM are explained to the Employees the implementation will not be successful.

Spaceti (2017) report mentions the study done by "Business in the community" states that there is a relationship between Employee mental and Physical health and good performance at workplace. IOT is a strategy to ensure this. The Report also mentions a study carried out by MIT Computer Scientist Sandy Pentland, by providing smart badges to monitor voice tone and conversations among employees which provided information on stress levels and communication.

Janet Aronica proposes the future prospects of an IOT workplace ,stating that prizes and incentives can be offered to employees who are able to stay fit by tracking their presence in gym, cafeteria and while walking. This can be got from the data of their frequency of visits and buying history.

6. Limitations of the study:

This study is a compilation and tabulation of already available information on IOT in Employee wellness in Indian Companies. Not many scholarly articles are available. Magazines, Journals and websites are used as reference for this study. So it would not be possible to come to a conclusion, on real time implementation and effectiveness of this technology on Employee wellness in Indian Industry. Limited to secondary data.

7. Research Methodology

The present research is based on secondary data .It analyses the available literature on Internet of things ,Internet of things in HRM and Implementation of IOT for Employee wellness Programmes. The information has been collected from websites , Journals ,Newspaper reports and blogs. Information has been compiled on Companies which have implemented IOT for Employee health ,safety and work life balance. Companies providing IOT support are also mentioned with the some details on their products.

IOT in Employee wellness – India

Company using the Technology	Description	Benefit	Result	Source
Infogain India	a)Mobile App to simplify attendance. Attendance gets recorded as the Employee enters the Premises b) Tracking availabitlity of meeting rooms. c) Tracking co workers	Data on absenteeism. Reason analysed. If due to sickness can be proactive. Avoids unnecessary movement in search of space and reduces exertion.	Employee Health Employee Health	Shalini Sengupta(2016) www.peoplematters.in
Kronos Inc	Check in and checkout using mobile phones from any place	Provides work life balance. Work from home system. Flexi timings.	Work life balance	Shalini Sengupta(2016) www.peoplematters.in
Citrix Systems	Simplify workflow through sensors in machines	Avoids fatigue due to manual work.	Employee Health	Shalini Sengupta(2016) www.peoplematters.in
L&T heavy engineering	Smart welding stations	Ensured Employee safety. Health hazards and disasters due to hot conditions in welding stations were avoided. Improved Productivity.	Employee Health and Safety	Saheli Sengupta (2017) www.cio.in
Tata Steel	Wearable smart watch	For locating and tracking crane workers at work to ensure safety	Employee safety	Megha Mandavia & Baizu Kailesh (2017) TechEconomic timesindia times.com
Tech Mahindra	Facial recognition Terminal for attendance marking. Summarizes facial expressions of all Employees.	Connected to "moodometer" to find out the Employees mood while they arrive at work and allocate work accordingly	Employee work life balance and health	Karunjit Singh (2018) TechEconomic timesindia times.com
Pepsico	Stepathon	For every 10000 steps walked seven free meals donated to world food programme	Employee health	Poonam Chopra (2018) www.peoplematters

Current Scenario in India

There are many companies like providing IOT support and solutions to Employee safety and health hazards in India.

- **IBM** provides with IBMWatson and IBM Worker insight for employee safety.
- **HCL** technologies has integrated with IBM to provide with Safety helmets and safety glasses. Safety helmets can be connected to smart badges which would alert people and their supervisors through a wireless system in the factory. Thus any disaster can be predicted and avoided.
- **Tata Communications** has safety solutions through their LORAWAN network , for Employees working at great heights , remote locations and also for preventing unauthorised access. Any discomfort felt by the employee while working at these places is instantly communicated by the sensor embedded system to the supervisor for immediate action. Smart wearables connected to analytics enable this communication when the employees suffer from sudden fever or increase in pulse rate and low blood pressure etc.
- **Start ups**. There are many start-ups creating innovative wearables in India like "Actofit "which is a fitness tracker , "Getactive" provides wellness calendar and for employee wellness programmes in corporates, "SenseGiz" for sensing fall or crash and "Goqii" which is a sleep tracker.

- **TVS Motor** uses IOT to reduce air Pollution Intel,Volkswagen, Hero MotoCorp, Hindustan Petroleum, Apollo Hospitals, Cisco, Bharti Infratel are some companies which have embraced IOT in domains other than HR.

