

# Chapter 10

## A Novel Approach Using Steganography and Cryptography in Business Intelligence

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### ABSTRACT

*In the information technology community, communication is a vital issue. And image transfer creates a major role in the communication of data through various insecure channels. Security concerns may forestall the direct sharing of information and how these different gatherings cooperatively direct data mining without penetrating information security presents a challenge. Cryptography includes changing over a message text into an unintelligible figure and steganography inserts message into a spread media and shroud its reality. Both these plans are successfully actualized in images. To facilitate a safer transfer of image, many cryptosystems have been proposed for the image encryption scheme. This chapter proposes an innovative image encryption method that is quicker than the current researches. The secret key is encrypted using an asymmetric cryptographic algorithm and it is embedded in the ciphered image using the LSB technique. Statistical analysis of the proposed approach shows that the researcher's approach is faster and has optimal accuracy.*

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## **1. INTRODUCTION**

The work in the business world has changed immensely in the past years. Computers and the internet is an essential tool in all business organizations. Clients can buy products over the internet. Meetings, Ticket bookings, hotel reservation, checking of stock prices, gaming, social networking and many other activities can be performed by using a Smartphone. Computers, information systems and telecommunications are the building blocks and facilities needed for these business models. But data plays a vital role to boost the usage of information systems, computers and communication. Organizations need an analysis of these data in their repositories to have an in-depth study on their business environment and competitiveness competence. The act of understanding precious intuition related to business data is called business intelligence. Personnel engaged in creating these insights are the function of a business analytic. This article utilizes the idea of business intelligence and how they bolster the utilization of business insights in security of e-business models (Aithal, P. S., 2016). Information created in online client transactions, be it deals, questions, criticism, look, or just perusing give the associations a likely abundance of data that could help fortify steadfastness for existing clients or make open doors for new leads. Information produced in inner databases kept up by associations could likewise be a wellspring of pertinent data to help associations in improving business activities and upgrade capacities and capabilities. Subsequently, in the time of the data age, organizations need to see their gathered information as a wellspring of serious advantage. Data mining (Gupta, M.K., Chandra, P., 2020) and text mining (Ritala, P. et al., 2020) are promising strategies to tackle the likely estimation of information found in organizations. The utilization of information mining and other information examination apparatuses produces helpful data or social capacities that encourage directors to settle on keen choices. The huge amount of confidential data has been transferred on the Internet. Information security turns out to be progressively significant for some applications, for instance, private transmission, video reconnaissance, military and clinical applications. Lately, there has been a ton of enthusiasm for steganography and steganalysis. Steganography is the craft of stowing away and sending information through evidently harmless transporters with an end goal to cover the presence of the information. The advanced picture information, for example, BMP, JPEG, and GIF are generally utilized as a transporter for steganography. Here the mystery message is implanted into a picture (or any media) called spread picture, and afterward sent to the collector who separates the mystery message from the spread message. In the wake of installing the mystery message, the spread picture is known as a stego picture. This picture ought not be recognizable from the spread picture, with the goal that the assailant can't find any inserted message. The reliability due to the change of shrouded information can be gotten by two different ways: encryption and steganography (Pramanik, S. et al, 2019, Pramanik, S. also, Raja, S. S., 2017). A blend of the two strategies can be utilized to build the information security. In encryption, the message is altered in a convincing manner so no information can be uncovered on the off chance that it is gotten by an assailant. While in steganography, the mystery message is inserted into a picture, frequently called spread picture, and afterward sent to the collector who removes the mystery message from the spread message. At the point when the mystery message is implanted into spread picture then it is known as a stego-picture. The perceivability of this picture ought not be recognizable from the spread picture, with the goal that it nearly gets outlandish for the aggressor to find any installed message. There are numerous methods for scrambling information, which fluctuate in their security, strength, execution, etc. Likewise, there are numerous ways for implanting a message into another. We use steganography to shroud information; cryptography is utilized to encode information. Steganography, can likewise be utilized with cryptography and the scrambled information

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