Information Communication and Technology – Information Strategy

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Abstract

The problem with most Higher Education Institutions is that there is always a lack of effective Knowledge Management. This results in the misuse of valuable resources and imposes on the validity of the Institution as a whole, and in turn affects its Objectives as well as Strategic Aspirations.

Evaluation Techniques are the foundation of any noteworthy Strategy.

Tools such as SWOT and PESTLE when used in conjunction with the JISC Toolkit create an outcome that serves to quantify the reach of the Institution in question.

When collected and utilized in a well-structured manner, these mechanisms create a framework that targets the source of the Institutions problem areas, and betters the function of it as a whole.

An Institution is a set of gears. It requires every segment in order to function effectively.

1. Introduction

The purpose of this article is to devise a strategic policy that can serve as a guideline and plan of action toward the issues of Scottish Higher Education Institution (herein referred to as SHEI). This detailed report, will be used as a tool to assist this Institution.

Throughout this report, a number of strategies are detailed in order to tackle issues that are arising within the Institutions Information Technology faculty. Factors that need to be catered for vary from; thefts occurring within areas where there is communal access given to computer equipment, students are corrupting file systems, as well as possible network components through the use of infected portable and/or optical media devices, it is suspected that non-licensed software is being used within campus boundaries, users of the computer systems that have been put in place have not been given sufficient training and thus this leads to a the self-sufficiency levels of users being recognizably low.

Methods for evaluation of these issues along with all aspects pertaining to the knowledge resources utilizable and available to the University are analysed and on this basis the universities competitive position is discussed whilst utilizing effective models for detailing their position. Methodologies for the deduced information strategies are discussed and critically evaluated and from this an outline of a collective information strategy for the university is devised in order to put in place an effective policy that will eventually be of assistance to controlling the faculty.

2. Evaluation of Methods

2.1 Knowledge Mapping

A knowledge map is a resourceful tool that is used as a visual aid that forms the architecture of your organisation. From this, issues (both chaotic and/or complex) can be depicted, and also it can be used as a tool for innovation management. As stated by Trainmor-knowmor (n.d), "A knowledge map can be the basis for identifying the level of knowledge in an enterprise and can support strategic positioning in terms of knowledge management". It is also important to take note that a Knowledge Map is in no manner, a "knowledge audit" or a "one-time effort".

There are various types of Knowledge Maps that can be implemented, each with its own outcome to meet the needs of the organization. For the purpose of this Article, and in reference to the SHEI, a "Knowledge Source Maps" will be the Knowledge Map that we shall utilize as one of the methods from which we will be able to analyse the Universities resources.

Knowledge Mapping can be carried out by utilizing a "Knowledge Mapping Matrix", which is a tool that helps in laying out what knowledge is required for various aspects within the organization. Refer to Figure 1: Knowledge Mapping Matrix (SHEI).

For the benefit of the purpose of this article, the steps to Knowledge Mapping is described below, taken from Knowledge Mapping 101, USAID (09/22/03);

1. Review critical process
2. Identify individual process steps within each process
3. Identify the knowledge required to fulfil the purpose of each process step
4. Identify the knowledge generated for each process step
5. Create measurement criteria for each critical process step
6. Analyse the process maps

What knowledge is needed?	Who has it?	Who needs it?	Where is it?	Is it tacit or explicit?	What issue(s) does it address?
Creating IT usage Policy	External Professionals	IT Faculty	Knowledge Management	Tacit	No IT usage policy is in place
Computer Security	IT Security Professionals	IT Faculty	IT Professional	Tacit	Thefts occurring in communal areas
Computer Security	IT Security Professionals	IT Faculty	IT Professional	Tacit	Infected media infiltrating networked devices
Computer Security	IT Security Professionals	IT Faculty	IT Professional	Tacit	Suspected non-licensed products being used
End User Interactions	IT Professionals	IT Faculty	IT Professional	Tacit	Lack of training of end users

Figure 1 Knowledge Mapping Matrix (SHEI) *(W. Vestal, APQC, 2002)*

Success Factors in regard to Knowledge Maps can be broken down into a number of factors, taken from Trainmore-Knowmore (n.d):

- Participative: a map is created whilst using as many employees as possible
- Shared: this map is understood by most employees
- Synergistic: this map is concise and logical, and is created by taking the input of experts and collectively bringing it together
- Systemic: the maps elements can be combined logically to an integrated whole
- Simple: no complications within this map
- Visual: the map uses a visual framework that is made up of iconic elements
- Information rich: the map is informative in the sense that it aggregates a great amount of noteworthy references that help in the
- Problem solving process.

In essence, Knowledge Maps prove to be highly effective in acquiring all aspects of knowledge required to fulfil tasks within an organisation in a manner that makes it simple for all knowledge workers to acknowledge the architecture of the Map as well as utilize the information that been provided within the Knowledge Map.

2.2 Information Mapping

Information Mapping is not to be confused with Knowledge Mapping. As discussed prior to this, Knowledge Maps are tools that visually aid in descriptively displaying the architecture and knowledge resources available within an organisation. Information Mapping on the other hand, as stated by Robert E. Horn(March 1974), is writing without paragraphs whilst utilizing a set format that is there to guide the writer and reader along the easiest pathway to communication.

A further elaboration of this concept is quite nicely explained within "Training in Business and Industry" (March 1974, Vol11) as "A system of principles and procedures that can be used for: identifying, categorizing, interrelating and sequencing, and graphically presenting information required for learning and reference".

Information Mapping can be used as a methodology that is created specifically to make "technical communication in business and industry quicker and easier" (Robert E. Horn, March 1974).

Refer to Figure 2: Information Map Layout, for an example view of the layout of an Information Map.

With regard to the SHEI, we can divide our Information Map into 3 main steps:

- Analyse:
  Within this step, we look into the purpose of the map, as well as the readers' needs and the types of information it is going to contain. In essence this stage comprises of task-orientated content, whilst being reader focused.
- Organize:
  This step involves the previous step first being completed, and on that basis an overall structure of the information is created.
- Present:
  In this step, all of the information contained within the document is proof read, and clarified.

