

**5-YEAR INFORMATION SYSTEM STRATEGIC PLAN OF
SANTIAGO LGU**

**SHAOLINE JANE C. MONTERO
JASPER JON D. DAGDAG
MARIA JOY O. ESTEVES**

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Chapter I

INTRODUCTION

Project Context

The Information System Strategic Planning or ISSP is a precondition to promote aligned and logically planned ICT initiatives and resource investment for the organization. It provides the strategic fit of all programs to match the intent, context, capability, and risks defined by the organization as a whole. Information System Strategic Plan is an exercise that helps enterprises to determine the optional path for fulfilling their business objectives. It provides a way to plan and manage the use of information through a comprehensive and usable framework which links business objectives which it is focusing an information technology. In addition to this, ISSP is a systematic process of envisioning a desired future, and translating this vision into broadly defined goals or objectives and a sequence of steps to achieve them.

According to Hill & Jones (1997), Strategy is an action; a company takes to attain one or more of its goals. Strategic planning is not a new concept in managing organizations. For a strategy to be successful it must, among other things, be a good strategy and be well executed. Bill Gates (1999) stated that a bad strategy will fail no matter how good your information is and lame execution will stymie a good strategy.



ISSP helps an organization to do a better job. It ensures that members of the organization are working toward the same goals, assess and adjust the organizations' direction in response to a changing environment.

Information System Strategic Plan becomes prominent in corporations during 1960s and remains an important aspect of strategic management. ISSP is ranked among the highest priorities and agenda. The reason why ISSP is in regards is due to the opportunity that may come from the Information System/Information Technology in which it is beneficial and therefore advantageous to any organization that implements this practice. It is executed by strategic planners or strategist, who are involve many parties and research sources in their analysis of the organization and its relationship to the environment that competes.

The proponents chose the municipality of Santiago to conduct the study. Santiago is a fourth class municipality in the province of Ilocos Sur, Philippines. It consists of 24 barangays with the total area of 46.36 km. sq. Santiago Cove is located at Sabangan as one of the tourist destinations where it is dubbed as the "Boracay of Ilocos Sur" because of its white sands. Furthermore, Santiago is the headquarters of the Ilocos Sur Electric Cooperative (ISECO), which distributes electricity to the entire province.

One major issue is the connectivity. Each office has its own internet connection but there is no control in the use of the internet. Some offices use wired connection and they do not use file sharing because the devices are not properly configured.



Another issue is the storing of information. According to the Administrative Officer IV (Mr. Bobby V. Pasion), they generally store information/data in the computer itself. They don't have databases at all.

When it comes to the flow of their transactions like issuing permits, it is said to be that they are engage in manual transaction. Furthermore, Santiago municipal hall has no ICT infrastructure and ISSP as well.

History of Santiago LGU

As soon as the Spaniards colonized the Philippines, Spain sent missionaries to spread Christianity, one of their purposes in their colonization. Christianity was then spread throughout the Philippines. The Spaniards organized groups called pueblos and divided these into sitios for easier proselytization and evangelization. From then on, the pueblo built tribunals for the Spanish government and churches and convents for the missionaries to live. Because the Muslims were the champions of Islamic religion and because they considered war as an occupation and piracy as a hobby, they raided Christian pueblos along China Sea coast of the Philippines. In June 1578, Spain started the Moro Wars in Jolo. This aggressive act marked the beginning of a long, bloody conflict between Spaniards and the Moros. In 1602, Spain sent punitive expeditions to Zamboanga, Cotabato and other places to curb the rising tide of Moro depredations. In the course of time the Moro continued to go to warpath and raid northern islands. Their raids rose to terrifying heights especially after the withdrawal of the Spanish garrison from Jolo (1646) and in Zamboanga



(1662). To counteract the rising tide of Moro piracy, Zamboanga was refortified in 1719 and other Spanish ports were constructed. Watchtowers were built along the seacoasts from Mindanao to Luzon. Armed galleys and frigates patrolled the sea-lanes. The Moros stopped the raids for a while. The Moros renewed their piratical forays. In 1717, they swept the Visayan Islands and attacked Appari and Northern Luzon. According to an old resident, Moro pirates entered the pueblo known today as Santiago in their return to Jolo. Guards in the watchtowers sounded their trumpets warning all the people of the pueblo of the arrival of the pirates. The church bells also rang alarming the people that pirates are fast approaching the shore. The people rushed and got their available arms like bolos, bows and arrows and fought the pirates boldly. Sporadic battles ensued. These lasted for few hours. As the battle went on, the missionaries stationed in this place took the image of St James the Greater which they brought with them from Spain and held it high facing the seashore praying fervently the rosary with few people, for the safety and victory of his Christian followers. The Moros ran away and fled southward in their kumpits leaving behind their dead. After the battle, a solemn mass was held in the church. The missionary told the people that due to the great intercession and miraculous protection of the image of St. James the Greater from the Moro pirates, this pueblo was saved and in his honor, this town was named SANTIAGO (Spanish for Saint James).



