The Importance of Cyber Security for the Work of Travel and Tourism Companies in Iraq: An Applied Study in a Number of Travel and Tourism Companies in Baghdad

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ABSTRACT

Cyber security is a comprehensive term for all steps to defend data and information on all electronic devices connected to the Internet from malicious attacks, hacking, data theft, and sabotage. It is of great importance to every society and every country. Cyber security is important at the individual level in protecting personal data, photos, files, videos, personal accounts, passwords and bank accounts. And at the community level, cyber security is important at the individual level in protecting personal data, photos, files, videos, personal accounts, passwords, and bank accounts. And at the community level, in terms of protecting society from social engineering and targeting social behavior, collected data, and privacy of society. At the level of companies and institutions, in protecting electronic assets, data, information, employee data, servers and websites, the tourism sector is one of the sectors that should pay attention to cyber security applications with the development of tourism activity and its reliance on digital data and electronic programs to achieve its requirements. And we discussed this as an attempt to identify the importance of cyber security in the work of travel and tourism companies through a field study that included a number of travel and tourism companies in Baghdad governorate. The research concluded that there is an interest in providing cyber security requirements in the work of these companies through protection programs and training of employees

THE INTRODUCTION

There is a close relationship between technology and the tourism sector, and the matter does not depend on the use of a group of technological devices such as electronic computers, telexes and faxes, but extends to a complete system of electronic computers, technological means of communication and information networks, and the use of this system is not limited to one of the tourism sectors without others, but rather it is used by airlines, Hotels, tourism and travel companies, all tourism sectors must use modern information and communication technology to ensure their survival and maintain their competitive position

The connected electronic information network has become an integral part of our daily life, as all types of institutions such as medical, financial, educational and tourism institutions use this network to work effectively. The network is used by collecting, processing, storing and sharing large amounts of digital information. Therefore, protecting this information has become more vital to national and economic security

Cyber security plays a vital role in securing data such as (social media accounts, credit card numbers, cloud storage services, etc.) When the misuse of the Internet has become a current problem in various sectors of life, especially in social media, universities and government institutions, security and a sub-system of national security at the state level, is a system resulting from the continuous and planned increase of political, legal, economic, security, defense and educational awareness

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Research Problem

The whole world is witnessing a great technological and digital development that has led to the growth of the use of the Internet, technology and electronic transactions. This development is accompanied by a new type of danger resulting from the spread of digital attacks that can make major countries, companies, commercial and economic institutions threatened by information penetration.

Hence, the problem of the study arises in knowing the importance of applying cyber security requirements in the work of travel and tourism companies in Iraq

Research Importance

The tourism industry is witnessing rapid and remarkable development in the use of digital technology and the development of smart and electronic tourism, which has become the dominant feature in the tourism sector in recent years, which leads to the emergence of many challenges facing the parties to the tourism industry in digital transformation, obtaining a larger market share and achieving comparative and competitive advantages With the aim of achieving sustainability in tourism growth, which led to more risks represented by cyber attacks in their various forms, which threaten the survival and continuity of tourism and hotel facilities, including travel and tourism companies, and this requires the managers of travel and tourism companies to familiarize themselves with the various tools and techniques of cyber security to reduce the cyber risks that may threaten work systems in their companies

Search Target

The research aims to achieve the following

1- Learn about cyberspace and cyber security
2- Knowing the objectives of cyber security in the tourism sector
3- Knowing how travel and tourism companies secure their work from the dangers of electronic attacks

THE FIRST TOPIC: CYBER SECURITY

First: Definition of Cyberspace and Cyber Security

The word Cyber is derived from Cybernetic and its origin is Greek and means direction and control '1'. The American mathematician (Norbert Wiener) is the first to use the term cyber in 1948, while studying the subject of command, control and communication in the animal world, as well as the field of mechanical engineering. He defined it as "the scientific study of controlling organisms and machines and the mechanism of communication between them '2' . The Dictionary of Information Security Terms defines the term cyber as "an attack through cyberspace that aims to control websites or electronically protected structures to disable, destroy or damage them '3'." According to the Australian Center for Cyber Security, the term cyber was defined as "any circumstance or event that is likely to cause systems or information, and this indicates cyber threats '4'