An example of an Information Map for this SHEI can be found in Figure 3: Information Map for Scottish Higher Education Institution.

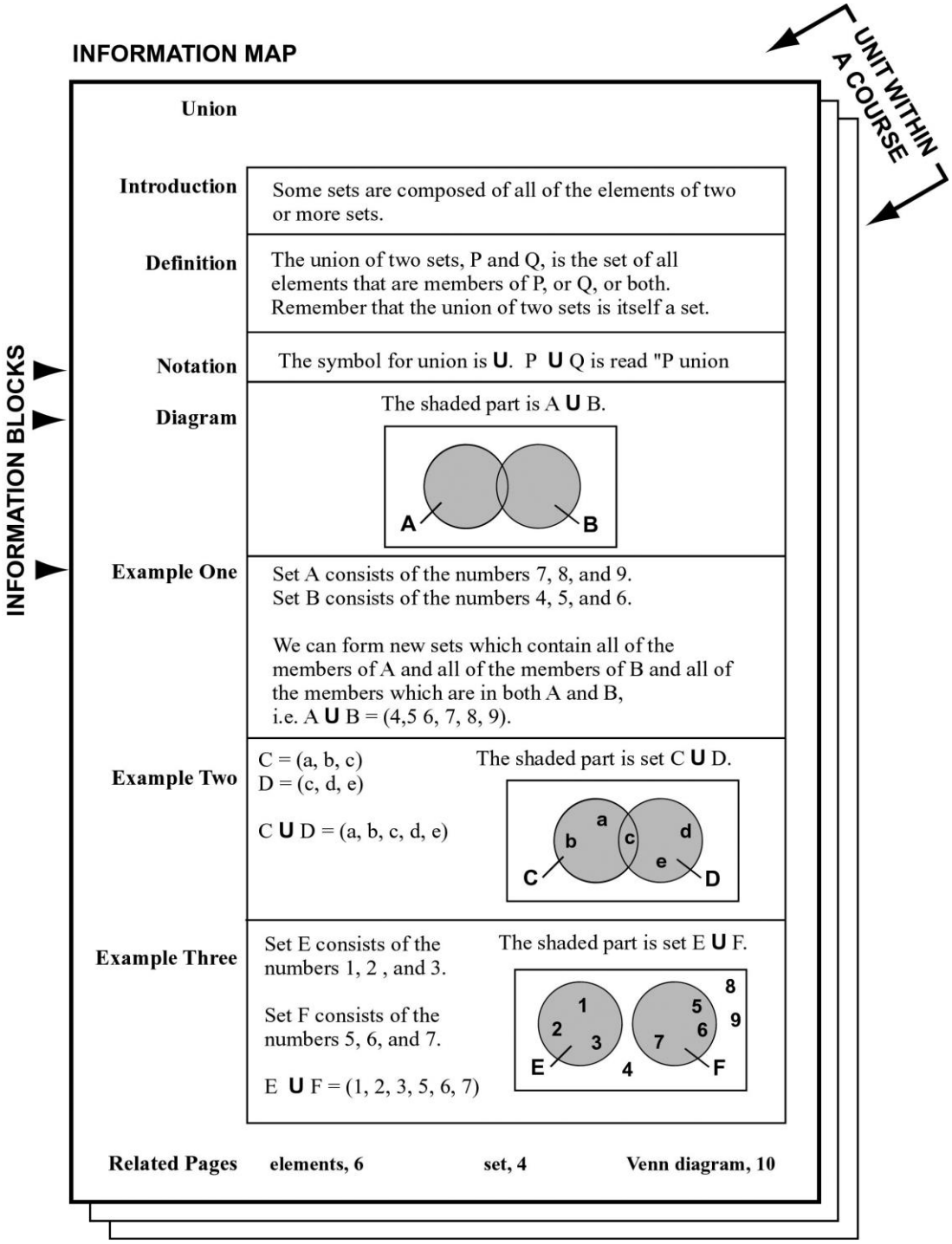


Figure 2 Information Map Layout *(Info Mapping Training, Page 3, Diagram 2)*

In summary, technical communication with organizations are based on the complexity and size of the organization. Information mapping can be taken as the response to these issues, whilst bringing together current learning research and instructional technology as a completely comprehensive methodology which in the end¸ results in more efficient communication.

Information Map of Scottish Higher Education Institution

Monitoring

The IT faculty will determine how the monitoring of all individuals within the SHEI is monitored, and what is monitored

Security

Policies need to be put in place, and all users will need to agree to the terms and conditions of those policy

Access Control

Before gaining access to communal areas, individuals will need to agree to policies put in place to manage access to public areas along with consequences of damage or misuse of equipment available within those areas

Policy Process

The policy processes that should occur, are displayed in the table below

Stage	Description
Policies for knowledge distribution and security within the IT Faculty(SHEI)	
1	Students needing to gain access to public areas, will be required to first sign an indemnity form as well as agree to the policies implemented for communal areas
2	All existing computer systems will be required to undergo intensive security and anti-virus scans, all new computers will be required to also be scanned and equipped with the relevant tools to avoid any possible breaches or infections
3	Policies will be put in place to layout the plan of action to be taken against individuals found in possession of and/or using non-licensed software on the premise of the SHEI
4	All individuals will be required to undergo user training in order to assist them with the policies and operation of equipment on the campus

Figure 3 Information Map for Scottish Higher Education Institution

2.3 Audits

An audit can be described as an act of inspecting an organization through a body that's independent of the organization in order to uncover discrepancies within the organization. The purpose of any audit, as stated by PwC, Australia (n.d), "The purpose of an audit is to form a view on whether the information presented in the financial report, taken as a whole, reflects the financial position of the organisation at a given date".

