
K-PORTAL AT NID : AN INFORMATION SYSTEM TOWARDS KNOWLEDGE MANAGEMENT

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Abstract

Portals are becoming the primary interface through which students, faculty, administrators and alumni interact with educational institutes. As a result, portals are rapidly becoming the most empowering strategic information system framework for institutional Information Technology (IT) solutions. Portals have become the most effective delivery mechanism for information creation, sharing and knowledge management strategy. The portal transforms the user's access method from desktop to a secure "WebTop," offering intelligent, integrated, and personalized access to enterprise services from anywhere, anytime. While humble in itself, the portal has the power and potential to transform institutions and make a significant contribution towards success. The goal of this paper is to assist in understanding or highlighting various aims, objectives, benefits, the role of Knowledge Management & Information Services (Library) as well as how it can be developed and implemented successfully for various other educational institutions by looking at the NID K-Portal model and architecture.

Keywords : Knowledge Portal, Portal, Web based Information System, WebTop, Portlets, Knowledge Management, Library Information System, Intranet Information Access, Personal Information Management

1. Executive Summary

Portals are becoming the primary interface through which students, faculty, administrators and alumni interact with educational institutes. As a result, portals are rapidly becoming the most empowering strategic information system framework for institutional Information Technology (IT) solutions. Portals have become the most effective delivery mechanism for information creation, sharing and knowledge management strategy. The portal transforms the user's access method from desktop to a secure "WebTop," offering intelligent, integrated, and personalized access to enterprise services from anywhere, anytime. While humble in itself, the portal has the power and potential to transform institutions and make a significant contribution towards success. The goal of this paper is to assist in understanding or highlighting various aims, objectives, benefits, the role of Knowledge Management & Information Services (Library) as well as how it can be developed and implemented successfully for various other educational institutions by looking at the NID K-Portal model and architecture.

2. Background

NID is equipped with start of the art library with various collections of materials from the inception. The kind of education imparted at NID requires one such rich library to enhance the knowledge of faculties and students in the latest areas of design and design related matters. During the year 2001-2002 with initiative of Dr. Darlie O. Koshy the Executive Director of NID, realized the importance and the paradigm shift in the market for information and Knowledge and felt the need to for information and Knowledge Management and gave different role, look and feel of the library. He has named the Resource Center to Knowledge Management and Information Services (KM&IS).

The KM&IS is a new age format of an integrated approach to managing various human, print, digital and other resources all in a seamlessly integrated manner thus envisaging for KM&IS. The main focus of KM&IS would be to harness intellectual property and the tacit knowledge of people at NID. At the KM&IS the focus will be to expand the intellectual property base through promoting processes of sharing knowledge, brainstorming sessions, exchange of ideas and experience, specialized training to faculty/ staff and students through the Intranet and Internet facilities to achieve efficiency at all levels.

The KM&IS formally the Resource Center was also involved in developing information systems (software applications) for the in-house need. One of the notable contributions of this activity during early 1990's is the indigenously developed start-of-the-art library automation system for managing the information acquisition, storage, processing and user friendly retrieval of information from all the formats and sources of library

3. KM& IS Objectives

- To increase the involvement of human resources in research and induce them towards creation of original knowledge.
- To explore the commercial opportunities for knowledge by identifying, protecting and exploiting potentially valuable and creative work.

Exploiting the IT resources was the only option to achieve these objectives. The NID K-Portal is the result of it. The K-Portal would function as a single point of entry to the world of information which would lead to a different pattern of life.

4. About Portals - Portal – a definition

Technically, a portal is a web-based information system service that brings together content from various distributed resources and systems using Information Technologies into an amalgamated form as a presentation service to the user. This presentation is usually via a web based information system to support 24X7, though other methods are also possible. For users, a portal is a, possibly personalised, common point of access where information is available and a drilldown can be carried out across one or more resources and the compounded results seen.

Some of the main characteristics of portals are:

- They act as the framework in which applications, either new or existing, can be presented and accessed as “channels” or “portlets”.
- They provide security features and personalisation – both for the user in that they can choose which channels they do or do not see, and for portal administrators who can assign roles to users and therefore control what they access.
- The ability to personalise also enables the portal to foster a sense of community by allowing users to identify other members of their community and to communicate with them using online communication tools such as email, discussion boards, Conferencing etc which encourages users to keep returning to the portal.

5. K-Portal at a Glance

The NID in-house software development activity took a great momentum during late 1990's and developed various applications for automating the manual and time consuming tasks and implemented successfully for various departments. Today NID is having nearly 8-10 fully functioning in-house developed systems existing. Library Automation System, Personal Information system (PIS), Payroll system, Students Grading System, Intranet etc. to name a few.