Cyberspace consists of various networked computer systems and integrated telecommunications systems. Cyberspace has become one of the features of modern society, which works to enhance and enable rapid communication, distributed command and control systems, storage and transmission of data in huge quantities and a group of widely distributed systems such as various applications (such as What's App , Face book, and other hundreds of applications), and all services. Which you implement such as money transfer via the Internet, online purchases, and thousands of other services in all areas of life worldwide

The US National Institute of Standards and Technology (NIST) defines cyberspace as "the interconnected network of information technology infrastructures, which includes the Internet, telecommunications networks, computer systems, embedded processors, and control devices '5'

The French Agency for the Security of Information Systems (ANSSI) defines cyberspace as: "the space of communication formed through the global interconnection of equipment for automatic processing of digital data." It is a modern interactive environment, which includes elements Physical and intangible, consisting of a group of digital devices, network systems, software, and users, whether operators or users.'6'

And cyberspace consists of the physical networks that make up the Internet, such as cables, network devices, servers, and any tangible physical devices, and it is called the (Physical Layer), i.e. the physical aspect of cyberspace, and cyberspace also consists of software and electronic services on these devices and networks, which are Things that are not tangible, but you can deal with them, such as programs and applications, and it is called the Logical Layer, and another layer is added to this layer, which is the data in cyberspace '7'

As for cyber security, it has been defined as "the activity, process, capability, capability, or condition by which information and communication systems and the information contained therein are protected from and/or defended against harm or Unauthorized use or modification. Cyber security also represents the security of networks and information systems, data, information, and devices connected to the Internet. Accordingly, it is the field that is related to procedures, standards, and protection standards. It must be taken or adhered to in order to confront threats, prevent infringements, or limit their effects in the worst and worst cases, and this security is closely linked to information security. Access to information and work on its transmission, viewing and trading with it, or distorting and exploiting it, is what often stands behind attacks on networks and on the Internet '8'.

As for cyber security in the field of tourism, it is the security of information and spatial and descriptive databases through the Internet space from any illegal entry that leads to a change in the structure and structure of digital tourism reservation systems, data of tourist and hotel establishments, their communication systems, and the infrastructure of communication systems between all parties to the modern tourism industry.

Cyber security can be considered as the practice of defending computers, servers, mobile devices, electronic systems, networks and data against hacking attacks of all kinds. The global cyber threat is evolving at a rapid pace with the number of data breaches increasing every year.

Second: Objectives of cyber security in the tourism sector

Cyber security is based on achieving the three basic objectives (confidentiality, safety, and availability) '9' . As for tourism, the objectives of cyber security are

1- Take the necessary measures to protect tourism and tourism facilities from potential risks in the various uses of the Internet
2- Enhancing the protection of data confidentiality and privacy for tourists within the digital databases of airlines, hotels and tourist offices.
3- Enhancing and protecting the operational programs and the data they contain related to the marketing of tourist sites and facilities, to prevent access to them in violation of the law.
4- Protecting communication and information networks, computer systems and integrated systems with the aim of achieving cyber security

Third: the importance of cyber security

The importance of cyber security lies in the following points '10' :

1- Protect sensitive information from theft

Cyber security protects all sensitive information and data from theft, including personal information, government information, intellectual property information, protected health information (PHI), and personally identifiable information (PII). Cyber security helps to repel theft attacks using electronic defense programs, prevent the possibility of unauthorized use of information and cause damage, and prevent extortion attempts that harm the individual. It also preserves the community entity by protecting its information related to financial services, hospitals, other health care institutions, and power stations. , and others.

2- Addressing viruses and malware

Cybersecurity helps protect organizations and companies from malicious software attacks that aim to defraud, phish, steal personal data and intellectual property, and cause irreparable damage to companies, such as ransomware.

Cyber security protects computer systems from viruses that spread widely, and lead to very serious problems, such as damaging files and data inside them, and damaging computer systems, and this leads to great damage to businesses that depend on these systems.