For the basis of this article, we will be utilizing an Integrated Audit mechanism as a method of evaluation. According to the Division of Administration and Finance (CSU, Long Beach) (n.d), there are more than one different types of audits that can be performed;

1. Financial Audits or Reviews:
   This type of audit essential checks and assures fairness, accuracy and reliability of an organizations financial data.
2. Operational Audits
   This form of audit utilizes the operational policies and achievements of the organization as well as evaluates the internal controls that form part of the university.
3. Department Reviews
   These analyse the usage of resources, security of assets as well as the universities policies and its regard to the laws in relation to them.
4. Information Systems Audits, as stated by Division of Administration and Finance (CSU, Long Beach) (n.d):
    1. General Controls Review
       A review of the controls which govern the development, operation, maintenance, and security of application systems in a particular environment. This type of audit might involve reviewing a data centre, an operating system, a security software tool, or processes and procedures (such as the procedure for controlling production program changes).
    2. Application Controls Review
       A review of controls for a specific application system. This would involve an examination of the controls over the input, processing, and output of system data. Data communications issues, program and data security, system change control, and data quality issues are also considered.

3. System Development Review

   A review of the development of a new application system. This involves an evaluation of the development process as well as the product. Consideration is also given to the general controls over a new application, particularly if a new operating environment or technical platform will be used.

For the purpose of the SHEI, the Information System Audit is the best type of audit to perform for evaluation purposes. Figure 4: SHEI Information System Audit Breakdown Example, outlines some of the criteria that an Information System audit would contain, but is not limited to.

Item	Information System Security Control Processes
6.0	Information Security Policy
	Information Security Governance
6.1	Information Security Organisation - Roles & Responsibilities
6.2	Information Security Monitoring
6.3	Information Security Incidents
	Physical Security
6.4	Physical & Environmental Security
	Personnel Security
6.5	Personnel Security for Information Systems
	Information Technology Security
6.6	Product & Media Security
6.7	Software & Network Security
6.8	Access Control Security

Figure 4 SHEI Information System Audit Breakdown Example

With regard to the above breakdown, it is evident that the audit will reveal crucial information about the state of current security policies that are in place within the institute. It will also reveal current systems that are currently in place to deal with physical and environmental security as well as access control mechanisms. All of these factors are relevant to evaluating the current status of the university in order to effectively be able to introduce a new and required policy and strategic usage framework.

2.4 Questionnaires

A questionnaire is a very commonly used tool that can be utilized to acquire information from large numbers of individuals, in the form of research or survey based questions. These are able to obtain subject, or in this context, faculty specific information. When performing surveys it is important to remember that there are a number of purposes that questionnaires fulfil, namely to get usable data that will be comparable and/or susceptible to analysis.

According to Data Collection in Context (1981), Ackroyd and Hughes defined three types of possible questionnaires:

- Factual Questionnaires

  These questionnaires are used to acquire information that can prove to be descriptive of the subject that is being questioned. This format of questioning will be the best option for the purpose of evaluating the SHEI.

- Attitude Questionnaires

  This type of questionnaire focuses more on user based input and opinions. These questionnaires are basically meant to be a form of opinion gathering.

- Explanatory Questionnaires

  This format of a questionnaire focuses on existing theories and/or hypotheses, or to introduce a new theory

The format of any questionnaire is traditionally laid out in a manner that consists of the same set of questions that are asked in the exact same consecutive manner, and by doing this there is always a better chance of the outcome (in terms of results) being more collected.

Questionnaires can be completed by the desired target market, using various methods of implementation. These methods vary from; a participant manually completing the questionnaire, the questionnaires could be posted or emailed to the target group and have a submission target date, to even utilizing an interviewer to carry out the questionnaire. This would involve the interviewer, questioning all individuals within the target market in a formally and well-structured manner, that is consist through the entire answering process.

As stated previously, a Factual Questionnaire would be the best tool to assist us in evaluating the SHEI, Figure 5: Factual Questionnaire, SHEI; shows a brief template of possible

questions that could be asked, in order for us to acquire useful information about the current state and management of the IT faculty along with how the Unions and Hierarchy of command within the SHEI affect the target group (in this case the target group are the students of the Institution)

Questionnaire for Scottish Higher Education Institution
With regard to access control to public areas within the establishment, how would you rate the security?
1. Excellent 2. Good 3. Average 4. Poor 5. Not visible
How positive are your interactions with other members of the faculty?
1. Extremely Positive 2. Very Positive 3. Moderately Positive 4. Slightly Positive 5. Not at all Positive
How effect is the leadership of your department head?
1. Extremely Effective 2. Very Effective 3. Moderately Effective 4. Slightly Effective 5. Not at all Effective
How fair are administrative procedures within this faculty?
1. Extremely Fair 2. Very Fair 3. Moderately Fair 4. Slightly Fair 5. Not fair at All
Are you satisfied with the senior administration at this University?
1. Extremely Satisfied 2. Moderately Satisfied 3. Slightly Satisfied 4. Neither Satisfied nor dissatisfied 5. Slightly Dissatisfied 6. Moderately Dissatisfied 7. Extremely Dissatisfied
How easy is it to get the resources you require for your studies?
1. Extremely Easy 2. Very Easy 3. Moderately Easy 4. Slightly Easy 5. Not at all Easy

Figure 5 Factual Questionnaire, SHEI (www.surveymonkey.com/s/faculty-satisfaction-template

2.5 Interviews

Interviews are generally tools that are used in conjunction with Questionnaires. These mechanisms are most commonly utilized by Human Management Resource departments within organizations. The effect of this mechanism is to put the interviewee under pressure by having a face-to-face (or in this modern day, we now perform "e-interviews" which are done with the use of the internet, and is still face-to-face but lacks the point of it being 'in-person').

According to BetterEvaluation (n.d), "Interviews are conversations between an investigator (interviewer) and a respondent (sources) in which questions are asked in order to obtain information." Interviewing forms part of both quantitative and qualitative forms of research evaluation. For the purpose of the evaluation of this Institute, interviews can be utilized in a manner from which we are able to collect research and data as well as narrative information in order to understand the current condition of the IT Faculty as well as the status of the Unions and how their decisions affect the running of the Faculty.

