



**University College London**  
Department of Information Studies

# **Business report**

**Module leader:**

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**Information Governance**

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# 1. Executive Summary

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Your company rely on information systems to support all of your critical business processes. In order to properly adress this issue, I have identified in the supplied risk register,that this dependence may lead to the risk of (1) digital security threats such as hacking, data loss, confidentiality breaches or even terrorism (Giesler, 2019) and (2) physical security threats such as information loss, physical damage and deterioration. These increasingly sophisticated attacks can come from individuals, private organizations or even foreign intelligence services (Ullrich, et al., 2012), (Negrete-Pincetic, et al., 2009). If these attacks lead to the loss of information, the theft of confidential data, or damage to critical systems and documents. You can suffer severe injuries, including financial consequences and damage to reputation, as 1 minute of server downtime can cost you up to £7000 (Topi & Tucker, 2014), (Galligan, 2016). Therefore, I examined the Risk register to protect all your systems and procedures that contain essential data. Customer files are the most critical asset in your company and thus, the most vulnerable. As demonstrated in the supplied risk register, the likelihood of uncontrolled external threats to your Customer files is the highest. However, if the maximum effort is in place to manage risk, the likelihood threats lowered to its minimum.

## 2. Organization

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### 2.1. Introduction

Webdos is a newly founded company established in January 2019. Within 12 months, Webdos became one of the largest provider of web hosting services in the UK. Webdos has its private data centre, where only servers are located and is building a second data centre. Webdos is not afraid to invest in technology, innovation and research so that they can provide services to the broadest possible public. It is necessary to comply with the latest risk management standards. Webdos aims to deliver quick, secure domain registrations and web hosting services that make it easier to get your online presence. Technicians at Webdos have a wide variety of skills and are competent on several specific technological issues, which means looking beyond what hosting companies usually provide. Webdos agree that policies and regulations must adhere especially in the web-based world.

# 3. Supplied Risk Register Overview

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## 3. 1. Approach and structure

This Business report aims to advise your company of significant information risks which can be found in the offered risk register. Significant threats are those that pose a challenge to the systems, business models or sustainability of Webdos and its operating data centres (V. Benjamin, et al., 2015). This risk register represents those risks that matter the most, thus should have a risk treatment plan in place. As part of the Risk register, critical operational risks, strategic risk and market performance threats are outlined. The findings of this risk register shall be followed up.

### **The offered Risk register lays out:**

- The general risk policies and limits for all forms of information risk
- The general risk management and control guidelines
- Periodically reviews the risk policies and limitations

### **You shall mitigate significant risks that could expose long-term objectives, which demonstrated in the supplied risk register, such as:**

- Unauthorized access to the information system (internal & external)
- Malicious code attack
- Software/hardware errors, natural disasters, power outages
- Damage caused by a third party
- Breach of contractual relations
- Information loss, physical damage or deterioration
- Poor information management
- Disclosure of information
- Network user attack (internal employee)
- Failure to exploit business information
- Inaccurate information

### **Individual risks and their impact are represented in the following Risk level categories:**

- Impact
- Likelihood
- Risk score
- Evaluation

## 3. 2. ISO 27001

Risk is about the “impact of uncertainty on goals,” and if you know how to handle uncertainty, you can effectively reduce the risk in your company. In terms of the ISO 27001 standard, this ensures that information can be easily secured and used to help an organisation achieve its objectives. Through consistently defining, reviewing, assessing and handling a detailed list of related risks, undesired circumstances can be avoided, and negative impacts reduced (ISO, 2020). As you can see in Figure 1, by identifying and applying risk reduction, you can effectively find out about possible problems before they happen. In other words, ISO 27001 risk reduction is a reminder: better safe than sorry.

### Information assets for the purpose of ISO 27001 risk assessment include:

- Data, information, records
- Software
- Hardware
- Services/Utilities
- People, their qualification skills
- Intangibles (reputation and image)



Figure 1. ISO 27001 Information Security (Rheinland, 2020)

### 3.3. Confidentiality, integrity and availability (CIA)

Confidentiality, integrity and availability (CIA Framework) are the three dimensions of information security (G. Yan & Weigle, 2009). It is essential to ensure that you deal with them correctly thus I align them in the risk register to protect your information capital. Figure 2 presents the three main elements that are supporting the Risk register in an effective information security policy.

