Chapter 38
Business Transaction Privacy and Security Issues in Near Field Communication

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ABSTRACT

The main objective of this chapter is to discuss various security threats and solution in business transactions. The basic working principle and theoretical background of near field communication (NFC) technology is discussed. A component of NFC communication section is to be discussed on various NFC operation modes and RFID tags. NFC technology is used in various fields such as electronic toll collection and e-payment collection for shopping. This device-to-device payment system is facing major security issues. This NFC communication data is transferred from one terminal to another terminal by using short-range radio frequency. Data hackers try to access this radio frequency and attack the business transaction. This hybrid encryption algorithm is used to solve business transaction data security issues. This chapter deals with both key encryption and data encryption processes.

INTRODUCTION

Near Field Communication is a wireless technology to establish a connection between device to device and device to tag. This is technically named as active communication and passive communication. This wireless communication is to create set of networking protocol between smart devices. The communication distance of NFC device is 4cm for each device, it's in and around 10cm to 20cm is a maximum distance of communication. The working principle of NFC is store the payment information in element chip that is named as SEID. This is short name of Secure Element Identifier. This SEID chip is inserted in smart device and NFC active device (Khan, 2016). The advantage of NFC device is contact less business payment transaction. The modern world all the business transaction is deal with digital currency. This digital currency is more secure and easy to handle with transaction. The currency is transformed

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in many structures, business transaction many customers using credit card or debit card payment. On the time introducing this credit or debit card banking will provide only common password for all transaction, but now banking service is more modernize, they provide one time password for every single transaction. This is the evaluation of any technology; the modern computer world is now transforms in smart device. The day to day life without this smart device can't do any work. The smart device is many devices, like smart phone, smart home and others. This major technology of this smart device is Internet of Things. The device is working the concept of Internet, without internet no use of this smart device. The major drawback of this NFC technology is only short distance communication, but alternate thinking security perspective this short distance communication is provide higher security compare to other communication protocol. The major part of working principle is Radio Frequency Indemnification (RFID). The NFC technology is developed by NXP semiconductors and Sony; previously it is named as Philips semiconductors. The technology is very old but modern applications are used in this technology. On the time of introducing android operating system it is not popular, but now more than 90% of smart phones used in this android OS. The reason of this usage is open source; it's used to reduce the overall selling cost. The business point of view the end user getting lesser cost compare to other operating system mobile. This short distance communication is developed in the form of NFC; this is a joint organization of Sony, Nokia and Philips. This technology is under research department in more than three year, in the year 2004 NFC forum is introduce public usage and feast this technology in common peoples.

SCOPE OF NFC TECHNOLOGY

The scope of this NFC device is less cost with fast communication. This communication protocol is providing higher security with short distance. The mobile phone transaction is playing a major role. The smart phone is a key concept of this NFC; this NFC is inserted in smart device and use for business transaction. The penetration of smart phone is unavoidable in this modern world (Falaki et al., 2010). The recent survey world population more than 35% of people used this smart phone technology. The growth of this smart phone is in the year 2016 nearly 2.1 billion users used this technology. They expected more than 2.5 billion users in the year 2019. The major usage of this smart phone is China; more than 565 million peoples used this smart phone. The second largest user of this smart phone is United States. The 223 million US peoples used this smart phone technology. This technology is formally accredited at ISO standard in the year of 2003. The purpose of this standard is to maintain some rules during wireless communication. After getting this ISO certificate the communication transfer rate is standardized with the range of 106Kbps, 212kbps and 424kbps. The technology is not a standard version; because any technology is need some latest updates, similar to that in the year 2005 the same accredited company will provide ISO/IEC 21481 standardization certificate. This accreditation is really useful for implement this technology in worldwide in short range of time. This NFC technology is not a used encryption mechanism; they use existing technology of RFID (Finkenzeller, 2010). The main aim of this RFID technology is to get data form tag and retrieve the same data in transceiver device, all this process is made with wireless communication. The purpose of this tag is used to store the information in the form of Non-Line-of-Sight storage. This method is used to easy to identify the object; here object in the form of people, animal, goods and location. The industry is commonly used to tracking their good in barcode technology, after coming this NFC tag method many companies used this technology, even some foreign courier transaction is also used this technology to track their parcel.