26

3- Defending information against data breach attacks

Cyber security helps companies and organizations protect and defend them against data breach attacks, as organizations and companies are an easy target for cybercriminals, because of their use of cloud services, and for storing their personal and sensitive information, and most cloud services, especially those with poor configuration, are the target of attacks by many sophisticated cybercriminals.

4- Reducing electronic crimes

Cyber security helps reduce cybercrime activities, which will increase dramatically and rapidly with the passage of time due to the massive technological development, which connects a large number of connected devices with the world's network.

5- Saving funds for companies and institutions

Cyber security saves companies and organizations large sums of money, as breach attacks have sharply increased financial information, intellectual property information, health records, and commercial data, as the average cost of combating these crimes for an organization is about $13 million, so it is preferable to pay a small amount for cyber security To protect information against these crimes and their exorbitant cost.

6- Web sites gain credibility

Cyber security protects electronic platforms over the Internet, such as websites, from the risks of electronic attacks, which cause difficulty in accessing these sites, and this leads to great damage to their reputation, so cyber security enhances the credibility of accessing these sites, and protects customers from any cybercriminals

Ensuring the application of cyber security in the country leads to achieving a reliable cyberspace, by securing the important information and communication infrastructure, as follows '11':

A- The protection of national cyberspace is a system that operates conceptually, in a coordinated manner, efficiently, effectively and on a legal basis.

b- Cyber security works to systematically increase security awareness of all components of society.

C - Active participation of both the private and academic sectors as well as civil society in the formulation and implementation of cyber security policy.

d- Providing effective cooperation at the national and international levels for the application of cyber security.

e- Adopt adequate measures to respect the protection of privacy, human rights and fundamental freedoms.

Fourth: Types of attackers

Electronic attacks or (cyber attacks) meant an attack launched from one computer or a group of devices on another computer or several computers or networks. Electronic attacks (cyber attacks) can be divided into two main types as follows '12':

- The first: Attacks whose aim is to disable the target computer
- The second: attacks aimed at accessing the target computer's data and perhaps obtaining the privileges of the person responsible for it .

Attackers are individuals or groups trying to exploit vulnerabilities in computer systems and programs for personal or financial gain. Attackers are interested in everything from credit cards, product designs, and anything of value . Attackers are divided into '13'

1- Hobbyists - these people are sometimes called script kiddies. They usually have little or no skills, and often use existing tools or instructions on a computer Internet to launch attacks. Some of them do it out of curiosity, while others try to show off their skills and cause damage. They may use basic tools, but the results can still be devastating.

2- Hackers - They are a group of attackers who break into computers or networks to reach their goal. Depending on the purpose of the intrusion, these attackers are classified as white, gray or black hats

a- White hat attacker's break into networks or computer systems to discover vulnerabilities so that the security of these systems can be improved. This procedure is done with prior permission and any results are reported to the owner.

b- Black hat attackers exploit any vulnerability for illegitimate personal, financial or political gain

C- Gray hat hackers publish facts about the vulnerability in corporate systems on the Internet so that other attackers can exploit it.

3- Organized Hackers – These hackers are organizations of cybercriminals, hackers, terrorists, and state-backed hackers. Cybercriminals are usually a group of professional criminals focused on control, power, and wealth. These hackers are highly sophisticated and organized, and may even provide cybercrime as a service to other criminals. State-sponsored attackers collect intelligence or perform acts of sabotage on behalf of their government. These attackers are usually highly trained and well funded, and their attacks are focused on specific targets that benefit their government.

Fifth: Types of cyber security '14'

The term applies to a variety of contexts, from business to mobile computing, and can generally be divided into several common categories as follows:

1- Network security: It is the practice of securing a computer network from intrusive and opportunistic elements, whether targeted attackers or malicious software.
2- Application Security: Focuses on keeping programs and devices free from threats, as a compromised application can provide access to data designed to protect, and the application of a successful security concept begins in the initial design stage before the program or device is deployed.
3- Information Security: Protects the integrity and privacy of data, whether in storage or transmission

Sixth: Cyber security tools to protect against electronic attacks '15'