Interviews, besides the fact that they have a Questionnaire based structure in terms of questioning, they allow for the Interviewer (individual that is performing the interview) to better understand the interviewees (individual that is answering the questions) unique perspectives, opinions and overall understanding of the Institutions performance.

A really important aspect to remember when performing interviews, is that the interviewer needs to adhere to ethical standards. This list of standards include first ensuring that the interview has been scheduled at a certain time that has been conferred and agreed upon by both the interviewer and interviewee alike as this results in the interview being conducted with informed consent. Secondly, there should be no forceful behaviour imposed onto the interviewee where confidentiality and/or anonymity are concerned. If appropriate the interviewee should be given the opportunity to remain anonymous. Also it is important to remember that when interviewing individuals from vulnerable groups, it should be recognized that this could impose greater ethical issues.

Provided below, in Figure 6 Interview Example for SHEI, we can see a brief overview of what possible interview scenarios would be like when conducted within the Institution to aid in evaluating its current status.

Interview Breakdown SHEI

Name of Interviewer	
Name of Interviewee	
Place of Interview	
Date of Interview	

Questions

- Can you briefly describe your views on the current security policies within the IT faculty?
- What are your views on the how well the Union you have an alliance with, assists you.
- How often is equipment stolen from computer areas that are communally accessible by all of the students?
- How often are do you find that computers within these areas are infected with viruses?
- Do you feel the IT faculty is being managed correctly? What are you opinions surrounding this?

Figure 6 Interview Example for SHEI *(WHO, 2002, p31)*

3. Institutions' Competitive Position

3.1 SWOT

SWOT analysis, is a technique that as stated by BusinessLink (2009), "that is used as a strategic planning tool that can evaluate and manage internal and external factors that affect your organization."

SWOT is an acronym that stands for Strengths(S), Weaknesses (W), Opportunities (O) and Threats (T). In a business environment, when utilizing a SWOT analysis to look at your organization as well as competitors, you can begin to craft strategies that will aid in helping to distinguish your organization from your competitors and this will result in a more successful competitive position for the organization in the global market.

This tool can be carried for many different aspects of any enterprise, and not just necessarily for the organization as a whole. They can also be utilized for smaller aspects or processes within the organization. Projects, upgrades, system upgrades, policy implementation, as well as expanding of infrastructure (among a list of other things) can have their very own SWOT analysis performed in order to aid leaders/managers on the various aspects surrounding the initiation or implementation of said entities.

In Figure 7, SWOT Analysis of SHEI, a critical analysis of the SHEI has been performed and depicted with the aid of a table. From this we can deduce a number of factors that would and/or (quite possibly) been overlooked had we not performed such an analysis.

It is essential to also take note of the fact that when using this tool, it is always good practice to ensure the reliability and preciseness of all of the statements that are entered under the relevant points. It is also important to remember that a SWOT analysis should be taken lightly. The results of this can prove to be highly effective in assisting the organization positively. A SWOT analysis is sometimes called Internal-External Analysis.

Strengths	Weaknesses
• Able to cater for a large number of students • Offering communal areas for students to have the ability to do work • Established education institution • Unions have been established to aid both members and students	• Lack of policies in place to manage security and usage • Not sufficient resources available to handle thefts • Insufficient resources available to deal with computer infections occurring as well as on the networks • Users are not able to cope with the systems
Opportunities	**Threats**
• Promoting the point that the SHEI has sufficient facilities available • By assisting users by up-skilling, it will result in users being more self-sufficient	• The issue of Scotland wanting to be an independent entity of the United Kingdom, could be negatively consequential

Figure 7 SWOT analysis, SHEI

From the diagram above, we can see that there are a number of strengths that affect the Institutions image positively. The weaknesses can be dealt with by implementing the policies that are required to avoid those issues. With regard to threats, the issue of the Independence of Scotland from the United Kingdom is highly controversial. A vote was recently held in order to gather opinions on whether or the not the decision was acceptable, and the vote was lost. However, this does not void this issue from Threats, currently it is being appealed and the outcome of this is yet to be known. The severity level of this threat is extremely high, as this motion could cause a significant impact on the Scottish Higher Education Institution.

3.2 PESTLE

This method of evaluation is similar to that of SWOT analysis, in the sense that they both are tools that are used to find out the current status and position of an organization. And they can be used as a basis for future planning and strategic management (JiscInfoNet, (n.d)).

PESTLE is an abbreviation for Political (P), Economic (E), Sociological(S), Technological (T), Legal (L), and Environmental (E). According to cipd.co.uk(October 2013), "PESTLE Analysis is in effect an audit of an organizations environmental influences with the purpose of using this information to guide strategic decision making."

An easier way of understanding this evaluation tool is to refer to Figure 8, PESTLE Analysis of SHEI, from which we can see how this analysis points out core areas of the organization and assists us with evaluation and thus, in turn, gives us a foundation on which to base our information strategy.

According to BusinessLink (2009), "PESTLE is much more specific and is primarily focused on factors external to your organization and happening in a much wider world. It may be good practice therefore to build the use of these tools into your procedures to make them a regular feature of your project management and business planning strategies."

Category	Factor
Political	• HEI Policies of the UK
Economic	• The theft of computer equipment
Social	• Students safety due to thefts occurring
Technological	• Intranet Technology to assist in creating Knowledge Banks and enhancing training
Legal	• Scotland appealing to be declared its own entity
Environmental	• Possibility of impending natural disasters

Figure 8 PESTLE Analysis of SHEI

3.3 Porters five forces

This model was created by Michael E. Porter as a tool to assist companies in assessing the nature of an organizations competiveness and based on this to develop corporate strategies.

According to EntrepreneurialInsights (August, 2014), "The framework allows a business to identify and analyse the important forces that determine the profitability of an industry".