Statement of Objectives

This study aimed to develop the five – year Information Systems Strategic Plan for the LGU of Santiago, Ilocos Sur.

Specifically, it sought to answer the following:

1. To identify the existing usage of Information and Communication Technology resources of Santiago LGU in terms of :
 - a. hardware;
 - b. software; and
 - c. people ware
2. To create the designs needed to the Five – Year Information Systems Strategic Plan for Santiago LGU; and
3. To determine the validity of the Five – Year Information Systems Strategic Plan of Santiago LGU in terms of:
 - a. Content
 - b. Usability
 - c. Functionality

Purpose and Description

The Information System Strategic Plan process is intended to ensure that technology activities are properly aligned with the growing needs and strategies of the Santiago LGU. The objectives of Information System Strategic Plan are wide and cover all aspects necessary to smooth the running of the transactions of Santiago LGU. These objectives include: aligning IT with the business, gaining competitive advantage, identifying



new and higher payback applications, increasing top management commitment, improving communication with users, forecasting IT resource requirements, allocating IT resources, developing information architecture and increasing visibility of IT. The importance of strategic information systems planning has increased because of the popularity of IS in today's organizations together with the increased pressure to control IT assets. Also because organizations look to obtain the maximum benefit from their resources and reduce risk as much as possible .Importance of ISSP arises to produce a strategic plan that addresses the future needs for IT/IS resources in accordance with the business objectives.

It is very useful to the municipal employees, customers (people of Santiago) and to the other researchers.

Municipal Employees. The ISSP will help the employees to communicate easily with other employees and other facilitators of Santiago LGU. Furthermore, it would help them in the smooth flow of communication.

Clients. This plan will help the clients of the municipal hall of Santiago to make their task be done faster. Once, Santiago LGU has its own information system strategic plan, people of the town would not hesitate to visit their municipal hall because they know that they would not wait for a long time before they process the things they intended to do.



To Other Researchers. This research opens the door for further research along with Information System Strategic Plan. It will also use as a basis for the techniques of making development plans as well as pursuing capstone projects in the field of ICT.

Scope and Limitation

This study aimed to develop the 5 -Year Information Systems Strategic Plan for the LGU of Santiago, Ilocos Sur. The ISSP concentrates on the conceptual framework for information systems and network infrastructure plan that will cover only the Santiago LGU. The proposed systems will cover some offices only such as: Office of the Mayor, Office of the Municipal Accountant, Office of the Civil Registry and the Office of the Municipal Assessor. With these systems, there are some offices that will be affected such as: MPDC, OME, MSWDO and MBO. For the network infrastructure, the ICT personnel will only have the responsibility for managing the ICT resources.

As the study imparts the network connection through the offices within the Santiago LGU, the municipal employees are the one who have the right to access to the internet. The clients/general public should ask permission first to the ICT personnel so that they will connect to the network. In addition, the study does not include the testing of the signal strength to prove its performance because it is only a plan. Furthermore, the study is limited only for proposal; it does not include its implementation or maintenance yet.



Chapter II

REVIEW OF LITERATURE

This section contains literature and studies reviewed by the researchers, which have been found relevant to the study. The following topics are discussed according to:

1. Hardware
2. Software
3. People ware
4. MITHI-ICT

Hardware

In the article published by the Central Board of Secondary Education of India, The term computer hardware refers to the physical components of a computer, namely Keyboard, Monitor, Mouse, and Printer, including the digital circuitry. Computer hardware is an integral part embedded in all modern day automobiles, microwave ovens, electrocardiograph machines, compact disc players, and other devices. The hardware of a computer is not changed frequently, in contrast with software and data. The present computers are much advanced in terms of processing speed and have an efficient memory structure.

According to Barnatt (2014) hardware refers to all of the physical parts of a computer system. For a typical desktop computer this comprises the main system unit, a display screen, a keyboard, a mouse, a router/modem (for connection to the Internet), and usually a printer.



Speakers, a webcam and an external hard disk for back-up storage are often also included. Many of these items are integrated into a single unit on a laptop or other form of mobile computer.