1- Firewall: It mainly contributes to preventing any unauthorized access to the system, and it is defined as a program that separates between trusted areas in computer networks and is a dedicated tool or program on another computer that in turn monitors the processes that pass through the network and rejects Or only programs are allowed to pass according to certain rules, and it consists of four types.
2- Antivirus programs are programs used to detect malicious software such as computer worms and Trojan horses in order to prevent them from harming the computer or stealing personal data by removing or destroying them. Modern anti-virus programs provide useful preventive measures, such as isolating and removing potential threats. Anti-virus programs vary according to the nature of the business
3- Public Key Infrastructure Services (PKI) Public Key Infrastructure is the arrangements by which the public key is associated with the user by the Certificate Authority CA. The identity of the user must be unique for each certificate issuer. This is done by special software in The issuer of the certificate, this could be human-supervised software, along with coordinated software in different and far-flung locations.
4- Penetration test, which is a program that attempts to simulate the type of attack that the company might face from hackers, starting from password hacking, code injection, and even phishing, for the purpose of verifying potential vulnerabilities.
5- Training employees, as the presence of employees who are aware of the dangers of electronic attacks and understand their role in cyber security is one of the strongest forms of defense against electronic attacks.

THE SECOND TOPIC: TRAVEL AND TOURISM COMPANIES

First: Definition of travel and tourism company and travel and tourism agency

The development of societies in all fields witnessed a remarkable rise in the movement of tourism and travel, and this led to the urban and cultural development of countries, so hotels were established and means of transportation developed, as well as the development of tourist attractions, and the need became urgent for an organizer of the process of transport and accommodation for travelers and the provision of food and drink, which leads to This regulator has a role in providing and securing this business. Hence, tourism and travel offices and companies were established, and travel agencies emerged that carry out travel-related business and services and provide comfort and reassurance to tourists during travel, visits and

residence. Tourism companies are one of the important departments in the tourism sector, as they are concerned with credibility when transmitting tourist information and the diversity of their operations, and this is what distinguishes them from other companies. They are also concerned with various operations and a distinctive form of the production process '16' .

The company is generally defined as the agreement of two or more persons to unite their endeavors and funds in order to achieve a profit, as is meant by the "institution" or "organization" that results from this agreement. As for the tourism company, it is the mediator between the owners and suppliers of various tourism services (hotels, other accommodations, means of transportation, and tourist facilities) and the consumers of those services, who are tourists '17' . Or it is a company that organizes or markets comprehensive trips, provides special services for trips, and issues travelers checks'18'.

As for tourism agencies and tour operators, they play a major role in stimulating the tourism movement by selling tourism services, which affects the support of the national economy of countries, and this has a positive impact in supporting other economic activities in various sectors, such as accommodation services, food and drink, transportation and other tourism services that They are sold by travel agents and tour operators'19'

A travel and tourism agency is defined as the place where a person can obtain information or technical advice and make the necessary arrangements to travel by land, air and sea to any place. The agency often includes a small number of employees, ranging between 2-12 people.'20'. The main difference between tour company and travel agents is that the tour company is the party that is actually responsible for planning the trip or tour while the travel agent is the person who is involved in selling the tour. Assistance in selecting the flight that best suits the customer's needs

Second: The tasks of the travel and tourism company

Tourism companies and travel agencies play an important role in the field of activity related to the tourist trip, as well as they represent many suppliers of tourism services such as airlines, hotels, shipping lines, tour operators, in addition to car rental agencies. Tourist travel agencies are consulting offices for clients in the field of travel and tourism'21'. Most tourism companies either sell tourism programs through travel agencies according to a specific percentage of the commission, or the company itself sells the programs to the public (expected tourists) by itself, as well as acting as a travel agent'22'.

Tour operators collect the elements of tourism programs and organize them in the form of a trip or a set of tourism services at predetermined times and areas. Tour operators are present in the tourism exporting countries and are responsible for marketing and publicizing the tourism programs they prepare '23'. As for the business of tourism companies '24'

1- Preparing, organizing and arranging tourism programs.
2- Providing consultations, advice and guidance about travel and its services.
3- Selling integrated and organized tourist trips.
4- Providing group reservations, whether for tourist transport, accommodation facilities, or restaurants.
5- It deals with problems and crises during the trip. The tourism company is a mediator between the tourist and the country he wants to go to. It does this in exchange for a sum of money, and each country has its own amount.
6- The responsibility of the tourism company is the safety of customers, so that their trip will be completed well.