Additionally, you may not consider your information sensitive or a possible target of an attack yet. However in today's Internet world without borders, disrupting business IT processes can break your operations and allow your competition to gain an advantage in the market in a matter of seconds (Noroozian, et al., 2015), (G. Yan & Weigle, 2009).

**To conclude the above, supplied Risk register offers a systematic and well-structured approach that will protect:**

- the **confidentiality** of your information
- ensure the **integrity** of business data
- improve the **availability** of your IT systems.



Figure 2. The CIA triad (Purcell, 2018)

## 4. Risk Management Implementation

### 4. 1. Plan-Do-Check-Act (PDCA) Cycle

This cyclical strategy is the foundation of risk management framework ISO 27001 (2005), which promotes a quality improvement approach by a cycle of developing, enforcing, tracking, evaluating and enhancing the information security management structure (Nicho, 2018). Hence, I advise the implementation of the risk management framework through the prism of Edward Deming's PDCA method. Successful application of information security requires the use of a structural combination of: IT control structures (which match IT priorities with corporate objectives), IT process management (which ensures stable and productive business continuity), and compliance with applicable safety requirements, regulations and programmes (Nicho, 2018), (Choobineh, et al., 2007). All components ensure that the confidentiality, credibility and availability (CIA) of your assets are protected at all times.

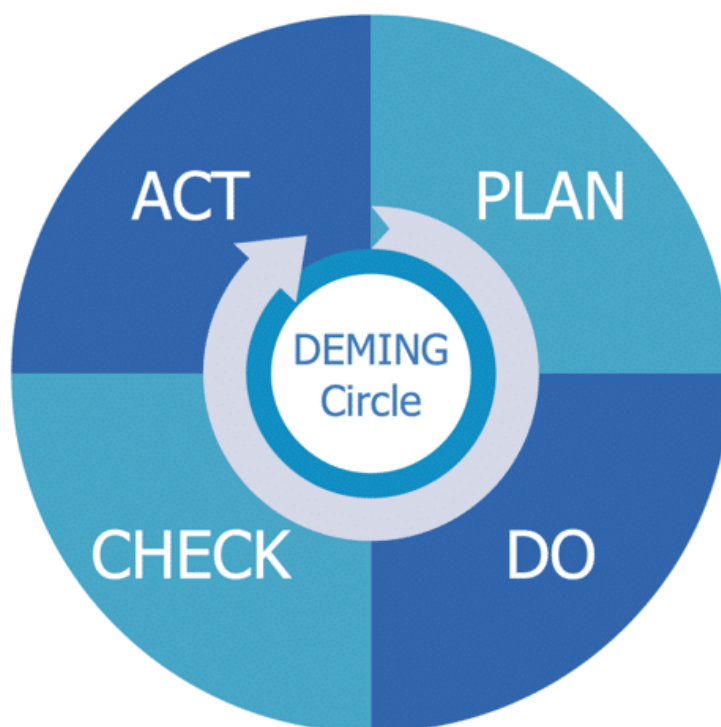


Figure 3. The PDCA Circle (Thomson, 2019)

#### PDCA method of ISO 27001 implementation consist of 4 phases:

- **Plan:** The planning stage of implementing ISO 27001 begins with the supplied risk assessment, followed by the phases: policy definition, requirements delineation, control establishment, environmental monitoring and final risk assessment (Choobineh et al., 2010).
- **Do:** Managers will implement a theory-based protection system that involves the use of a risk controls model, health & safety education and counter measurement matrix analysis. Mapping



of appropriate IT regulates in relation to ISO 2700 structures and standards (Choobineh, et al., 2007).