Based on the article published by openprojects.org, hardware is a comprehensive term for all of the physical parts of a computer, as distinguished from the data it contains or operates on, and the software that provides instructions for the hardware to accomplish tasks. The boundary between hardware and software is slightly blurry - firmware is software that is "built-in" to the hardware, but such firmware is usually the province of computer programmers and computer engineers in any case and not an issue that computer users need to concern themselves with.

In addition, according to Emberton (2016) hardware is best described as any physical component of a computer system that contains a circuit board, ICs, or other electronics. A perfect example of hardware is the screen on which you are viewing this page. Whether it be a computer monitor, tablet or smartphone; it's hardware. Without any hardware, your computer would not exist, and software could not be used.

Software

Software is a generic term for organized collections of computer data and instructions, often broken into two major categories: system software that provides the basic non-task-specific functions of the computer, and application software which is used by users to accomplish specific tasks.



System software is responsible for controlling, integrating, and managing the individual hardware components of a computer system so that other software and the users of the system see it as a functional unit without having to be concerned with the low-level details such as transferring data from memory to disk, or rendering text onto a display. Generally, system software consists of an operating system and some fundamental utilities such as disk formatters, file managers, display managers, text editors, user authentication (login) and management tools, and networking and device control software.

Application software, on the other hand, is used to accomplish specific tasks other than just running the computer system. Application software may consist of a single program, such as an image viewer; a small collection of programs (often called a software package) that work closely together to accomplish a task, such as a spreadsheet or text processing system; a larger collection (often called a software suite) of related but independent programs and packages that have a common user interface or shared data format, such as Microsoft Office, which consists of closely integrated word processor, spreadsheet, database, etc.; or a software system, such as a database management system, which is a collection of fundamental programs that may provide some service to a variety of other independent applications.

Software is created with programming languages and related utilities, which may come in several of the above forms: single programs like script



interpreters, packages containing a compiler, linker, and other tools; and large suites (often called Integrated Development Environments) that include editors, debuggers, and other tools for multiple languages.

According to Brandon (2006) the vast amount of software is available today in a wide variety of capabilities, applicability, platform requirements and prices. These software products significantly enhance the managers of managing an organization in almost all aspects, including selection, planning, scheduling, execution, control, risk and communications. Managers should therefore be aware of the types of tools available and the features and applicability of those tools.

According to Harkins (2011) states that open source is here to stay. Nearly four out of five developers use open source software for development or application deployment. The success of LAMP (Linux, Apache, MySQL and PHP) is a proof that open source is a strong contender for resources. Open source refers to software that is free to public. More specifically, the software's source code is available to the public to use and modify. You can use the program as is or modify its source code to suit your needs, without fear of legal reprisals. Technically, open source refers to a great deal more than free stuff. It defines copyright, licensing, domain and consumer issues for this special software niche.

Peopleware

Peopleware refers to the human role in an IT system. In many cases, peopleware forms a kind of "conceptual triangle" with hardware and



software. The term refers to human talent as a kind of commodified piece of an IT process and a key part of providing various technical business models and other planning resources.

Examples of peopleware include various job roles that are commonly understood as parts of an IT process. These include computer engineers, website designers, technicians and other IT specialists, such as database administrators or networking specialists. Those who are classified under the broad umbrella of peopleware typically hold key certifications in these and other areas of IT specialization.

The use of the term peopleware has led to a vibrant debate about how companies view human talent. Many individual IT specialists, bloggers and others see this type of classification as demeaning, and argue that human workers are not resources but independent parts of a team structure. As such, classifying professionals as peopleware promotes a simplification that can be harmful to corporate relationships. This issue is likely to become more prevalent in IT as corporate cultures often clash with the interests of independent knowledge workers who hold the kinds of talent that businesses need to achieve their goals. (Cory and Dale Janssen, 2016)

According to Emberton (2016) the first term coined by Peter G. Neuman in 1977, peopleware refers to the role people play in technology and the development of hardware or software. It can include various aspects of the process such as human interaction, programming, productivity, teamwork, and other factors.



MITHI-ICT

According to the article published by dbm.gov.ph (2013) Medium-Term Information and Communications Technology Harmonization Initiative is a process that will help the E-Government Master Plan (EGPM) with a bottom-up perspective of their ICT needs, which shall then be “harmonized” for inclusion into the EGPM.

According to the article published by mithiph.wordpress.com (2013) the Government-Wide Medium-Term Information and Communications Technology Harmonization Initiative (MITHI) aims to foster synergy across government by developing inter-operable ICT systems that will empower every sector of the government and are responsive to the needs of the people. MITHI is designed to synthesize ICT operations among all government departments and agencies, ensuring coherence and compatibility among ICT programs and projects across government, as well as their alignment with the Administration’s five Key Result Areas (KRAs): integrity of environment, inclusive growth, poverty reduction, peace and rule of law, and most especially, good governance.

