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INTERNET of THINGS (IoT):SECURITY AND PRIVACY CONCERNS

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ABSTRACT

The Internet of Things(IoT) is a vision in which Internet outspreads into the real world espousal of daily objects. The objects no longer seems separated from the virtual world and can be controlled distantly. The term "Internet of Things" is devised from the two words "Internet" and "Things". The Internet is an interconnected computer networks that use the standard Internet. The word "Things" can be any object or person in real world from any electronic equipment to any non- electronic as well.The Internet of Things (IoT) represents the interconnection of several equipments such as smart devices and services. Presently, more than a billions of devices are connected to Internet, including PCs, embedded sensors, and mobile phones.This paper gives an overview, Architecture ,Application areas, security and privacy challenges in the Internet of Things.

KEYWORDS: Internet of Things, Security ,Privacy

INTRODUCTION

According to Gartner[1] ,a information technology research and advisory company, that 43 Percent of Organizations Are Using or Plan to Implement the Internet of Things in 2016.The Internet of Things (IoT) will move toward mainstream adoption in 2016 for many industries, according to the findings of a recent survey by Gartner, Inc. The online survey was conducted in November 2015 among Gartner Research Circle Members and included responses from 465 IT and business professionals spanning 18 business sectors in North America, EMEA, Asia/Pacific and Latin America. According to IDC [2]the market size of Internet of Things can be predicted till 2020 as shown in figure 1.
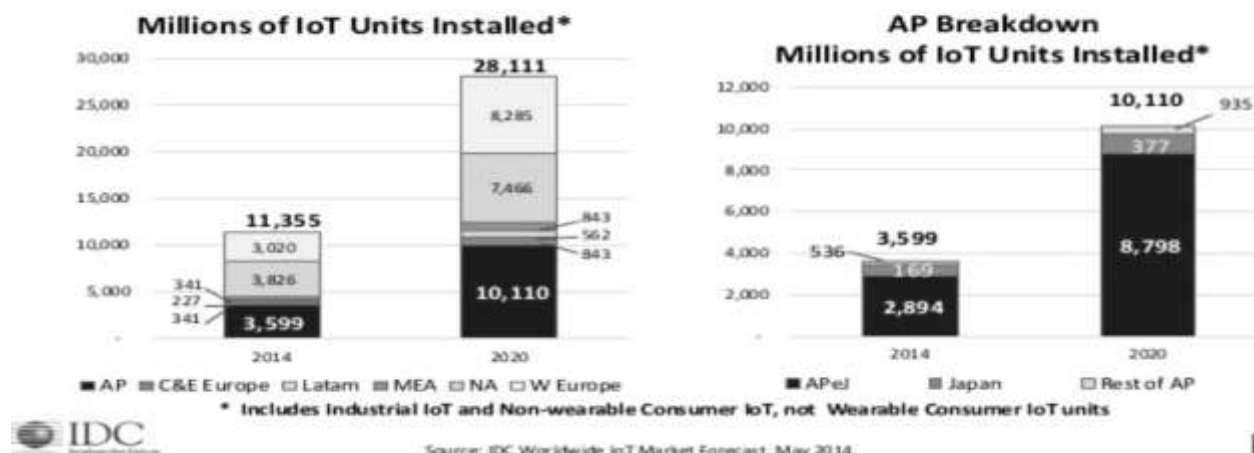

Figure 1: The Internet of Things Market Size[2]

As with the great potential of IoT, there are number of challenges[3] that come along. In tihis paper the security and privacy problems , which are among other numerous challenge in IoT is discussed.

INTERNET of THINGS (IoT) ARCHITECTURE

Internet of Things can be viewed as a 7 layered architecture.The layers can be grouped into 4 groups: Fog Computing, Cloud Computing, Big Data, and Business Value.