- **Check:** Checks of security and governance play a key role in risk reduction, as 97 percent of violations may be prevented by basic or intermediate checks (Nicho, 2018). This phase involves the monitoring and measurement of IT controls, using key performance indicators, key goal indicators and matrices.
- **Act:** Implementation ISO 27001 process involves the mapping, integration, and implementation of relevant IT frameworks, and standards. People involved in the system share a culture of protection through continuous, multi-level, optimally designed, technical and non-technical training. Using the best practises of the industry to incorporate ISO 27001 at every point of the PDCA process (Nicho, 2018).

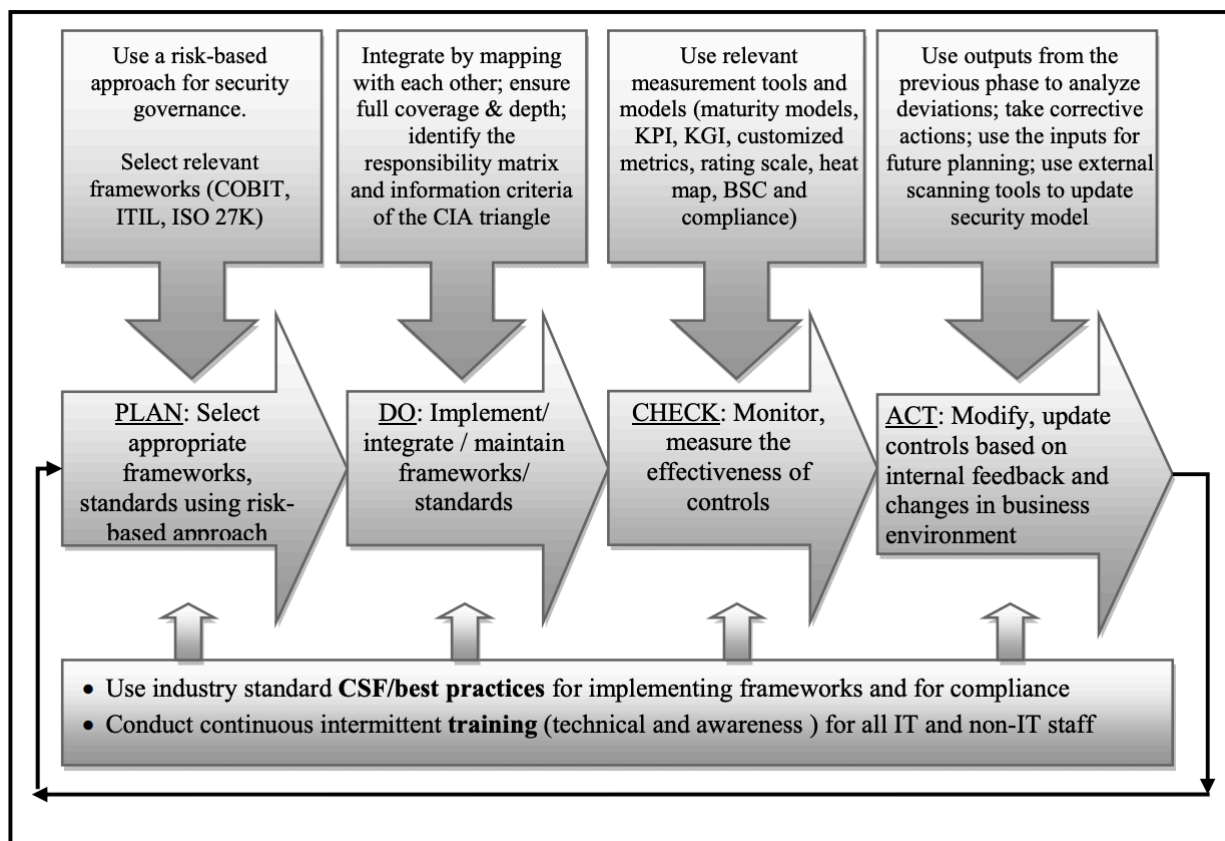


Figure 4. Risk management Implementation process model (Nicho, 2018).

