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| Assessment Title | Assignment 1: Business Strategy and ICT gaps |

## Competency Details

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| Unit code/s and title/s | ICTICT517 - Match ICT needs with the strategic direction of the organisation |
| Qualification code/s and title/s | ICT50220 - Diploma of Information Technology |
| Business unit/Work group | Business and Arts / IT Studies |

## Instructions

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| Method/s of assessment | Questioning (Written)  Questioning (Oral Interview)  Product (Email) |
| Overview of assessment | This assessment will require you to demonstrate your ability to evaluate current strategic plan of an organisation, document state of ICT systems, identify goals and objectives, determine ICT gaps, evaluate changes required and provide improvement opportunities  You will write your answers to questions using the templates provided in this document. You will also need to complete an interview to determine the organisation objectives and write an email to the ICT Supervisor (Lecturer) to report the proposed changes. |
| Task/s to be assessed | This assessment will require you to complete the following tasks   * **Task 1**: Evaluate current business strategy and determine ICT gaps * **Task 2**: Develop recommendation report |
| Time allowed | Refer to your schedule for submission dates |
| Location of assessment | Assessment can be completed anywhere with access to the resources required. (see Resources Required section below) |
| Decision making rules | To receive a satisfactory outcome for this assessment you must complete all parts correctly.  Word counts are provided as guidance only. |
| Assessment conditions | This assessment must be undertaken where the conditions replicate noise levels and interruptions that people typically experience working in the ICT industry.  This is unsupervised assessment, and you may access any required resources.  This is not group work and must be completed as an individual.  All assessment submissions must be via Learn, email submissions will not be accepted |
| Resources required | To complete this assessment, you will require the following:   * Access to Learn with Internet access * Learn resources * Word processing software such as Microsoft Word. * Email software such as Microsoft Outlook * Presentation software such as Microsoft PowerPoint * ASDS - International Technical Institute\_ Documents.zip   + International Technical Institute\_Business Scenario   + International Technical Institute\_Strategic Plan 2021 – 2025   + International Technical Institute\_ICT Infrastructure   + International Technical Institute\_ICT Security Policy   + International Technical Institute\_Work Practices & Communication   Students can complete on their own computers or laptops if they are able to source the above requirements. |
| Result notification and reassessment information | You will be provided feedback and the result for your assignment on TAFESA Learn. You will be and given the chance to resubmit with required corrections only once.  Refer to the TAFE SA assessment policy for more information <https://www.tafesa.edu.au/apply-enrol/before-starting/student-policies/assessment> |

**Task 1:** **Evaluate current business strategy and determine ICT gaps**

1. Provide an overview of the business including its business domain (File: International Technical Institute\_Business Scenario). (Approximately 50 words)

Use the following as a guideline:

* Business Name: International Technical Institute
* Business Domain: Vocational Education and Training
* Business Location: Adelaide City
* Courses Offered: Business, Justice, IT, Community Services, and Health
* Study methods: on campus, self-directed,
* ICT Infrastructure: offsite using third party.

**Business Overview**

The International technical institute is a South Australian RTO with 5 campuses, it provides over 12 certificate and diploma level qualification in the VET Sector in Business, Justice, IT, Community Services, and Health. The institute has 250 students currently attending who all use LEARN as the Learning Management System and in blended programs with on and off campus, and self-directed courses. The Institute currently uses an external software as a service (SaaS) provider, BEAST IT, and are looking to move towards a different SaaS solutions

1. Review, analyse and list the three current objectives and five strategic goals in the Strategic Plan (File: International Technical Institute\_Strategic Plan 2021 – 2025)

**Objectives**

* To deliver first-class education using modern technologies
* To provide customer service excellence beyond expectations
* To implement sustainable practices

**Strategic Goals**

* To increase student numbers
* To increase staff collaboration
* To reduce desktop software cost
* To provide storage scalability
* To improve security and privacy

Queston structure:

What is the positive gain expected?

How is this going to be accomplished?

When does this need to be completed by?

Requirements:

How do we know the requirements been met? What is the measure for success for each SMART Objective/ what is their end requirement. What are the conditions to make this project complete?

