

**A PORTAL BASED KNOWLEDGE MANAGEMENT SOLUTION  
FOR AN EDITORIAL DEPARTMENT**

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I thank Allah for His mercy and guidance to me. This thesis is specially dedicated to my mother – Johara Bee bt Mazahar Ali and father – Mohamed b Hj Ibrahim. Their love inspires and brings me to success. To brothers and sisters, thank you for the love and support that you have given to me through out all the obstacles I have to face. I am the luckiest person in the world to have all of you. Without you, I could never achieve what I have today.

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## ABSTRACT

The core business knowledge in an editorial department mainly comes from individuals that are involved in the publishing processes. The exclusiveness of knowledge can help an individual to get a better position or better role in the department. Because of that, these individuals tend not to share what they know in order to protect their so called personal asset. Up to date, there are still no available tools or platform that has been developed to enable knowledge sharing in the respective industry. Therefore, this study is conducted to identify and manage the knowledge exists. A Knowledge Audit was being conducted in one of the biggest publishing organization to better understand the current situation of knowledge flows, ownership and sharing methods. A test prototype of a knowledge portal was developed as the tool for managing the organizational knowledge and as a medium to transfer the knowledge ownership from an individual to organization's intellectual assets. The portal has the capability to provide knowledge sharing, knowledge references and most importantly the person that has the knowledge is now being acknowledged. The portal was developed using Macromedia DreamWeaver MX as the editor and Active Server Pages (ASP) as the programming script. The system was designed using the Unified Modeling Language (UML) form and the methodology to develop the system was based on the APQC's roadmap. Few management strategies to institutionalize knowledge management were proposed in the final stage of the research phase. The strategies that have been laid out can be used as guidance for achieving a more effective knowledge management environment in a publishing organization.

## ABSTRAK

Teras kepada proses penerbitan di dalam jabatan editorial adalah berdasarkan pengetahuan yang terdapat di dalam diri individu yang melalui proses penerbitan. Mereka jarang berkongsi apa yang mereka tahu disebabkan keekklusifan pengetahuan yang mereka perolehi boleh meletakkan mereka di posisi penting di dalam organisasi. Buat masa kini, masih belum ada platform atau perisian yang dibina untuk membolehkan perkongsian pengetahuan didalam teras proses penerbitan. Oleh itu, kajian ini dijalankan untuk mengenalpasti dan menguruskan pengetahuan yang ada. Audit pengetahuan telah di jalankan di sebuah organisasi kajian kes untuk mendapatkan maklumat yang tepat berkenaan kaedah dan aliran pengetahuan semasa yangg menepati keperluan sebuah organisasi penerbitan. Sebuah portal prototaip telah dibina sebagai ujian untuk mengenalpaasti daan menguruskan pengetahuan yang ada di dalam jabatan tersebut. Ia akan membolehkan perkongsian pengetahuan diantara mereka yang memerlukan, rujukan apabila diperlukan dan yang terpenting sekali adalah mengenalpasti pakar yang menjadi sumber rujukan. Portal ini dibangunkan menggunakan perisian dan perkakasan yang berasaskan capaian internet dan laman web. Perisian pembangun yang digunakan adalah kod bahasa *ASP* dan perisian *Macromedia DreamWeaver MX*. Metodologi bagi merealisasikan projek ini adalah diadaptasi daripada "*APQC roadmap*", dan direkabentuk menggunakan kaedah "*Unified Modeling Language*". Beberapa strategi pengurusan pengetahuan telah dicadangkan di fasa terakhir kajian sebagai panduan untuk menjadikan organisasi penerbitan lebih berkesan.