## 5. Risk Management Goals and Objectives

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Your customer data, as well as your know-how, which is the core of the business, need protection. For you, as a newly founded company is the risk of potential damage particularly crucial as it may affect your reputation that could occur as a result of inadequate risk management or security breaches (Noroozian, et al., 2015). These incidents could ruin the chances of your success and would seriously expose the path of your business development. Data handling – particularly in your IT-driven company – shall be the norm, not the exception. Losing data can easily cost you the right to exist, either by violating regulations or by hazarding with the trust of your customers (Ablon, et al., 2016). Hence, I suggest you to take into account the three following aspects of compliance and risk reduction to ensure the success and reputation of your company in the future.

### 5.1 Processes and strategies

In risk management, processes and strategies are critical to the effective business activities and operational processes. In the supplied Risk register, I am suggesting you a consistent context for understanding IT threats, compliance procedures and core operating features, such as:

- How IT applications will be held up to date
- Anti-virus implication
- Data collection and backups
- IT change management
- Employee training
- Review access rights and permission settings
- File tracking procedures

All of the mentioned specifications play a significant role in your business process and strategies and are related to the production, monitoring, operating environments, vulnerability protection and knowledge recovery.

The primary business activities need to comply with the suggested Risk register, that will result in more explicit reporting. It ensures that all your workers can have specific instructions to follow, which will help to maintain the organisation secure and minimise the risk. These could involve rules relating to the usage of servers, firewall implication, digital signatures, timestamps or strong passwords (Farhat, et al., 2017), (Choobineh, et al., 2007). I encourage you a systematic approach to risk management as it includes the development and distribution of resources in the right place, in the right way and at the right time. It was taking into account not only the needs of your company, but also those of its customers and other stakeholders. As demonstrated, the overall risk score of controlled external cyber-attacks is thanks to the risk register lowered to its minimum and business processes enhanced to work more efficiently. It is, after all, a pillar of business management that leads us to the next risk consideration.

## 5.2 Compliance and Fines prevention

Compliance in business brings not only prevention from criminal charges, building a positive reputation but also higher productivity in the company. Obeying the regulations of a company's market is essential to the survival and growth of your company. It is crucial for you, as a young and more vulnerable company, to avoid fines and obstacles that would make a further grow even more challenging (Arbel, 2015). I am recommend you to show enforcement in the case of an accident. Thus compliance has to be protected. The aim is to prevent infringements of regulatory or contractual obligations concerning safety and security of information.

The supplied Risk register successfully explains how to clearly define, record and amend the applicable legislative, administrative, contractual specifications and the strategy of your company to fulfil certain criteria within each information system and entity. As proved in the risk register, the likelihood of controlled both internal and external attacks is lowered, and the financial and legal consequences are minimized.

## 5.3 Competitive advantage & reputation

The prestige of Webdos is a critical component of the success of their mission. Customers want their data safe and stable. Although the return on investment from the information security management framework may be high, the initial investment triggers usually come from outside factors such as essential customers. The alignment of your company with the expectations and requirements of your customers will give you a strategic advantage and make you a much more appealing prospect (Telang & S. Wattal, 2007).

### **Regarding your reputation, the supplied Risk register might have an impact on:**

- An increase in the company's image
- Visibility within the competition
- Enables faster adaptation of your company to the changing requirements of customers
- Strengthening how the company is viewed by the customers, vendors and other stakeholders
- Improves the organization's infrastructure, governance and day-to-day processes.

## 6. Risk Appetite

Risk appetite refers to how much risk you are able to face to achieve the business objectives. (Hillson & Murray-Webster, 2012). The risk appetite system provides an overview of different risk dimensions and helps you to control risk assessment across certain dimensions in compliance with its overall risk policies (Cremonino, 2011). Figure 3 shows suggested comprehensive structure that is used to express risk appetite. I advise defining, evaluating and managing risks within the context of risk management, ensuring that risks are identified and handled efficiently in order to achieve your objectives. Although you are seeking creativity and change, Webdos shall not sacrifice its reputation in any manner.

### Understanding your risk appetite:

- With a high risk appetite, even a risk measured as high can seem appealing if the potential profit is high enough
- Increased risk tolerance can expose you to more risks by making you use less strict controls in search of a particular opportunity, so test if the anticipated benefits from taking risks will pay or intermediate losses and still provide incentives reasoned desirable (Giesler, 2019).