1. Define the project and develop measurable strategic objectives for each of the strategic goals.

When conducting the interview with the CEO, you have been asked to follow the organisation Work Practices and Communication guidelines (File: International Technical Institute\_Work Practices & Communication)

1. You are required to:

* Arrange a brief interview with the CEO (Lecturer).
* Ask questions that will help you to complete the following:
  + Determine the five measurable objectives for each of the strategic goals
  + Define the requirements of the project. (Approximately 100 words)
* Use questioning techniques to obtain information from the CEO that will help you to develop strategic objectives
* Use listening and verbal skills to clarify responses from the CEO

The interview can be conducted via video conferencing (Collaborate, MS-Teams) or Face-to-Face if on campus.

The interview should be approximately 5mins.

1. In the space provided below document the responses from the CEO.

**Determine Strategic objectives.**

* Increase Student Numbers by 10% by 30th June 2024
* Increase staff collaboration by 100% using online collaboration tools, this is to be done by 30th June 2024
* To reduce desktop software cost by 5% switching to a SaaS model 30th June 2024
* Provide storage scalability as required using SaaS 30th June 2024
* Improve security and privacy by making sure it is ISO 27.001 and implementing cyber security policies. 30th June 2024

**Define the Project**

The aim of the project is to move all of the on-premises servers to a cloud-based SaaS solution, there is also an aim to increase the productivity of everyone in the Institute through different software solutions.

The Projects main aim is to achieve the Institutes Business objectives, these include, to increase student numbers, increase staff collaboration, reduce desktop software cost, provide storage scalability and to improve security and privacy. The objectives will be met by moving the Institute to a majority Cloud based solution and implementing many SaaS software packages to reduce costs and streamline the implementations as much as possible. The goals and strategic objectives are all to be achieved by end of fiscal year 2023

1. The current state of ICT in the organisation.
2. Review the Current ICT Infrastructure of International Technical Institute provided (File: International Technical Institute\_ICT Infrastructure). Make a list of the following:

* Hardware in use – list twelve pieces of main hardware
* Operating System/s in use – list what is installed on the Servers, PCs, and Laptops
* Application Software in use – list what is installed on the PCs, and Laptops
* IT System and Practices – list three. This should include the Student system, and the current messaging and document solution provided off-site

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| --- | --- | --- | --- |
| **Hardware (include specs if available)** | **Operating System** | **Application** **Software** | **System & Practices** |
| Student Server: Hp ProLiant ML350p Gen8 Xeon E5-2620 CPU @2.0Ghz 6 cores 32GB Ram 6.6TB SAS (A1) | Windows Server 2016 | Active Directory | Student Server |
| Admin Server: ThinkSystem ST50 E-2104G 8GB  1xIntel Xeon E-2104G 4+2C 3.2GHz65W | Windows Server 2016 | Student Information System | Amin Server, used for Admins staff and allows for storage of student records.  Student Information System |
| EDU Server: HP ProLiant ML350 G6 Tower 12 Core CPU 2x X5650 2.67Ghz/32GB/4x300GB SAS 15K | Windows Server 2016 |  | Education Server, Used by Education Staff |
| Support Server: HP ProLiant ML350 G6 Tower 12 Core CPU 2x X5650 2.67Ghz/32GB/4x300GB SAS 15K | Windows Server 2016 | Active Directory |  |
| NAS. PowerEdge T440 Tower Server  Intel Xeon Bronze 3204 1.9G, 6C/6T, 9.6GT/s, 8.25M Cache, No Turbo, No HT (85W) DDR4-2133 | Windows Server 2016 |  | Network Attached Storage |
| Classroom PC: 460x HP Elite 8200 Desktop PC Core i5 - 2400 PC 8GB Ram 250GB HDD | Windows 10 Pro | Microsoft Office 2013 | Classroom PC |
| Staff Laptop: 70x Lenovo ThinkPad T490 14" Laptop i5-8265U 8GB 256GB SSD | Windows 10 Pro | Microsoft Office 2013 | Staff Laptop |
| Network Switch |  |  |  |
| ASA Firewall |  |  |  |
| Router |  |  |  |
| Network Copiers |  |  |  |
| UPS |  |  | Uninterruptible Power Supply |

1. Review the Security Policy of International Technical Institute provided (File: International Technical Institute\_ICT Security Policy). List two security guidelines from each category: Users, Hardware, Software and Data. Provide only the headlines from the Security document.