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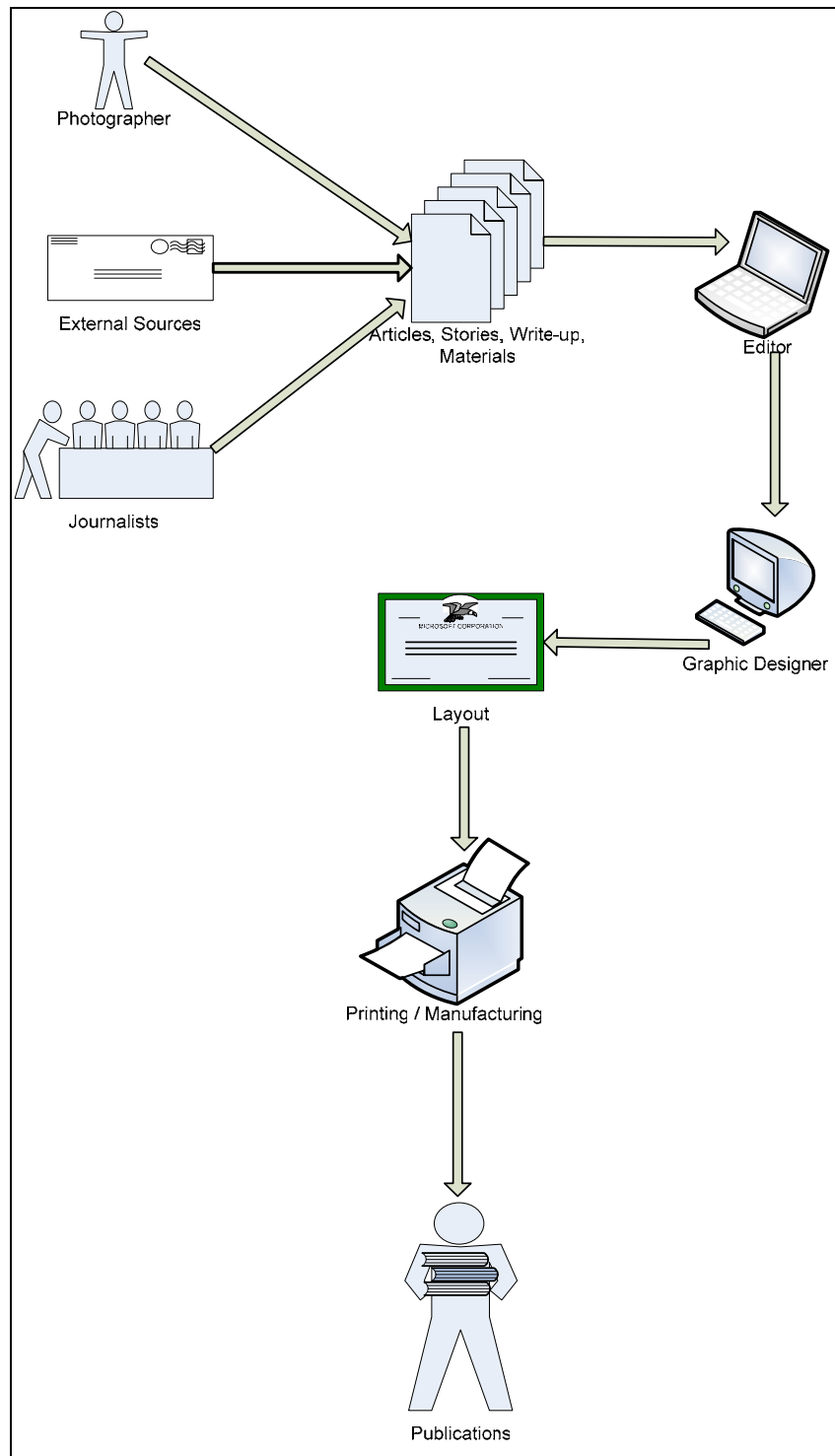
## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Overview and Background**

The publishing industry produces a variety of publications, including magazines, books, newspapers, and directories.

Although the content and formats may vary, most publishers follow similar publishing steps to produce their materials. First, editorial departments must acquire the content, or material, to be published. Some publishers have their own writers, reporters, and editors who make research and write articles, stories, and other text for the publications. Photographers and artists are also brought in to supplement the stories with photos and illustrations as needed. Some may acquire materials from outside sources for example, from a wire news organization, an independent “freelance” writers, photographers, and artists. The publishers might need to obtain the legal right to publish the material from the content providers prior to publication. After the story or article has been written, the manuscript is reviewed by the editor, to ensure that the content is accurate. The editor also will be responsible to look at the usage of correct grammar and house writing style. The catchy captions and headlines will be one of the success factors of the issue that going to be published. The editor and the in house journalist will be responsible to think of the right words and picture to be place in the cover to attract people. The cover and the page then will be designed by the graphic artist, using desktop publishing software.