Figure 2: IoT Architecture[4]

Fog Computing	Fog computing, often referred to as edge computing, refers to the technologies and processes that occur outside of our clouds and datacenters, and are distributed across the user base. The user base can be made up of humans, machines, or objects with mobile devices, GPS technologies, sensors, or other technologies that can store and process data at its source.
Global Infrastructure	Many IoT applications require multiple datacenters dispersed globally that must be able to scale on demand. IoT is a classic use case for cloud computing and the pay-as-you-go-model.The Public cloud ,Private and hybrid cloud provides such solutions.
Big Data	Big data is data from those devices that is collected in real-time, near real-time, or batch, and brought into the virtual or physical datacenter.
Business Value	This category delivers the true value of IoT. When all the underlying technologies are abstracted and made it simple to build applications, great value can be derived from being able to react to real-time or near real-time events. This layer of applications and process changes can: save companies millions in preventive maintenance; increase revenue by optimizing business processes, throughput, and speed to market ; or develop a new business model to create a first-mover opportunity.

Figure 3: IoT Layer's group

SECURITY AND PRIVACY ISSUES IN IoT
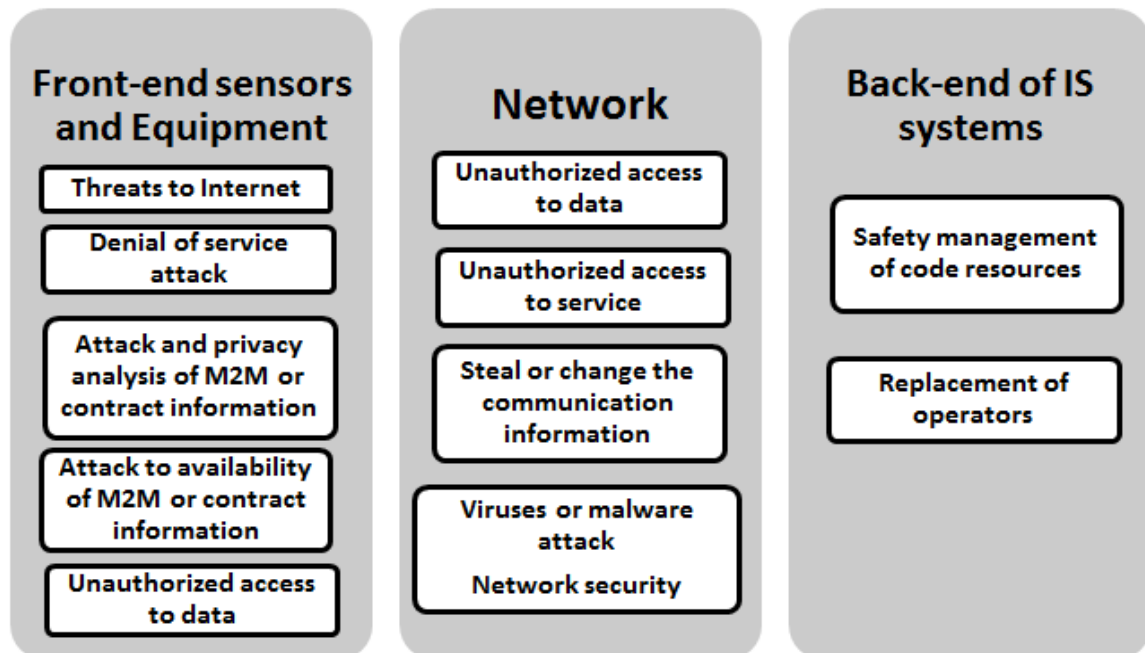The various threats in the security of IoT is as below [5.]:

