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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

**Business Overview**

The International Technical Institute is a South Australian Registered Training Organization (RTO) with 5 campuses, Adelaide (the hub and main campus), Mt Gambier, Noarlunga, Elizabeth, and Port Piri. It provides over 12 certificate and diploma-level qualifications in the VET sector, covering Business, Justice, IT, Community Services, and Health. The institute currently has 250 students attending, all of whom use LEARN as the Learning Management System in blended programs, combining on-campus and off-campus as well as self-directed courses. The Institute currently relies on an external Software as a Service (SaaS) provider, BEAST IT, to host the current messaging system and document management system. ITI is looking to transition to a different SaaS solution that will cover all of its needs.

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

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 by adding online, and external classes.
* 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%, by switching to a SaaS cloud platform, to be done by 30th June 2024.
* Provide storage scalability as required using cloud platforms, this is to be implemented by 30th June 2024.
* Improve security and privacy to prevent data leakage and adherence to privacy laws, by 30th June 2024.

**Define the Project**

The aim of the project is to move all of the on-premises servers and current Beast IT services to a cloud-based SaaS solution, with goals of increase student numbers, increase staff collaboration, reduce desktop software cost, provide storage scalability and to improve security and privacy all by using a single cloud service provider, improving the overall business cost effectiveness.

* Increase communication and collaboration regardless of where they are and what devices they are on for increased productivity
* Reduce desktop software cost – only pay for the resources that we use
* Provide storage scalability - option to buy additional storage above the included storage capacity
* Improve security and privacy - encrypting data and protection against viruses and malware
* Provides file storage and sharing
* Provides compliance with industry standards

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 |  |  |
| Admin Server: ThinkSystem ST50 E-2104G 8GB  1xIntel Xeon E-2104G 4+2C 3.2GHz65W | Windows Server 2016 |  | Student Information System |
| EDU Server: HP ProLiant ML350 G6 Tower 12 Core CPU 2x X5650 2.67Ghz/32GB/4x300GB SAS 15K | Windows Server 2016 |  | Beast IT MS Exchange 2010, managed by ITI |
| Support Server: HP ProLiant ML350 G6 Tower 12 Core CPU 2x X5650 2.67Ghz/32GB/4x300GB SAS 15K | Windows Server 2016 |  | Beast IT SharePoint 2010, managed by ITI |
| 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 |  |  |
| Classroom PC: 460x HP Elite 8200 Desktop PC Core i5 - 2400 PC 8GB Ram 250GB HDD | Windows 10 Pro | Microsoft Office 2013 |  |
| Staff Laptop: 70x Lenovo ThinkPad T490 14" Laptop i5-8265U 8GB 256GB SSD | Windows 10 Pro | Microsoft Office 2013 |  |
| Network Switch |  |  |  |
| ASA Firewall |  |  |  |
| Router |  |  |  |
| Network Copiers |  |  |  |
| UPS |  |  |  |

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 is a South Australian Registered Training Organization (RTO) with 5 campuses, Adelaide (the hub and main campus), Mt Gambier, Noarlunga, Elizabeth, and Port Piri. It provides over 12 certificate and diploma-level qualifications in the VET sector, covering Business, Justice, IT, Community Services, and Health. The institute currently has 250 students attending, all of whom use LEARN as the Learning Management System in blended programs, combining on-campus and off-campus as well as self-directed courses. The Institute currently relies on an external Software as a Service (SaaS) provider, BEAST IT, to host the current messaging system and document management system. ITI is looking to transition to a different SaaS solution that will cover all of its needs.

**Strategic objectives**

The organisation has the following strategic objectives:

* Increase student numbers by 10% by 30th June 2024 by adding online, and external classes.
* 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%, by switching to a SaaS cloud platform, to be done by 30th June 2024.
* Provide storage scalability as required using cloud platforms, this is to be implemented by 30th June 2024.
* Improve security and privacy to prevent data leakage and adherence to privacy laws, by 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, Network Attached Storage [NAS]) all running windows server 2016, with only the Student, and support server implementing Active Directory as a security measure. 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.