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| --- | --- | --- | --- |
| Users | Hardware | Software | Data |
| Passwords | ICT Physical Security | Malicious Software Protection | Data Encryption |
| User Identification | Physical Access | Access Control and Management | Event Logging |

1. Develop a Gap Analysis Report using the organisational template provided. For the gap table, analysis should be kept very high level where you specify the current state of each of the four strategic objectives in a few words, the desired state of the ICT system in a few words, the ICT technical gap between the current state and the future state, and what ICT technology will help close the gaps.

**Gap Analysis Report for International Technical Institute**

**Purpose**

*To compare what the International Technical Institute currently has regarding their objectives and where they want to be.*

**Background**

*The International Technical Institute (ITI) currently has all of its ICT devices on premises using 5 different servers all of which use windows server 2016, Admin, Student, Education and Support server, ITI also uses a NAS. All of the servers and the NAS are supported by a UPS. The staff members are all provided with a Lenovo laptop with students using a HP pc if they are on site. The teaching staff and student devices all run on windows 10 with Microsoft Office 2013 installed.*

**Strategic objectives**

The organisation has the following strategic objectives:

Increase Student Numbers by 10% by 30th June 2024

* Increase staff collaboration by 100% using online collaboration tools, this is to be done by 30th June 2024
* To reduce desktop software cost by 5% switching to a SaaS model 30th June 2024
* Provide storage scalability as required using SaaS 30th June 2024
* Improve security and privacy by making sure it is ISO 27.001 and implementing cyber security policies. 30th June 2024

**Current ICT network**

The current ICT network for International Technical Institute is a mixture of on prem servers and staff and student devices. The institute implements 5 servers (Admin, Student, Education, Support, NAS) all running windows server 2016, The NAS that the institute uses is currently running out of space. All of the servers are supported by an Uninterruptible power supply.

The Network is managed through a ASA Firewall that is then routed to each of the different campuses, The City Campus is given a dedicated switch that is used to connect all of the staff and student devices. The parent campus switch is connected to all of the servers.

**Gap analysis**

The following table contains gap analysis for each of the strategic goals:

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| --- | --- | --- | --- | --- |
| **Strategic Objectives** | **Current State** | **Future State** | **Gap** | **Technology** |
| Increase Student Numbers by 10% | 250 | 275 | The gap currently is at 25 students | Moving to online delivery, using online class software (blackboard Collaborate) |
| Increase staff collaboration by 100% | Limited capacity in collaboration services | Greater collaborative ability through more advanced systems | The ability to efficiently connect and collaborate with other staff members | Share-point, Teams, ect |
| To reduce desktop software cost by 5% | Licensed on premises software solutions | SaaS software in cloud | All software is currently on prem and licensed | Office 365, Azure, using freeware services |
| Provide storage scalability as required | Non scalable storage and needs to pay for everything, used or not | Pay as you go per usage SaaS storage solution providing easy and flexible scalability | The gap to the future state is the current inflexibility of storage scalability and payment solutions | Azure or AWS |
| Improve security and privacy | Service provider not meeting compliance criteria regarding security and privacy | Implement security complying with ISO27001 with continuous improvement | The is that the current solution is not compliant with the requested ISO and the current solution does not have continuous improvement. | Encryption, cyber security providers, TFA/MFA |

**Recommendations**

A meaningful recommendation for ITI is to move to a SaaS offsite cloud solution through providers like Microsoft or Amazon.

SaaS cloud solution benefits include.

1. The Allowance for easy and flexible scaling of storage systems and Pay as You go structures.
2. The Allowance of better collaboration between staff and students
3. Makes security solutions easier to implement by using a trusted storage provider.
4. Based on the Gap Analysis Report in the previous question, you are now required to report the conclusions to your ICT Supervisor (Lecturer).