Third: Types of travel and tourism companies

There are many patterns and forms of tourism companies according to the purpose of their establishment. There is no clear or explicit classification that can lead to a well-defined administrative structure, and it cannot be managed successfully except with a good knowledge of the various services that tourism companies can provide that cannot be counted. Here we can review some patterns The popularity of travel agencies as a reference is variable and often overlapping '25'

1- Tourism program organizers

These are the giant tourism companies that have the ability to negotiate either with service providers such as airlines, hotel companies, and car rental companies to obtain undisclosed prices, or negotiate with global reservation systems companies such as Amadeus, Galileo Travel port, or the Saber business network, and obtain the highest return from the odds on the number of flights sold by the system. This type works on collecting the elements of the comprehensive trip, Tour Packages, after determining the cost price and adding the Mark-up profit, and reselling them either to the customer audience or to retail travel agencies.

2- Retail Travel Agencies

They are medium-sized tourism companies that sell directly to customers, usually their owners are families. This type of company is one of the most important companies affected by the changes in the business environment of tourism companies. This type is the main driver of the economics of the travel and tourism industry.

3- Tour Operators

They are the companies that implement and supervise the trip or part of it. This role can be played by affiliated individuals, whether for tour wholesalers, retail travel agencies, or tourism companies specialized in this role only.

4- Travel Service Providers

They are the companies that operate means of land, sea, air and river transportation to transport tourists. These companies are distinguished by specializing in the activity, which is tourist transport, which helps them to provide a distinguished level of service. These companies are also distinguished by the low percentage of the paid-up capital upon the establishment of the company.

Airlines are of great importance within any Arab or foreign country, as they provide travel services, which provides hard currency for the country in which they are located and contributes to a significant increase in the number of arrivals, so there are a number of airlines in Iraq that provide services to travelers to the fullest and at the highest level. of quality, and among the most prominent of these companies that travel and tourism companies deal with '26'.

1- Fly Erbil Airlines in Iraq

Fly Erbil was established in 2015 and over recent years it has been able to reach the list of the best airlines in Iraq through the quality of its services and the discounted airline ticket prices it offers to travelers, and the company has more than 20 destinations around the world to help you travel to many Arab countries And the foreign level of safety is unparalleled.

2- Iraqi Airways Company for flying in Iraq

Iraqi Airways is one of the oldest airlines in Iraq, dating back to its founding in 1945. The company has many advantages that make it the perfect choice for travelers around the world, and one of its most prominent features is that it covers more than 38 travel destinations around the world, providing travel amenities For long distances, it includes a number of professional employees in dealing with travelers of different nationalities, and the company provides the possibility of booking airline tickets directly through the Internet.

3- Fly Dubai Airlines in Iraq

Fly Dubai is headquartered in the United Arab Emirates, and it also has a headquarters in Iraq, which helped it become one of the most important airlines in Iraq due to its convenient travel and transportation services around more than 90 destinations around the world. Iraq has more than 49 Boeing aircraft, and it is one of the most suitable companies for different categories.

4- Fly Baghdad Airlines in Iraq

Fly Baghdad is an independent, private Iraqi company established by some Iraqi businessmen specialized in the field of air travel from Iraq to the countries of the world, founded on 15-1-2014. It started its first flight on 15/7/2015.

Fly Baghdad is the first company to use the latest technology in Iraq, under the slogan (lower price… more travel). 2017, when Fly Baghdad started its official journey on the fourteenth of February of the same year. It is the first Iraqi airline to obtain an IOSA air safety audit certificate, and thus it will be a member of the International Air Transport Association (IATA), as of 22/2/2022 '27'.

5- Qatar Airways Company in Iraq

Qatar Airways Police is the only company with a 5-star rating in the Middle East, and this is what made it one of the best airlines in Iraq and Qatar. The company was founded in 1994 and has been able for more than 25 years to prove its worth in deserving the trust of customers to enjoy an ideal travel trip. The company provides More than 150 travel destinations

for its customers around the world. Qatar Airways departs from being just an airline, as it offers a range of entertainment services during travel that take you to another world, such as providing cartoons and cinema for children to enjoy the trip, in addition to providing places for infants and people with special needs to bear the hardship of traveling for long periods.