Figure 4: Security threats in IoT

Privacy Issues

The privacy of users and their data protection have been identified as one of the important challenges which need to be addressed in the IoTs.[6]
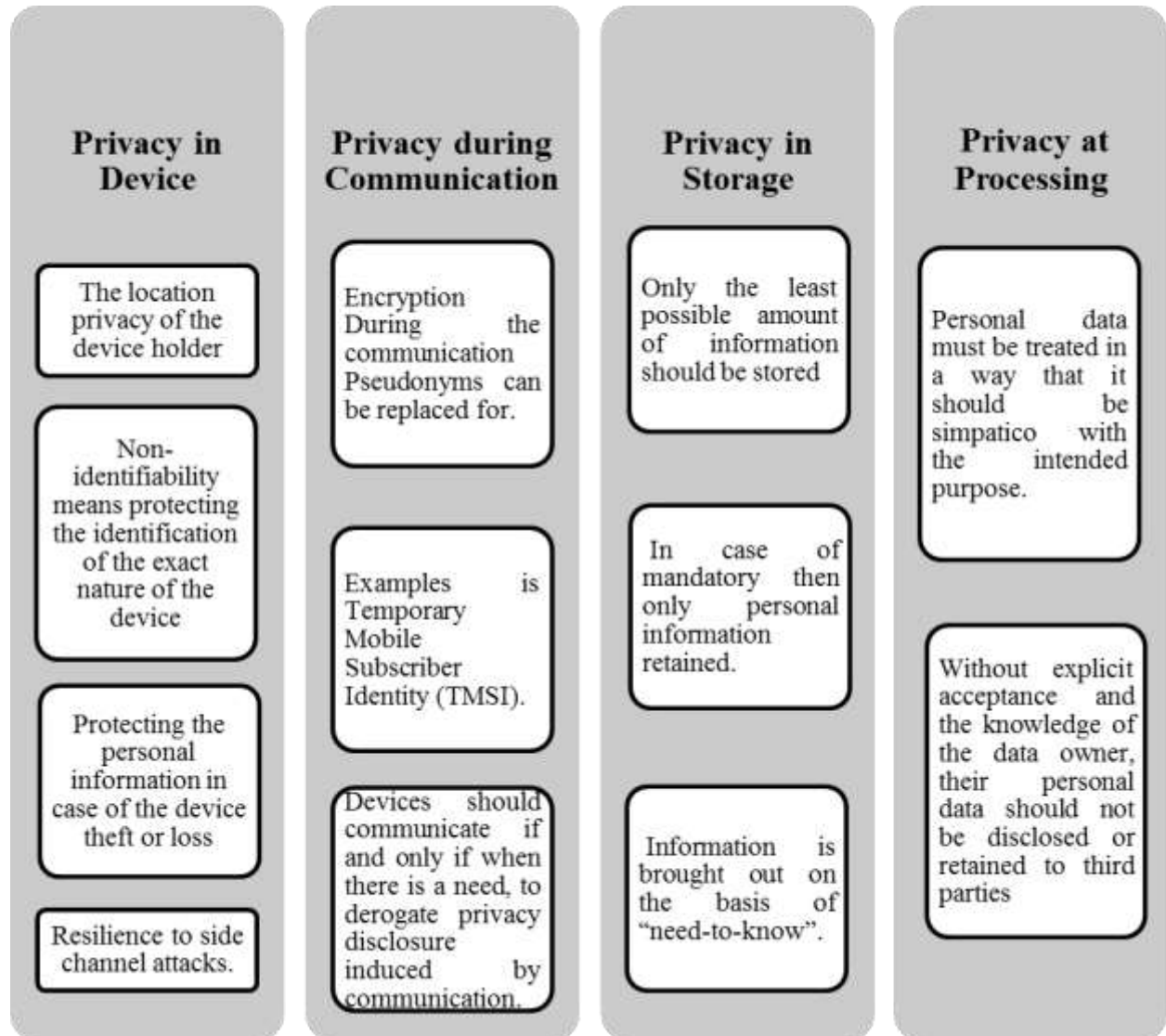

Figure 5: Privacy issues in IoT

CONCLUSION

The Internet of Things (IoT) has drawn huge vicissitudes in everyday life. The interconnection between people and communications of people has grown and between objects to objects from any location has been drawn-out . But with this growth,the security and privacy insinuations should be carefully considered. The protection of data and privacy of users has been identified as one of the key challenges in the IoT. This paper considers the architecture, security and privacy issues of Internet of Things in brief.

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