**Figure 1.1: Publishing Core Business Process**

When complete, all of the content, manuscript, photos and captions, and illustrations and any other artwork, including advertisements are collected at one location and, with the help of desktop publishing software, the pages are laid out. Most newspapers and many magazines have art and design staffs that perform this

“prepress” operation; other publishers usually contract out their prepress to companies in the printing industry, along with the actual printing of the publication.

Meeting deadlines is one of the primary conditions of employment in this industry. Magazines and newspapers, in particular, are published on a very tight schedule and each party involved in the process must be prepared to meet these deadlines. This can often make for a very chaotic and stressful environment, and the staffs frequently may be required to work overtime. Working nights, weekends, and holidays also is common, especially for those working on newspapers.

According to Bureau of Labour Statistics, U.S. Department of Labor, the average nonsupervisory worker in newspaper publishing worked 33.0 hours per week in 2002, compared with 33.9 hours per week across all industries. Within periodical publishing, nonsupervisory workers worked an average of 36.1 hours per week, and 39.5 hours per week in book publishing. Part-time employment is significant in this industry, with 17 percent working part time.

The publishing lifecycle is unique, with content diverging and converging at multiple points of the process. There are also many collaborative review and approval flows that must be managed appropriately before everything can come together for print distribution.

Every staff in the process has their own knowledge on what they are doing. As for reporter, they have many experience and knowledge that are collected in the content creation and interview session. As per editors, their knowledge in editing, vocabulary and grammar is very valuable to a company. The company actually has very huge corporate knowledge which is invisible and intangible. The corporate knowledge normally belongs to individual and not to the company. When an employee leaves the organization, their knowledge and expertise leaves too. If these knowledge is not captured and shared, vast amount of productivity will be lost recreating the wheel when personnel changed.



Most of the staff matured in their field of work in the company with their knowledge and experience. The longer they worked in the industry, the more experience and knowledge they have. The core process that they have to go through to get the best articles is by reading other reference materials, doing researches, meeting peoples for interviews and attending events. Each and every staffs will get stories with different approaches. The one with the best approaching skills will get more information and sometimes exclusive stories.

New staffs need to learn on the best approach to use to accommodate the assignments given by the editors. Different assignments may need different approach. They need to ask for the contacts details from the seniors or searching from other resources. The processes to get the information they need may take longer if they don't know where to refer.

All these kind of knowledge might be shared between one to another to create a knowledge sharing environment in a company. The more they share, the more successful the company will be. The knowledge that can be classified as knowledge assets for a company is very dependent to their knowledge worker might be lost if the worker leaves the company. As the result, the companies lost the most valuable assets and keep repeating the collection process every time.

## 1.2 Problem Statement

The majority of the knowledge within an Editorial Department of a publishing industry belongs to the individual employees and is seldom shared throughout the organization. Each individuals in the department has their own knowledge and expertise areas, however, they are very protective to such knowledge. By being a specialist in certain area, they might have a better position and good influence in the company. Many workflows and content management system has been developed for a publishing industry, but **none of them have a knowledge sharing based, to encourage people from this industry to shift the paradigm of “knowledge is owned by individuals” to the new paradigm that the knowledge is belong to the organizations.**

When somebody leaves the organization, the knowledge resides in him will be gone too. The main problems the company will face when this occurs are:-

1. Lost of external business contacts that have been established by the respective staff.
2. Lost of best practices approach those have been used by the staff in dealing with his external business contacts.

### 1.3 Research Questions

In order to be able to build a knowledge management solution portal, several studies need to be carried to answer the following questions:

- i. Where is the critical path in the publishing business process that needs to be focused as the knowledge source?
- ii. Who has the knowledge in the editorial department?
- iii. How to gather the knowledge from staff?
- iv. What kind of knowledge need to be collect and gather from the community members?
- v. What is the next roadmap or planning to implement such system in the organization?

#### **1.4 Project's Objective**

The objectives of this project are:

- (i) To conduct a knowledge audit in the editorial department to identify who has what kind of knowledge.
- (ii) To develop and test a prototype portal that support knowledge management.
- (iii) To help reduce knowledge loss using the developed portal by transferring the knowledge ownership from personal to the company's asset.
- (iv) To outline the organizational strategy in order to encourage the use of the portal.

