

RESEARCH PAPER

KNOWLEDGE MANAGEMENT SYSTEM: PILLAR FOR ACADEMIC NETWORK

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Accepted 17 May 2016

ABSTRACT

Through the assessment of the existing information culture as well as assessment of the existing technology culture of the colleges of the Systems Technology Institute (STI) Academic Network and utilizing the descriptive method of research, this study was able to recommend a Knowledge Management System design that can bridge the gap between information culture and technology culture of the network. More importantly, it was able to recommend an organizational structure that is suitable for the Knowledge Management System of the Academic Network; was able to identify tools and technology adaptable for the Knowledge Management System as applied to the academic network; and was able to recommend a plan of action for the implementation and sustainability of the Knowledge Management System for the Academic Network. The recommended Knowledge Management System design aimed to provide a pillar that would utilize technology in promoting information sharing, awareness, communication and collaboration within and among the members of the academic network. It would enable all the members of the network to seamlessly and easily connect to the information they need, whenever they need it, wherever it resides and to be able to use it effectively for research, learning, teaching and administrative purposes.

KEYWORDS: technology for education, Knowledge Management System, academic network, information management, technology for collaboration, technology for information sharing

1. INTRODUCTION

Contemporary developments in educational management emphasize regular and periodic evaluation and assessment of policies in terms of efficiency and effectiveness in attaining objectives. Furthermore, it is also important to periodically check the system on how these policies, procedures and guidelines are disseminated to various constituents and end users to ensure proper implementation of the said concerns.

Technology is a vital factor in properly disseminating these policies, procedures and guidelines: Internet is a massive electronic and communication network that connects computers of businesses, consumers, government agencies, schools and other organizations worldwide which exchanges information seamlessly using open, nonproprietary standards and protocols (Potter, 2003).

Knowledge Management System (KM System) refers to a system for managing knowledge in organizations for supporting creation, capture, storage and dissemination of information. It can comprise a part (neither necessary nor sufficient) of a Knowledge Management initiative.

The idea of a KM system is to enable employees to have ready access to the organization's documented base of facts, sources of information, and solutions. For example a typical claim justifying the creation of a KM system might run something like this: an engineer could know the metallurgical composition of an alloy that reduces sound in gear systems. Sharing this information organization wide can lead to more effective engine design and it could also lead to ideas for new or improved equipment. (Benbya, 2008)

Intranet is a network inside an organization that uses Internet technologies (such as Web browsers and servers, Transmission Control Protocol (TCP)/ Internet Protocol (IP) network protocols, Hypertext Markup Language (HTML) hypermedia document publishing and databases and so on) to provide an Internet-like environment within the enterprise for information sharing, communications, collaboration, and the support of business or institutional processes (Adreesen, 2002).

An intranet is protected by security measures such as passwords, encryption, and firewalls, and thus only can be accessed by authorized users through the Internet. A company's Knowledge Management System can also be accessed through the Knowledge Management Systems

of customers, suppliers, and other business partners via extranet links.

On the academic institution level, one of the primary benefits of Knowledge Management is that it actively addresses both the technology culture and the information culture in an institution, and seeks to advance both simultaneously. Both the technology culture and the information culture are unique to the organizational context of the school, college or university. The technology culture can be thought of as the institution's use and integration of technology in planning, development, operations and assessment (Milan, 2002).

The information culture, on the other hand, is distinct from what has become known as "information systems". It involves information politics and processes for sharing information within and across the organization.

With Knowledge Management System, the gap between technology culture and information culture is bridged and brings together three core organizational resources

- people, processes and technologies - to enable the organization to use and share information more effectively.

2. RESEARCH METHODOLOGY

A total of two hundred seven (207) pieces of information obtained from the different college deans, faculty members, librarians and registrars of seven (7) STI Colleges were subjected to statistical treatment to be able to evaluate the exiting information culture and technology culture within and among the campuses. A complete enumeration of the respondents in the 7 colleges was utilized in data selection. The instruments used to collect the data were the interview guide and the structured questionnaire with 100% of the distributed questionnaire forms was retrieved.

To determine the measure of central tendency, the median was used and to facilitate quicker computations, SPSS software was used to get statistical results.

TABLE 1. Distribution of Respondents for each College.