You are required to:

* Compose an email to the ICT Supervisor (Lecturer). Do not send it but save and submit this email to LEARN.
* The email should include the following (Approximately 150 words)
  + proposed changes
  + gaps identified
  + improvement opportunities

**Task 2: Develop recommendation report**

In this task you are required to review the business scenario provided (File: International Technical Institute\_Business Scenario) and review the gaps you determined in the previous task to develop an ICT system recommendation report of what needs to be implemented.

1. Using the internet, research the recommended technology that could be implemented to close the gaps identified in the gap analysis report completed in the previous task. The research should include the review of hardware, software, network resources, and security requirements required for implementing the online collaboration tools.

The organisation has indicated that they would like to transfer the existing domain to a new hosting provider.

1. Azure cloud services.
2. Blackboard collaborate.
3. MS team
4. SSL
5. SharePoint
6. Square Space, Azure, Cloudflare, are all options for domain hosting, they each have their own benefits but the use of Azure is suggested as it will be used elsewhere and comes as a package with their cloud services.
7. AES 256 encryption
8. Based on your research from the previous question, develop an ICT Recommendation Report using the template provided.

**ICT System Recommendation Report for International Technical Institute**

**Background**

The Projects main aim is to achieve the Institutes Business objectives, these include, to increase student numbers, increase staff collaboration, reduce desktop software cost, provide storage scalability and to improve security and privacy. The objectives will be met by moving the Institute to a majority Cloud based solution and implementing many SaaS software packages to reduce costs and streamline the implementations as much as possible.

**Strategic goals**

*Increase Student Numbers.*

*Increase staff collaboration.*

*reduce desktop software cost.*

*Provide storage scalability.*

Improve security and privacy.

**Strategic objectives**

Increase Student Numbers by 10% by end of June 2024

Increase staff collaboration by 100% by end of June 2024

To reduce desktop software cost by 5% by end of June 2024

Provide storage scalability as required by end of June 2024

Improve security and privacy continuously.

**Security requirements**

1. Segmenting network/server Access
2. Multi Factor Authentication
3. SSH authentication
4. Firewalls
5. Access logging.

**Hardware requirements**

N/A

**Software requirements**

Microsoft 365 E5 $85/user/month <https://www.microsoft.com/en-au/microsoft-365/enterprise/microsoft365-plans-and-pricing>

Cloudflare $ 200/month USD <https://www.cloudflare.com/en-gb/plans/>

Class Collaborate $9000 year USD <https://www.class.com/collaborate>

**Network Resources**

Azure Cloud products: (<https://azure.microsoft.com/en-us/products/>)

Upgrade LAN capabilities within buildings

ISP connection configuration for faster access to cloud servers

Bandwidth expansion: Increase the amount of data that can be transmitted to ITI.

Network security: software to protect networks from unauthorized access, data breaches, and other security threats.

Network management software: Software to configure, monitor, and manage networks.

**Advantages and disadvantages**

**Advantages**

1. Scalability is made easier with cloud-based systems.
2. **Cost savings, pay as you go systems means you are not overpaying for stuff you are not using**
3. **Increased security, cloud providers offer built in security systems that are ISO compliant.**

**Disadvantages**

1. Security and privacy concerns about if the providers are doing what they are saying and do not implement backdoors that could be exploited. It is based in trust.
2. Complexity: cloud solutions can be complex to set up, many configuration options can become an issue for business moving to on cloud solutions
3. Provider lock in, some providers make adding 3rd party software difficult thus locking you into their ecosystem.

**Difficulties of implementing proposed changes to ICT systems**

1. Knowledge, learning new types of cloud systems can be an issue.
2. Implementation complexity, moving from on prem to cloud can be complex.
3. Application compatibility: Not all applications are compatible with the cloud.
4. Cost management, implementation of SaaS models can become expensive and trying to keep that down can be an issue if not every requirement is met.
5. Compliance: making sure that all systems are compliant with laws and regulations, plus industry standards like ISO27001 can be difficult.