#### **1.5 The project scope are listed as below:**

- (i) Kumpulan Karangraf Sdn Bhd will be used as the project's case study
- (ii) The project will only focus the publishing business process in the editorial department.
- (iii) The development of the prototype system is to be based on a portal design and structure.

- (iv) The project is to be concerned in collecting knowledge and storing the knowledge in a portal for dissertation purposes.
- (v) The prototype is expected to enable knowledge collection, knowledge sharing, and knowledge reuse among stakeholders.

## **1.6 Significance of the study**

The study undertaken is important in determining the existence of knowledge sharing among the editorial staff from different magazines in the company. Sharing of knowledge plays an important role in the development of a successful and reliable publishing company. It will help to improve the general level of competency in order to develop a better and faster information capture and to help to speed up the publishing processes.

The portal developed can be used in a strategy to transform the knowledge culture that previously owned by individual person, to a company repository. This will create a more infusive knowledge sharing platform among staffs and helps in solving problem of loss of skills, experiences and knowledge in the organization. The platform developed is also to initiates the knowledge management solution to the company towards managing their intellectual asset properties.

## REFERENCES

- Ali Bahrami (1999). "Object Oriented Systems Development using The Unified Modelling Language."Singapore: Mc Graw-Hill International Editions.61-317
- Boyett, J.T. & Boyett, J.H. (2001). "The Guru Guide to the Knowledge Economy: The Best Ideas for Operating Profitably in a Hyper-Competitive World."John Wiley & Sons
- Brown, C, Spaanjaars, I & Marks,T. (2003). "Beginning Dreamweaver MX:Build 3 Complete Websites".Wrox Press Ltd
- Davenport,T. & Prusak,L. (1998). "Working Knowledge: How Organizations Manage What They Know." Boston:Harvard Business School Press
- Finneran, T. (2001). "A Component-based Knowledge Management System: Ciber White Papers". (Available Online ), <http://www.tdan.com/i009hy04a.htm>
- Hansen, M. (1999). "What's Your Strategy for Managing Knowledge ?" Harvard Business Review, March-April 1999.
- Hylton, A. (2002). "A KM Initiative is Unlikely to Succeed Without a Knowledge Audit".(Available Online),  
<http://www.annhylton.com/writings/publications/publications-2002-2003/KMInitiativeisUnlikelytoSucceedwithoutKA.pdf>

Hylton, A. (2002). "A Knowledge Audit Must be People-Centred & People Focused".  
(Available Online), <http://www.HyltonAssociates.com>

Leonard, D. (1998). "The Role of Tacit Knowledge in Group Innovation." California  
Management /Review, Spring

Liebotwiz, J (1999). "The Knowledge Audit". (Available Online ),  
<http://userpages.umbc.edu/~buchwalt/papers/KMaudit.htm>

Marr, B ( 2001). " Measuring Knowledge Assets". (Available Online)

Skyrme, D.J (2002). " The 3CS of Knowledge Sharing: Culture, Co-operation and  
Commitment". (Available Online ), [http://www.skryme.com/updates/u64\\_f1.htm](http://www.skryme.com/updates/u64_f1.htm)

Tiwana, A.(2000)."The Knowledge Management Toolkit".Prentice Hall PTR

Universiti Teknologi Malaysia (2001). "Panduan Menulis Tesis." Johor Darul Takzim,  
Malaysia: UTM

Walther, Stephen (1998). "Active Server Pages Unleashed." 1<sup>st</sup>. ed. Sams.net Publishing.

Zachman, J. (1998)."Information System Architecture", (Available Online),  
<http://ww.ecea.noaa.gov/downloads/zach1.pdf>

Rational. "Rational Unified Process: Best Practice for software development teams."  
Rational Software White Paper TP026B Rev 11/01. 1998.

Nonaka, Ikujiro & Takeuchi, Hirotaka (1995). "The Knowledge Creating Company".  
New York: Oxford University Press.

Carlson W. (1999). "A Guide To Planning A Knowledge Management System".

(Available Online),

<http://faculty.ed.umuc.edu/~meinkej/inss690/carlson/Knowledge%20Management.html>

Denning S. (2000). "The Springboard: How Story Telling Ignites Action in Knowledge-Era Organizations. *What Is Knowledge?*". Boston, London: Butterworth-Heinemann