The 5 forces that were created as part of this model are as follows:

- Competitive Rivalry
- Threat of new Entrants
- Threat of Substitutes
- Bargaining power of Buyers
- Bargaining power of Suppliers

The bargaining power forces both are classified as Vertical Forces, while the other 3 forces are classified as Horizontal forces.

Competitive Rivalry refers to the degree or magnitude of rivalry between existing companies in the market. This is based on the number of companies that are within that competitive group. This number will result in the amount of competitive pressure that companies will undergo, as well as shape the market in terms of prices and strategies.

Threat of new Entrants deals with the fact that existing companies do serve as a competition on the global market, but new comers often come bursting with potential, and this creates an added stress to the organization. With this in mind, new entrants often first need to ensure that there are no barriers of entry when trying to get into that market.

Threat of Substitutes is another important force that is contained with the model created by Porter. This refers to the fact that there are a number of products currently available on the market, be it not in the same industry, that can server the same purposes as products that you are selling. And this high threat of substitutes will impact the company's decision in terms of its strategic approaches and pricing (if relevant).

Bargaining power of buyers is also a really important point within the model. This deals with the fact that, under the correct circumstances, and when the market is flooded with an abundance of companies that perform or sell the same goods/services, the buyers gradually gain the power to sway the market and affect how products or services are priced.

Bargaining power of Suppliers are often regarded as the top of any industry. Suppliers are a requirement for any organization to enter into any industry as all forms of companies and organizations depend on the supply of some form of raw material or service. With this in mind it is important to remember that when dealing with Suppliers, it is often advisable to try and build trust with one supplier rather than constantly changing suppliers. As this creates bad faith as well as it will not help you in anyway if you are ever in need of something urgently. Again, in regard to buyers, if the market becomes flooded with a number of suppliers of the same products, the companies/organizations gain the power to affect how suppliers price their goods or services.

Figure 9 below, depicts how the Porters model can be used for the SHEI to aid in our strategic development plans.

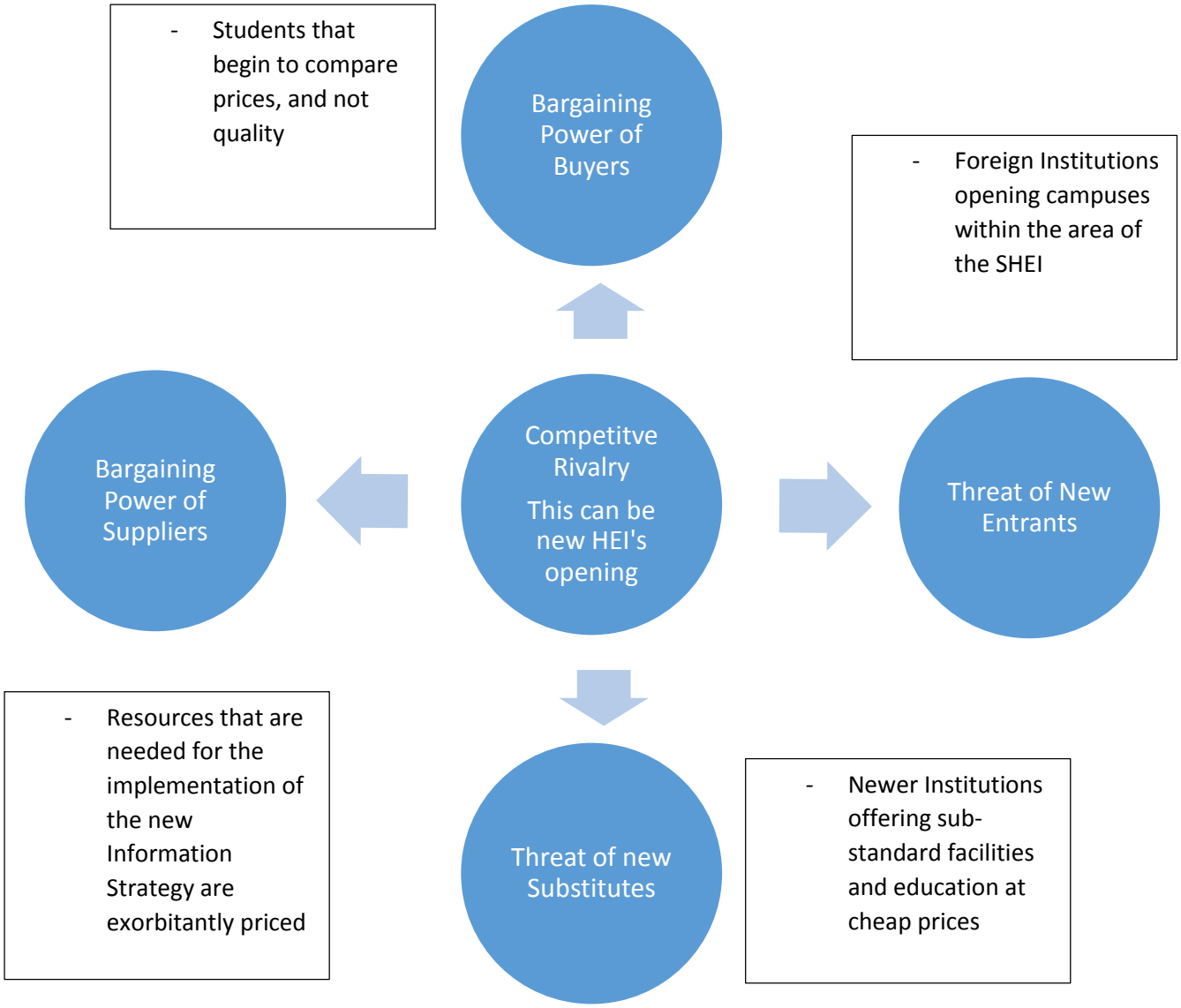


Figure 9 Porter's Model for SHEI

4. Methodologies utilized in Computer Strategies

4.1 JISC

According to Ann Hughes (1997), JISC is the Joint (J) Information (I) Systems(S) Committee(C) of the UK. It is an organization jointly funded by the four UK higher education funding bodies with the following mission:

"*To stimulate and enable the cost effective exploration of information systems and to provide a high quality national network infrastructure for the UK higher education and research councils communities.*"

When approaching any information strategy, the JISC toolkit becomes highly effective in aiding us with formulating effective Strategies.