6- Turkish Airlines Company in Iraq

Turkish Airlines was established in 1933 and is headquartered in Turkey. The company has more than 315 airline interfaces, headed by Iraq. The company relies on international safety standards, which made it among the best airlines in Iraq and the whole world. The company is distinguished by its ability to provide many different travel dates which suits the largest number of travelers from different countries of the world, the company has received high ratings from customers that made it win many international awards as one of the best airlines in the world.

7- Iran Air Company in Iraq

Iran Air was established in Iraq in 1944 to occupy a great position among the airlines in Iraq. It has more than 60 destinations for travel around the world, in addition to that it has many offices around the world especially Iraq.

Fourth: the importance of electronic programs in the work of travel and tourism companies

With the expansion of the dependence of various sectors and commercial activities on computer applications and mobile phones, the use of technology in the tourism sector has become essential, and travel, tourism and air transport rank second in the world in terms of the most sold commodities via the Internet '28' . Owning electronic systems in the travel and tourism company gives customers the opportunity to experience amazing travel because it provides users

1- Reserving airline tickets online without the need to go to the airline headquarters, with the ability to search for the best prices available in different companies.
2- Providing an easy-to-use guide for tourist trips and safari trips, providing maps of tourist places and various attractions in all countries of the world, and knowing their working and closing times.
3- Providing answers to all questions and inquiries through the application of tourism companies will be easier and you will not need much time to respond to them.

Fifth: Electronic risks facing travel and tourism companies

In 2017, the British Travel Business Group (APTB British), which is one of the largest tourism organizations interested in tourism and travel in the United Kingdom, was exposed to the threat of cyber attacks on its technical systems. To pay huge sums of money to fix system deficiencies and apologize to customers'29'

The electronic penetration of any company leads to a large and direct threat to many personal data of customers, a process that would spoil the customer's relationship with this company and thus expose the company to the risk of collapse if customers decide to stop cooperating with it because of this breach or violation.

The hacker (or a group of hackers) sabotages the company's website by publishing incorrect information and spoiling the reputation of the company that took several years to build. Hackers can also take down the company's website, which leads to the company losing revenue and the company looks unreliable and may lose its credibility. Also, if The company's website has been hacked, it may lead to confidential documents leaked, trade secrets revealed and stolen intellectual property. The loss of all this information may hinder the company's growth and expansion

One of the methods used by hackers is malware, which is a program that can be included in programs and files that are published on the Internet, and it may contain viruses, which is a malicious program that is self-replicating, or spyware, which spies on the company's activity when using the device, or ransomware, which prevents The user accesses the data and files saved on the device, and asks him to pay sums of money in order to edit the information, otherwise it will be deleted.

There are some technologies that allow its users to remotely control vital systems connected to the Internet, which is what is called (the Internet of Things), through which the attacker can disrupt the movement of airports or sea navigation ports and change the route of flights

THE FOURTH TOPIC: APPLIED STUDY

To learn about the importance of cyber security in the work of travel and tourism companies, a questionnaire was organized, which is one of the scientific research tools that are widely used in human, social and administrative research and studies. The questionnaire is usually conducted by setting a number of questions by the researcher in a coherent manner through which he seeks to reach the goal of conducting the research. The questionnaire included a set of general and specific questions.

The questionnaire questions dealt with some points that the researcher believes show the extent of the interest of the management of travel and tourism companies in cyber security and the adoption of its applications within its activities.

First: The research hypothesis

The research was based on the basic hypothesis (travel and tourism companies are interested in providing cyber security requirements).

By testing the following sub-hypotheses

    1- Cyber security is available through the availability of virus protection programs

    2- Cyber security is available through training employees on cyber security applications

Second: The research community and sample

The study population represents the travel and tourism companies operating in the province of Baghdad, and a random sample of these companies was adopted in the Karkh and Rusafa sides, where the questionnaire was filled out by the managers of the (30) companies.