Risk Type	Seeking	Tolerant	Neutral	Moderate	Averse
Research and development			<input checked="" type="checkbox"/>		
Quality					<input checked="" type="checkbox"/>
Security					<input checked="" type="checkbox"/>
Data access				<input checked="" type="checkbox"/>	
Innovation		<input checked="" type="checkbox"/>			
Financial					<input checked="" type="checkbox"/>
Business Change				<input checked="" type="checkbox"/>	
Skills and Capability			<input checked="" type="checkbox"/>		

Figure 5. Suggested Risk Appetite

# 7. Investment Required

Top management, technical personnel, final users, experts – all those involved in information security must have specified responsibilities (e.g. decision taking, risk assessment, follow-up procedures, etc.). This is one of the most cost-effective ways to minimise information security risks, as each person would know what is required of them (Kropp, 2006). For this reason, essential employee training is required and included in the investment forecast. Figure 4 also demonstrates that modern technology reduces server cooling costs, new systems are user-friendly and contain fewer glitches and defects. It increases the workers’ performance and lowers costs. When appropriately applied, it can optimise the performance, reduce the capital needed, rapidly develop internal experience and build sustainable competitive advantage (Arthur, 1997), (Kropp, 2006). I also included financial and operational loss if risks remain uncontrolled (see figure 7).

Asset	Investment	Timescale
Employee training	>£30k	Annually
Malicious code alerting system	>£2000	Annually
Servers cooling solution upgrade	>£200k	Every 3 years upgrade
Security and protection solutions	>£10k	Annually
Hardware upgrade and maintenance	> £50k	Every 4 years upgrade

Figure 6. Investment forecast 2020

Financial and Operational consequences if minimal efforts in place to manage risks									
Impact Description	Impact rating	Impact Operational	Impact Financial	Likelihood					Risk Assets
Very High	5	Cancellation	>£300k			E	A, E	A, B	<b>A. Customer files</b> <b>B. Outsourced software/hardware contracts</b> <b>C. Terms &amp; conditions customer sheets</b> <b>D. Servers usage report</b> <b>E. Hosting Operatives Database</b> <b>F. Hosting certificates &amp; accreditations</b> <b>G. Servers maintenance notes</b> <b>H. Security policy</b> <b>I. Hosting services information sheets</b>
High	4	Severe disruption	£100k – £200k	B, F, H	D	B, C, E, G	A, B	A, E	
Medium	3	Significant disruption	£50k – £100k		D, G	D	B, C, E, G	E	
Low	2	Requires corrective action	£30k – £50k	I	B, F, H	D, G	D		
Very Low	1	Requires no action	<£30k		I		B, F, H		
				1	2	3	4	5	
				Very Likely	Likely	Possible	Unlikely	Very Unlikely	
				Likelihood					

Figure 7. Forecasts of Financial and Operational loss if minimal efforts in place to manage risks

## 8. Final recommendations

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Both security best practices and risk assessment methodologies have been extensively investigated to give a clear picture of the main limitations in the area of risk analysis. The work begins by analyzing potential risks, which are used to build attack scenarios and identify additional threats and vulnerabilities. The Risk register and its implementation is developed to accommodate conflicting objectives and to provide you, as the decision-maker with an optimum solution set. Resulting in encouraging your IT Directors in defining the frameworks they should use to increase the efficiency of the information security management process. Your organization would also be able to show robust internal control on financial systems and, more critically, that you significantly reducing cybersecurity threats by working under one policy. This method will complement the Plan, Do, Check, Act (PDCA) cycle, which is a commonly accepted framework for ISO 27001 certification. As observed in the supplied Risk register, your organization with ISO 27001 certification and verification would strengthen risk-based approach to information security management through an ongoing risk evaluation and risk mitigation phase. For this reason, I have sampled various risk assets and their mitigations procedures, which would result in increased company's profitability, reputation, savings, credibility and more effective operations. It is clear to us that opportunities for work in the field of information system security will continue to grow as our reliance on information technology increases.

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