Within the Strategic toolkit, there are a number of aspects that need to be looked at, and there after all of the collected information will be collected and displayed in a graph that aids us in creating a new Information Strategy.

Among these aspects are, Strategic Leadership, ICT Services, ICT Governance, Communications and Engagement, Shared Services, Enterprise Arch, and Maturity Models. These areas cover all of the parts of any Higher Education Institution within the United Kingdom.

When dealing with Strategic Leadership, this looks at the hierarchal order within the Institution and questions its functioning in depth. With focus on the Senior Management Teams and there connection with ICT Professionals.

ICT Services looks at whether or not there is communication between Senior Management and committees that are formed to deal with ICT issues, as well as whether or not the Senior Management teams contain individuals that understand and have knowledge of ICT. Along with ensuring that there is sufficient services offered within the Institution to cater for all ICT related issues.

ICT Governance goes into whether or not there are effectively documented ICT strategies in place within the institution that outline to objectives and goals of the faculty.

Communications and Engagement deals with whether or not the Senior Management have any channels of communication open with both ICT individuals, as well as Stakeholders and other members of the management team with regard to ICT related issues.

Shared services refers to whether or not the Senior Management team has knowledge of shared services that are offered and whether or not those services are beneficial to the institution.

Enterprise Architecture deals with whether or not Senior Management has any knowledge of the Enterprise Architecture that is affiliated with the Institution.

Lastly, the Maturity Model is a graph that depicts the level at which the organization is currently functioning at, and thus points out key areas to which we can focus our Information Strategies.

Figure 9, Maturity Model for SHEI, depicts a model for the Scottish Higher Education Institution which contains relevant information based on the IT faculty.

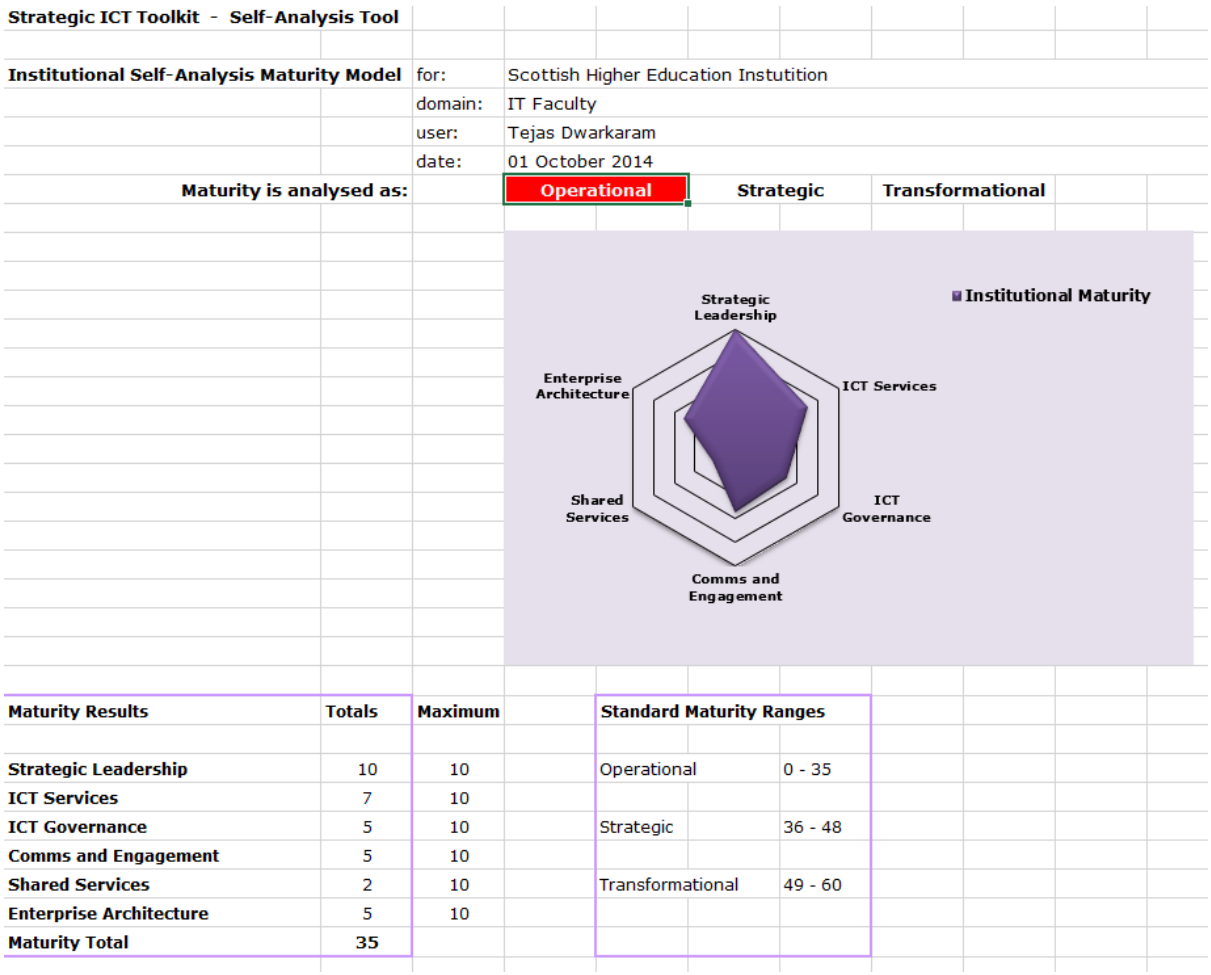
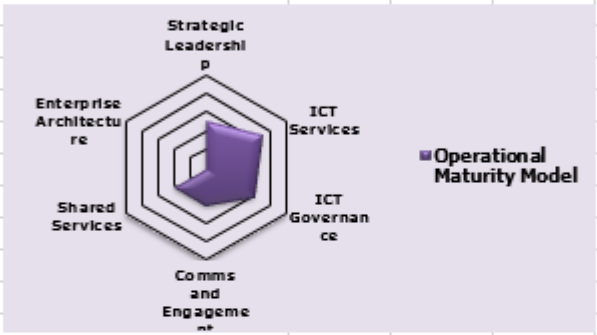