Currently MS Exchange 2010 and SharePoint 2010 are both hosted offsite by Beast IT but managed by ITI

**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% by 30th June 2024 by adding online, and external classes. | Currently there are 250 Students in classrooms delivery only | 275 Students total  25 extra students by adding online and external delivery | Currently unable to deliver courses externally or online | Microsoft 365 E5 package: Teams |
| Increase staff collaboration by 100% using online collaboration tools, this is to be done by 30th June 2024. | Messaging (MS Exchange 2010) and document management systems (SharePoint 2010) are hosted off-site | Greater collaborative ability through more advanced online video collaborative tools | Beast IT currently lacks sufficient collaborative tools, providing an unstable environment, this prevents ITI from having effective staff collaboration, this will be fixed by using Microsoft 365 E5 | Microsoft 365 E5 package: Share-point, Teams |
| To reduce desktop software cost by 5%, by switching to a SaaS cloud platform, to be done by 30th June 2024. | Licensed on premises software solutions | SaaS software in cloud | All software is currently on prem and licensed, this means for each new user ITI needs to buy a new permanent license making costs for software upgrades high, this also means software Upgrades are manually completed | Microsoft 365 E5 applications package: Word, excel, PowerPoint.. etc |
| Provide storage scalability as required using cloud platforms, this is to be implemented by 30th June 2024. | Non scalable storage and needs to pay for everything, used or not, currently the storage is an onsite NAS | 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 | Microsoft 365 E5 packages: OneDrive, and SharePoint |
| Improve security and privacy to prevent data leakage and adherence to privacy laws, by 30th June 2024. | Beast IT not meeting compliance criteria regarding security and privacy, current system includes a firewall as a DMZ, Active directories are also implemented in student and support server. | Implement cloud managed security complying with ISO27001 with continuous improvement | The is that the current solution ITI has does not evolve with a continuously changing security landscape, it also currently does not meet ISO27001 opening ITI to potential cybersecurity risks | Microsoft 365 E5 packages:  Multi Factor Authentication. |

**Recommendations**

A meaningful recommendation for ITI is to move to a SaaS offsite cloud solution through Microsoft 365 E5, 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 through the use of advanced online collaborative tools
3. Makes security solutions easier to implement using Microsoft’s built in security offering with the E5 plan, Microsoft 365 is also ISO-27001 certified matching ITI’s objectives.
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. Subscription.
2. Bandwidth requirements.
3. WAN (Wide Area Network) connection.
4. configure direct-to-internet connections.
5. Configure Domain Controller for adding users with Azure AD Connect.
6. Integrate on-premises Active Directory with Azure Active Directory Connect.
7. Transfer existing Domain from BEAST IT to another hosting provider.
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 goals, 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 Cloud based solution and implementing a SaaS software packages to reduce costs and streamline the implementations as much as possible, the provider must include an option for file storage and sharing, the provider bust also be ISO 27001 compliant as currently Beast IT isn’t.

**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 30th June 2024 by adding online, and external classes.
* 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%, by switching to a SaaS cloud platform, to be done by 30th June 2024.
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* Improve security and privacy to prevent data leakage and adherence to privacy laws, by 30th June 2024.

**Security requirements**

1. Login accounts
2. Multi Factor Authentication
3. IDS or IPS
4. Firewalls
5. Permission and Privileges

**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>

**Network Resources**

WAN connection

ISP connection configuration for faster/direct access to cloud servers

Transferring existing domain from Beast IT to another provider

Configure Domain Controller for adding users with Azure AD Connect

Integrate on-premises Active Directory with Azure Active Directory Connect

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. Technical issues/support can be a disadvantage due to potential downtime, delays in reaching support representatives, and limited control over troubleshooting.
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. Service Level Agreement (SLA), ITI have difficulties in implementing a SLA that fully aligns with its IT strategies and business objectives, there could also be issues in holding Microsoft accountable to the agreement.
2. Lack of awareness- A major issue can be a lack of awareness regarding ICT and cloud migration, trying to convince management of specific providers or updating old systems can hinder implementations.
3. Creating Ownership: It is essential that ITI creates and owns its policies and the plans to implement the ICT changes, otherwise individuals might resist change or not have a clear understanding of the changes to the ICT system meaning the current inertia of the organisation can hamper implementation.
4. Sustainability: ITI must make sure that the changes to the ICT system is sustainable in the long run otherwise an assumption someone else will worry about the costs can become an issue in the future.
5. Compliance: making sure that all systems are compliant with laws and regulations, plus industry standards like ISO27001 can be difficult.