Third: The statistical measures used

For the purpose of statistical analysis of the results of the questionnaire, the percentage was used. As for testing the research hypotheses, the χ^2 (chi square) test was adopted, which is a statistical test that is applied to study the relationship between two variables to see if there is a relationship between the two variables or not.

Fourth: Tab the questionnaire data

    1-   The number of employees in the company and the number of computers

	1	2	3	4	5	6	7		Total
number of employees	---	8	5	8	5	2	2	30	
number of computers	6	11	6	1	3	2	1	30	

One of the most important foundations for the success of tourism companies is their possession of trained and qualified human resources to work in the tourism sector, which is characterized by reliance on the human element. Companies differ in the number of employees, due to the difference in the activity of these companies between organizing tourist trips or booking tickets through airlines. Travel and tourism companies depend increasingly on computers to improve service, satisfy tourists, and improve business operations. Through the questionnaire, it was found that most travel and tourism companies rely on computers to carry out their work, and the number of computers is proportional to the number of employees. Through the questionnaire, it was found that 20% of companies have one computer. Only 33% of companies rely on two computers in their work.

    2- The presence of an employee specialized in computer science

There is a computer specialist	Yes	No	Total
	28	2	30

High-capacity human resources, skilled in technological performance, as well as enjoying high experience in management and dynamism give a strong impetus to penetration into the market, and we find that 93.3% of companies have a computer-savvy employee

3-Types of electronic programs used *

Types of programs	Number
Amadeus	4
Fly Baghdad	13
Calillo	7
Iraqi Airways	7
Middle East	2
Iran Airlines	1
Turkish Airlines	4

The Iraqi tourism companies operate in three main directions: issuing travel tickets, obtaining entry visas for those wishing to travel, organizing tourist groups and preparing tourism programs inside or outside Iraq. Therefore, the basis of their work is communication with airlines to secure reservations for their customers, as we find that 43.3% of companies Dealing with reservations with Fly Baghdad Company, while dealing with Iraqi Airways and booking with the Galileo system represented 23.3% for each of them.

4- Means of communication with the company's clients and tourism service providers *

The means of communication	Number
Email	19
WhatsApp	25
Instagram	7
Messenger	8
Fax	2
Dial	3

The spread of social networking sites has contributed to increasing the flexibility of the process of exchanging information and providing advice, warnings and instructions between individuals about tourist places, and the use of social media as a tool for promotion by tourism companies contributes to shaping the mental image of the tourism company and tourist places alike. Companies differ in the way of communicating with their customers, and dealing with the application of Whats App is the most common means of communication, at a rate of 83.3%, followed by the use of e-mail, 63.3%, followed by the rest of the applications. There are 3 companies that have adopted the telephone contact method to communicate with their customers

5- Types of protection programs used in computers

Types of protection programs	Number
Kaspersky	10
McAfee	2
Avira Antivirus	3
Bitdefender	2
Change access code monthly	1
There is no protection program	12
Total	30

With cybercriminals continuing to expand and develop their methods, which have become much more complex than before, it has become necessary for managers of travel and tourism companies to take care of the tools and services to

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* There are companies that use more than one reservation program
* Some companies use more than one way to communicate with customers

defend their companies' systems, and therefore the means of protecting electronic programs and computer systems vary. It is noted from the results of the questionnaire that 40% of the companies did not use computer protection programs, given that the electronic programs that are dealt with are secured by the original company, and therefore it is difficult to penetrate them from the branches. While the companies that use the protection program (Kaspersky) accounted for 33.3%, and there is one company that adopted the method of changing the access code monthly, as it considered that hacking the programs could be done through the employees themselves (internal penetration).

6- Interest in cyber security applications

Concern for cyber security	Yes	No	Total
	16	14	30

The importance of cybersecurity in tourism work and its responsibility to protect digital information related to tourism arises as a result of the increasing use of cloud computing and big data, in addition to artificial intelligence and social media, which has led to a doubling of the risk of electronic attacks on everything related to the tourism industry. There are active websites and applications in this field, which necessitated the managers of travel and tourism companies to pay attention to this issue, but through the questionnaire it was found that only 53.3% of the managers of travel companies are interested in the issue of cyber security, due to the lack of awareness of the importance of this issue in all fields, including tourism.