COLLEGE	FREQUENCY	PERCENTAGE
STI College Alabang	21	10.14
STI College Calamba	26	12.56
STI College Las Piñas	34	16.43
STI College Lipa	18	8.70
STI College Parañaque	27	13.04
STI College San Pablo	39	18.84
STI College Santa Rosa	42	20.29
Total	207	100.00

TABLE 2. Distribution of Respondents as to Designation

POSITION	FREQUENCY	PROPORTION (%)
College Dean	7	3.38
Registrar	7	3.38
Librarian	7	3.38
Faculty Member	186	89.86
Total	207	100.00

3. RESULTS & DISCUSSION

The 207 accomplished questionnaires obtained were subjected to interpretation with the following findings:

1. It is evident that the information culture prevailing in the 7 selected colleges is a culture of information sharing. This means that currently, there exists

information sharing and transfer of knowledge within the colleges and the academic network. However, this is done within the department where they belong. Communications and information sharing is not actually being promoted to the entire organization; more so, in the academic network. This leads to the dissatisfaction on the part of the

mentioned colleges as almost everyone finds the conduct of said activities highly important to them.

2. Results further revealed the kind of technology culture existing in the selected institutions. The existing technology is currently being used only in the delivery of instructions and not to promote knowledge sharing and transfer of information. This leads to the gap between the prevailing culture and the level of importance to the academic members as they find the technology resources very important tools in providing collaboration, communication and transfer of information.
3. Findings on the existing set-up:
 - a. The dean or academic head manages the academic department and is required to submit reports and academic information to STI-Headquarters. Courseware materials, memoranda, or related information from STI-HQ are normally dispatched and delivered to the colleges either through mail, facsimile machine, electronic mail, yahoo group, telephone or mobile phones. In addition, the IT department headed by the Chairman supervises not only the IT faculty Department but is also responsible for managing the computer laboratories. He is also in charge of managing; the school's hardware, software and network infrastructure.
 - b. A review of the existing hardware resources of the selected colleges reveals that current CPUs of the different colleges are possible client workstations for the recommended Knowledge Management System. More so, there exists uniformity in the software being utilized by the different schools since STI has a standard curriculum for all programs in all the campuses of the academic network.
 - c. Based on the results, recommendations on the plan of action for the implementation and sustainability of the recommended Knowledge Management System were identified: (1) advocacy and/or information campaign; (2) creation of academic wed council; and (3) actual implementation.

4. CONCLUSIONS

Based on the findings, the following conclusions were drawn:

1. The respondents perceived the importance of information sharing within the colleges and the academic network. However, information sharing was only within the department they belong.
2. The respondents perceived the importance of information technology in the promotion of information sharing and transfer of knowledge. However, the existing technology is limited only to delivery of instructions and is not utilized to the maximum.
3. There is a gap between the information culture and technology culture within the academic network of the selected STI Colleges. Hence, there is a need to recommend a Knowledge Management System design to bridge the gap.

5. RECOMMENDATIONS

Based on results gathered and several inferences made, the proponent highly recommends the following:

a. Organization

An STI Academic We Council must be formed in order to promote information sharing, collaboration and communication within the colleges and throughout the academic network. Also, a Management Information Academic Services Department (MIASD) must be created at STI Headquarters. Moreover, each college shall have an MIASD officer as point person of the MIASD.

b. Technology

The recommended network infrastructure will include 1 web server with Secure Sockets Layer (SSL) Authentication Support, and MySQL Database Support; 1 mail server with Anti-Virus and Spam filtering and Simple Authentication Security Layer (SASL) and Transport Layer Security (TLS) Support; 1 Domain Name System (DNS) server to handle the domain names and sub-domains of the Web and Mail Server; and 1 MySQL Database Server to be used as the backend for the user and group accounts of the Mail Server for the ease of manageability and administration, as well as overall security.

One Linux Firewall is also recommended to act as filter policy based firewall packet mangling, and denial of service protection. The Firewall will also have a host-based intrusion Detection System and 1 Proxy and Catching Server with Content Filtering Server. STI Headquarters may host the servers and will handle the central data warehouse of the web portal. This will be connected to all the member colleges of the Academic Network.

c. Process

A plan of action is designed for the implementation and sustainability of the recommended Knowledge Management System and further bridge the gap between the information culture and technology culture of the academic network. Plan of action should be quickly available to the management. This would include the following: faculty development plans, student development plans, employees' development plans and other action plans.

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