Challenges

- People acquired in Human Resources should be well versed in connecting devices to the internet. They should have good knowledge of this Technology. The HR system should be the agile to absorb IOT. Other Employees in the organisation should have the knowledge to develop ideas or applications to connect devices to the internet based on their requirements and consequently enhance the existing welfare measures.(Madhuri Singh.2017). Ultimately HR should be Technology prepared.
- Employees have misconceptions on IOT .They feel it would compromise their Security and Privacy. Its upto the HR managers to explain the benefits of IOT in workplace which tracks them for their own health and safety. This would change the attitude of the Employees and they can work as a team to get this implemented.
- Network connections are very poor in India so technically this becomes a challenge.
- Small companies still do not have the skill set or sound finance to implement IOT.

8. Future Prospects and Extension to other aspects of HRM

Employee Safety

- Workstation cameras help in capturing the events 24x7 and the data is pushed to the cloud. Analysis of the data can predict employee fatigue in advance. These are especially useful in places where heavy machinery is involved.
- Trackers in the vehicles that the employees use to commute can help identify real time location and can be tracked with a mobile app. Text messages can be sent out in case of emergency. HR policy can mandate the trackers be fixed on all company vehicles used for commuting to office.

- HR policy can mandate the usage of trackers in clothing for people working in hazardous areas to track and monitor real time and provide help based on need.
- HR policies & contact list can be installed as an app on employees' smart phone and will be easy to access in case of emergencies

Employee Performance

- The performance data of employees can be encrypted pushed to the cloud and the rules can be set on the cloud in terms of identifying top layer, average, below average etc. without the need for human intervention. Individual awards can be based on this data and also the compensation and merit increase can be based on this analysis. You can easily find out who has been consistently doing well and who is at the bottom of the pyramid.

Employee Training

- Training is another aspect where the recent advancements can include AR/VR modules in training. The employees can take the sessions in their own desks and learn about all the new breakthroughs with the new gadgets and HR plays a key role in emphasizing the number of hours an employee should spend in training every year. HR should also use the data to understand how many internal transitions happen both horizontal and vertical.
- Based on the employee skills data, training data, experience data, suitable matches can be made for mentor/mentee relationship. Based on HR policy, the employee can be mentored suitably.

Work life Balance

- Usage of tools like Skype which enable video/audio calling helps employee to work from remote locations. HR remote work policy can be defined to help people connect from remote locations. The amount of time a person is logged on can be tracked and HR can use the data to help employees from burning out. If the number of hours logged in exceeds a certain number, HR will be automatically notified.
- HR policy can include benefits to subscribe to real time applications that monitor kids safety in school/play homes etc while the parents are at work.

Employee Health

- Presence or absence of Employee can be tracked and through this temperature and lighting can be appropriately increased or decreased automatically at work cabin or shop floor.

9. Suggestions

- Awareness should be created among HR managers on all the aspects of IOT, that can help in Employee wellness. They should update themselves with all the software platforms and devices available for this purpose.
- Employees have to be educated ,their misconception should be removed.
- HR should have new talent acquisition with IOT knowledge only then they can be technologically prepared for the changes that are happening in India with respect to connected devices.
- Suitable Data analytics support is vital to analyse the data accurately and take decisions in workplace changes.
- A foolproof security system should be in place to avoid data leakage and hacking ,if not this would lead to breach of Employee trust and would compromise Employee right to privacy.
- Big Corporates should collaborate with small companies and extend support for implementing IOT.

10.   Conclusion

Indian Government is taking various steps to implement IOT in all the sectors. The Government has formed a centre for excellence along with NASSCOM to improve the IOT ecosystem. In order to absorb this fast changing technology, Industries should be agile. Especially HR managers should have a broader outlook and their knowledge should encompasse, implementing IOT in all the activities of the organisation. They should have the proficiency to come up with innovative and indigenous ways of connecting devices which

would improve Employee wellness in the organisation. In India application of IOT in HRM has not seen much growth. But lots of potential and scope is there for future implementations of IOT for Employee safety and health. This would reduce the number deaths by accidents and disasters, by sensing them before hand. Embracing IOT will also make Employees fit , thereby reducing absenteeism due to sickness , leading to increase in productivity. Simplification of work , reduction of stress and exertion ,resulting in Employee wellness are the fruits of IOT.

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