7- The company's work was exposed to electronic penetration

Presence of electronic penetration	Yes	No	Total
	3	27	30

Through the questionnaire questions and an interview with a number of managers of travel and tourism companies, it was found that these companies are rarely exposed to electronic penetration, due to the insurance of reservation programs by the airlines that are dealt with, where a user name and a password for each employee responsible for the reservation process are approved in these The companies and hacking cases that were flagged were due to an internal hack by employees that was intended to increase wages

8- Participation of the company's employees in cyber security courses

Participation in courses	Yes	No	Total
	5	25	30

The human resources working in the tourism companies need to develop their capabilities with a focus on training them in order to raise the technological efficiency, and the management of the companies must pay attention to continuous education and training in the fields of advanced technology in order to achieve the requirements of cyber security.

Fifth: Test the study hypothesis

For the purpose of testing the hypothesis of the study, the sub-hypotheses were tested using the chi-square test, as shown:

1- Testing the first sub-hypothesis (cyber security is available through the availability of virus protection programs) .The schedule observed to test this hypothesis was as follows:

The company is interested in cyber security / There are virus protection programs	Yes	No	Total
Yes	10	3	13
No	7	10	17
Total	17	13	30

By calculating the chi-square value, which amounted to (3.73) and comparing it with the tabular chi-square value with a degree of freedom (1) and with a significant level (0.05) of (3.84), the calculated chi-square value is smaller than the tabular chi-square value, and therefore there are no significant differences, and the sub-hypothesis is accepted The first is cyber security through the availability of virus protection programs.

2-   Testing the second sub-hypothesis (Cyber security is available through training workers on cyber security applications) The schedule observed to test this hypothesis was as follows:

The company is interested in cyber security / The company is interested in training employees	Yes	No	Total
Yes	4	1	5
No	10	15	25
Total	14	16	30

By calculating the chi-square value, which amounted to (2.79), and comparing it to the tabular chi-square value with a degree of freedom (1) and a significant level (0.05) of (3.84), the calculated chi-square value is less than the tabular one, and the differences are not significant. The second sub-hypothesis is accepted, and security is available. Cyber through training employees on cyber security applications.

By accepting the sub-hypotheses, the main hypothesis is accepted, and there is interest from travel and tourism companies to provide cybersecurity requirements.

CONCLUSIONS

1-   Cyber security is a branch of technology whose role is to protect existing systems, data, communications and networks connected to the Internet against digital attacks. These attacks, commonly referred to as "cyber-attacks", are nothing more than an attempt to hack, modify, disable, access or use illegally, and thus cyber-attacks can range from installing malicious code on a personal computer to attempting to destroy the infrastructure of entire countries.

2-   The tourism industry is considered one of the most developed and growing economic sectors in the field of electronic commerce compared to other economic sectors. Securing the electronic information policy in both its descriptive and spatial parts, securing digital networks, and providing possible tools and means for the sustainable preservation of digital databases; In order to achieve competitive and comparative advantages for all parties to the modern tourism industry.

3-   Travel and tourism companies in Iraq need to understand the importance of cyber security for their work, due to the failure of the competent authorities to raise awareness of the concept of cyber security and its role in modern life.

4-   Through the field study, it was found that most of the travel and tourism companies depend on the computer in carrying out their work, and the number of computers is proportional to the number of employees.

5-   Most travel and tourism companies depend on securing their electronic reservation programs on the protection systems of the airlines that they deal with

6-   Most travel and tourism companies did not pay attention to training employees on cyber security applications

RECOMMENDATIONS

1- Adopting a cyber security system to identify the internal and external risks that the company may face.
2- Enhancing the information culture in the field of cyber security among the company's employees by participating in continuous training courses
3- Immunizing the company's computer systems with the latest advanced programs to protect them from any piracy or cyber attacks
4- Creating a structural structure in the electronic system of the company, which guarantees the powers and tasks of each employee in it so that there is no overlap in the tasks
5- Periodically examining the company's databases to identify defects and weaknesses and address them.

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