The MITHI-ICT Profile Checklist was used to determine the current existing usage of ICT resources of Santiago LGU.



BIBLIOGRAPHY

Published Materials

Brandon, D. (2006). Project Management for Modern Information Systems, IRM Press, USA

O'brien, J. & Marakas, G. (2005, January 14). Management Information Systems. McGraw-Hill Companies Inc.

Unpublished Materials

Mendoza, Z. V. B. (2014). Five-Year Information Systems Strategic Plan of North Luzon Philippines State College Thesis. DMMMSU-MID La Union Campus, San Fernando City, La Union

De Austria, T. R. Jr. (2010). Saint Louis College 3-Year Information and Communications Technology (ICT) Development Plan Thesis. DMMMSU-MID La Union Campus, San Fernando City, La Union

Online Resources

Computer Hardware. Retrieved from
<http://csbe.nic.in/Chapter%201&20computer%20%for%20fmml.pdf>

Hardware. Retrieved from http://www.openprojects.org/hardware_definition.htm

ICT Profile Checklist. Retrieved from
https://www.google.com.ph/url?sa=t&rct=j&q=&esrc=s&source=web&cd=7&ved=0ahUKEwj4r_va3KvLAhVBIZQKHQWJAukQFghCMAY&url=http%3A%2F%2Fwww.ncc.gov.ph%2Ffiles%2F2012ictsurvey.doc&usg=AFQjCNEBjoL2rROpm5IpCykIDyYhB7ILXg&cad=rja

Information Systems Strategic Planning. (2009-2010). Retrieved from
<http://www.sidathyder.com.pk/issp.html>

Information System Strategic Planning Practitioner's Note -draft version. (2009, December 31). Retrieved from <http://www.scribd.com/doc/24641437/INFORMATION-SYSTEM-STRATEGIC-PLANNING-PRACTITIONER-S-NOTE-draft-version#scribd>

MITHI Cluster Plenary (2013). Retrieved from
<https://mithiph.wordpress.com/2013/10/22/69/>



MITHI-ICT (2013). Retrieved from

[https://www.google.com.ph/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=0ahUKEwiA5N7P3avLAhVBlJQKHSwlAvoQFggpMAI&url=http%3A%2F%2Fwww.dbm.gov.ph%2Fwp-content%2Fuploads%2FMITHI%2F\(2\)%2520MITHI%2520Overview%2520-%2520R.%2520Moya.pptx&usg=AFQjCNHzXQV47zDo-VLjtMXYfo6OC-INMQ&bvm=bv.116274245,d.dGo&cad=rja](https://www.google.com.ph/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=0ahUKEwiA5N7P3avLAhVBlJQKHSwlAvoQFggpMAI&url=http%3A%2F%2Fwww.dbm.gov.ph%2Fwp-content%2Fuploads%2FMITHI%2F(2)%2520MITHI%2520Overview%2520-%2520R.%2520Moya.pptx&usg=AFQjCNHzXQV47zDo-VLjtMXYfo6OC-INMQ&bvm=bv.116274245,d.dGo&cad=rja)

Barnatt, D. (2014). Hardware. Retrieved from

<http://www.explainingcomputers.com/hardware.html>

Emberton, N. (2016). Retrieved from

<http://www.computerhope.com/jargon/h/hardware.htm>

Emberton, N. (2016). Peopleware. Retrieved from

<http://www.computerhope.com/jargon/p/peopware.htm>

Hill, C. & Jones, G. (2009). Strategic Management Theory: An Integrated Approach. Retrieved from
<https://www.google.com.ph/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&ved=0ahUKEwiqoMD6i7LLAhWIJpQKHcazAH8QFggtMAQ&url=http%3A%2F%2Fhttplibserver.carleton.ca%2F~ianlee%2Fcarleton%2F479%2Fch01.ppt&usg=AFQjCNEVRExywkMIDiqlgT5QTQguKvf73w&cad=rja>

Janssen, D. (2016). Peopleware. Retrieved from

<https://www.techopedia.com/definition/5545/peopleware>

National Computer Center: ICT Plans. Retreived September 4, 2013, from

<http://www.ncc.gov.ph/default.php?a1=2&a2=2&a3=0>

Susan Harkins (2011). 10 Terms and Concept Related to Open Source. Retrieved from <http://www.techrepublic.com/blog/10-things/10-terms-and-concepts-related-to-open-source/>

White C. (2013). Introduction to Data Communications and Networking: A business User's Approach. ISBN no. 10-133-62646-7 Retrieved from <http://oss-watch.ac.uk/resources/whoneedsource>