Figure 11 Maturity Model for SHEI

Maturity Models Enablers		Operational	Strategic	Transformational	Ratio
Strategic Leadership		5	5	10	10
ICT Services		7	8	9	10
ICT Governance		6	5	8	10
Comms and Engagement		4	7	8	10
Shared Services		4	8	9	10
Enterprise Architecture		0	3	6	10
Maturity TOTAL		26	36	50	60
Maturity Range		0-35	36-48	49-60	60



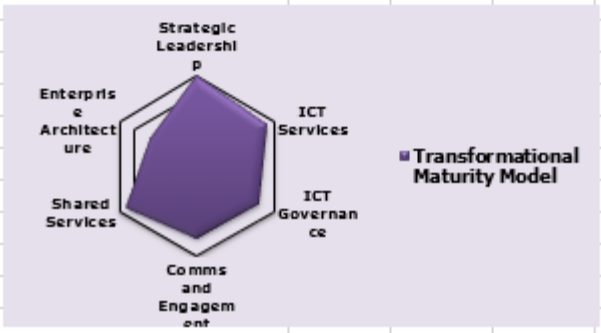


Figure 12 Maturity Model for SHEI 2

5. Institutions' Information Strategy

Introduction

An established foundation has been created, from which we can now gather and understand the different tools, mechanisms and processes that are appropriate and relevant to the Institution. With this in mind, we can now develop an effective Information Strategy. In order to achieve this, stakeholder participation is extremely important. With the aid of well-developed strategic plans, as well as concise utilization of the above mentioned methods of evaluation and strategic implementation methods, we can compile a concrete document along with the newly created policies and present this to the relevant stakeholders. This will assist in gaining their participation, as it shows good planning and knowledge as well as adequate reasoning as to why such steps need to be taken along with how it will positively affect the institution.

Planning Context

At this very moment in time it is difficult to foresee or predict the status of this Institution in the future to come due to external factors such as the Threats that were discussed within our SWOT analysis. But what we can be certain of is that in the short term, we can definitely see changes occurring within the Institution, which are driven by social and political factors as well as internal issues that brought about the new policy implementation in the first place. Currently we can understand that it is necessary that higher education institutions are more agile if we are to maintain UK's position as a world leader in education and research during this economic downturn that is occurring within the global market. The new information strategy will need to be equally agile and enterprising if it is to be successful.

Responsibilities

This is a departmental strategy rather than a university strategy, so the responsibility for delivering the components of the Strategy is distributed amongst the Seniors and Administrative staff within the Scottish Higher Education Institution. The strategies success will be completely reliant on a well-co-ordinated plan of action through the Institution that is monitored by clear and effective governance procedures.

The Purpose:

'To enable the Institution to reach its full potential, with regard to its IT Faculty and running of certain aspects of the Institute through the utilization and provision of high quality information resources, systems, technologies and services that will aid in supporting excellence in both academic and business success'

Our Values

- Placing emphasis on the Staff and Students of the SHEI
- Creating a lifestyle and culture of learning and empowerment
- Ensuring facility security
- Encouraging Staff to be productive and more self-sufficient
- Creating a secure technological environment within the Institution

Strategic Aims:

This strategic policy contains a number of vital components. These can be classified as:

Aim One: Security (Physical and Logical Systems)

To upgrade our IT Infrastructure to allow individuals to connect to information, systems, and technologies as and when they require. As well as review existing and/or create new policies to deal with communal access, as well as media devices that are allowed access to the institutions networks. Also to do this in an environmentally and financially viable manner to successfully cater for an intuitive and interactive lifestyle at the Institution whilst still maintaining the Universities global position.

Aim Two: Learning and Library Resources

To create, and/or upgrade existing, high standard user-focused library services for our students and staff in order to empower a culture of creativity, learning and research. Which, if implemented effectively and efficiently, will result in a higher level of user sufficiency.

Aim Three: Information Systems and Services

To perceive to achieve and deliver high quality academic and administrative information through online systems, services and support that aid strategic and operational decision making. Whilst implementing new procedures and policies to deal with non-licensed software being utilized on campus.

Aim Four: Digital Technologies and E-Learning Programs

To deliver the best possible user experience, as well as facilitate high quality innovative researching, teaching and learning. By implementing effective E-learning programs and Digital Technologies, we hope to alleviate the issue of users being unable to use the systems in place, and in turn this should increase user self-sufficiency.

Aim Five: Successful Policy Implementation and Adherence Campaign

Once the policy has been created and formally accepted by all of the concerned relevant stakeholders, training programs will be put in place in order to educate the staff and students about the new changes as well as the consequences of not abiding to the new policies.

Strategic Aims and Operational Objectives

Aim One: Security(Physical and Logical Systems)

To upgrade our IT Infrastructure to allow individuals to connect to information, systems, and technologies as and when they require. As well as review existing and/or create new policies to deal with communal access, as well as media devices that are allowed access to the institutions networks. Also to do this in an environmentally and financially viable manner to successfully cater for an intuitive and interactive lifestyle at the Institution whilst still maintaining the Universities global position.

We will achieve this by:

- Utilizing an Identity Management System with the main function of uniquely identifying users (both staff and students) throughout their time at the Institution. With this system in place, a Single Sign-on mechanism will be in place, which will allow the use of data and/or services to which an access level will grant authorization to. Based on these individual user accounts, we will be able to also track the usage of network resources, and establish whether or not they are being utilized appropriately and effectively.
- Secure “off the network” computer systems, will be placed in areas where there is communal access given to students. Theses secure systems will be utilized to scan any portable media devices that students are utilizing in order to perform with their studies.
- All communal areas will be restricted with access control mechanisms that function on RFID tags. With this in place we hope to reduce the amount of thefts that occur within these areas. And if occurring, the system will be checked for corresponding time stamps.

- Implementing a University wide Resource Management System, for the borrowing of equipment, as well as a Timetabling system for teaching spaces.

Aim Two: Library and Learning Resources

To create, and/or upgrade existing, high standard user-focused library services for our students and staff in order to empower a culture of creativity, learning and research. Which, if implemented effectively and efficiently, will result in a higher level of user sufficiency.

We will achieve this by:

- Allow staff and students to fully utilize the academic materials and resources made available by the Institution and be directed to relevant sections based on their academic field of study, by providing Enhanced Learning and Research Support.
- Supporting IT and Digital Literacy for staff and students by providing resources along with training opportunities to improve the utilization of IT and digital technologies and equipment within the faculty.
- Creating clear statements on user entitlements in terms of access to information resources, and systems and technologies.

Aim Three: Information Systems and Services

To perceive to achieve and deliver high quality academic and administrative information through online systems, services and support that aid strategic and operational decision making. Whilst implementing new procedures and policies to deal with non-licensed software being utilized on campus.

We will achieve this by:

- Implementing or expanding existing intranet facilities to manage the systems that will be put in place.
- Implementing a Knowledge Bank within the Institution that will house key information that can be accessed across the Faculty.

- Creating an effective support system that will include logging requests, tracking progress, accessing service information as well as searching of the knowledge base.
- Ensuring that devices that undergo security and virus verification when being utilized in Communal Areas are also checked for non-licensed software.
- Converting current Institution data sets and categorising them based on their content and logging them away with high access level required.

Aim Four: Digital Learning and E-Learning Programs

To deliver the best possible user experience, as well as facilitate high quality innovative researching, teaching and learning. By implementing effective E-learning programs and Digital Technologies, we hope to alleviate the issue of users being unable to use the systems in place, and in turn this should increase user self-sufficiency.

We will achieve this by:

- Implementing a Virtual Learning Environment which will be able to deliver an environment that can support students and staff, and encouraging an informed and engaged practice-led culture.
- Creating collaborative initiatives between IT and Academic staff through institutionally integrating, supporting and maintaining Teaching and Researching environments that are aligned to the academic portfolio of the Institution.
- Creating a Staff tool that will enable staff to maintain awareness of as well as influence trends in their academic disciplines and development of the Institution.

Aim Five:	**Successful Policy Implementation and Adherence Campaign**

Once the policy has been created and formally accepted by all of the concerned relevant stakeholders, training programs will be put in place in order to educate the staff and students about the new changes as well as the consequences of not abiding to the new policies.

We will achieve this by:

- Initiating training programs, for all of the new mechanisms and systems that have been introduced with the new changes.
- Hosting online and interactive workshops, to inform both staff and students of new policy changes that are taking place, and the requirements of these.
- Gradually implementing major changes, such as the introduction of Single Sign-on systems, and RIFD tag implementations, over a period of time, so as to not rush the process, but execute it in a manner that allows the staff and the students to fully understand the extent of the changes that are taking place. And to also obviously, avoid any major errors occurring as this would result in a cost implications on the part of the Institution.
- Acquiring the assistance of the Unions, for both students and staff to assist in creating awareness of all of the new systems and changes that are being put into action.

Implementation and Resources Plan

This plan will be developed individually for each strategic aim that forms part of this strategic plan. It will identify those that are in-charge of deliverables for that component as well as the timeline given for each of these aims to be reached. Included within this will be guidelines for good practice. Staff that are assisting in implementing these changes will also have support given to them, for the development of their project management skills.

Monitoring the Information Strategy

Whilst keeping in mind that the Information Strategy is aligned with the Institutions business objectives and strategic visions, a governance framework will be implemented to ensure this.

Key Performance Indicators will be used along with the Institutions business plan, to record and monitor the progress through the faculty.

The success of the Information Strategy will be realized when:

The issues that were highlighted from within the faculty begin to decrease, in terms of theft and illegal software, as well as insufficient user training. The new Information resources and technologies (which include the services and systems that will be introduced), begin to have a positive effect on the Institution reaching its Strategic Visions.

Unions have effectively informed their members and assisted the Institution in swiftly guiding and creating awareness of the new systems.

The stakeholders are happy with the new Information strategy and agree that the strategy assisted the university in creating a controlled environment for the IT Faculty.

Key Performance Indicators

- Awareness of the Information Strategy is known to all staff and students.
- Theft in Communal areas has been reduced.
- Users show a better understanding of systems, and thus the sufficiency level is above par.
- The knowledge bank system that was implemented assists the staff in gathering new information and knowledge to expand their understanding on various topics.
- There are less breaches of security, in terms of infected portable media devices, or illegal software being used on the premises of the Scottish Higher Education Institution.

6. Conclusion

In essence, an effective Information Strategy is one that is planned correctly by using the correct tools and mechanisms for both evaluation and research. This results in the Strategy being able to focus on relevantly important aspects within the institution and thus targets key problem areas.

With regard to the Scottish Higher Education Institution, the Information Strategy that has been proposed will be successful if we take into consideration the key factors that affect its success. These factors include, sufficient awareness created by the Staff, Unions and the Strategic Policy Implementer, along with appropriate implementation techniques that ease the desired changes and new systems into the organization whilst not completely performing a full change overnight. This results in all relevant parties being given the opportunity to grow and evolve with the changes that are taking place, and this will only mean that the Strategy will be successful.

The Scottish Higher Education Institutions main problem area is that of knowledge not being effectively distributed and this results in staff members not being adequately equipped to handle day to day operations as well as assist students with their relevant issues.

The proposed Information Strategy has been carefully thought through, and taking all key factors into account, should ensure a brighter future for the Institution and Stakeholders alike.

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