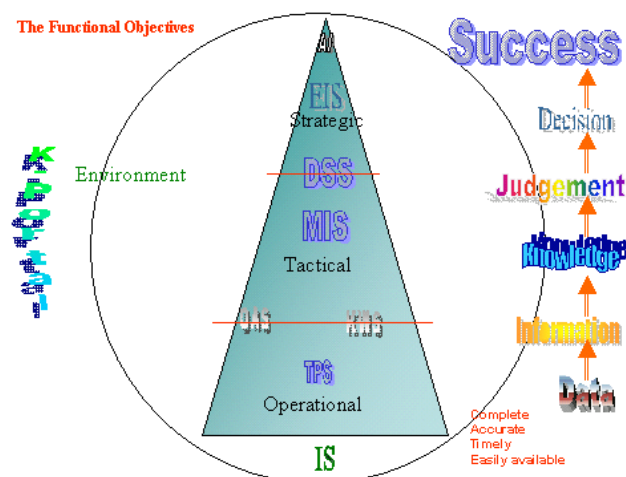
Though all these applications are fully used and desired outputs are obtained but they all exists as islands and do not communicate each other in a synchronous mode and a manual intervention is required. Thus there felt the need of a system with single sign on (SSO) and the information is available on a real time bases. So NID wanted a tool which will integrate all the systems leading to the easy timely availability of information.

This tool will function as an integral part of every one (students, faculty and staff) to gather and disseminate information. When it is fully developed and launched this would have all the features that one person requires in a day to day life and the organizational procedures and applications so one need not run around for information and indulge in reinventing the wheel at the same time this would automatically generate an archival data warehouse of all the users what ever they have done from the day one to until they leave the organisation. Thus the K-portal would be a Knowledge Repository for the coming generation for a successful learning.

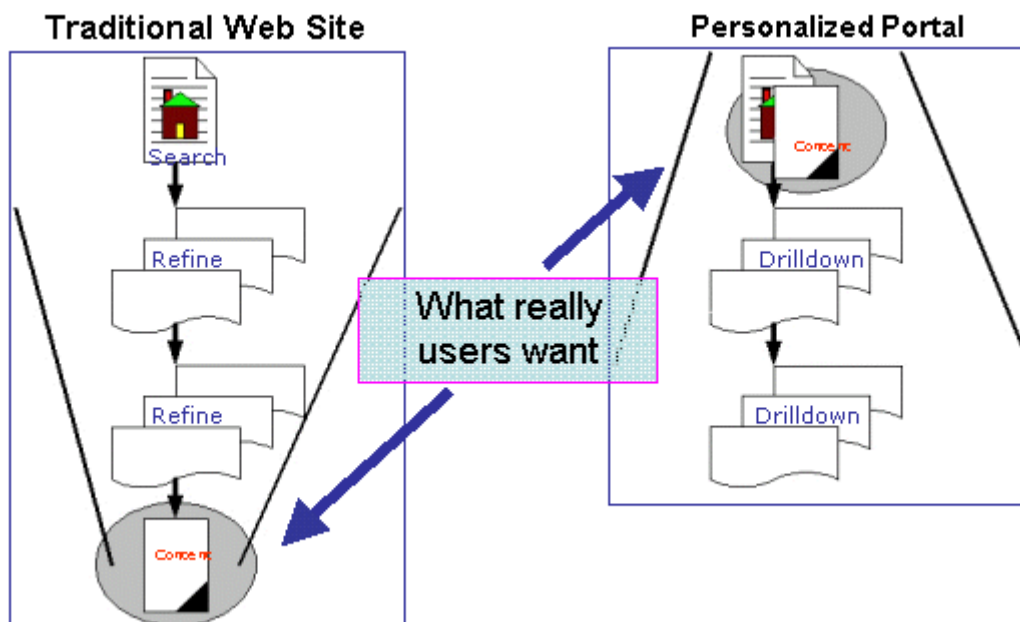
NID "K-Portal" – a web-based information system to provide users (staff , students, Faculty, Researchers, Alumni, corporate sectors, professionals and other institutions) with a single point of access to as wide a range of institute's information or services as possible.

The K-Portal will "Enable NID to **UNLOCK** internally stored information, and provide users with a single gateway to **PERSONALIZED** information and knowledge to make informed business **DECISIONS**" by integrating all the applications and staff, faculty, students, Graduates and Business Partners.

6. Aims, Objectives and Benefits



Go search what you need vs. available personalized content



The system is intended to create a platform for more effective administration as well as information and knowledge sharing; it will reduce chances for administrative error and the frustrations of the current multiple/manual systems that operate both within departments and across a department in some cases. The system will offer a dynamic, but managed and secure system which will lead to ease of information and resource sharing across teaching and administrative departments and to effectively use the common and IT resources and to increase staff efficiencies in terms of time, effort and productivity. It will present all users with appropriate, current and reliable information, which can be easily and locally updated, in a controlled way. The portal will allow faculty, staff and students access to important and current information and to information sharing both on and off-site. This would also enable NID to implement easily the Right to Information Act.

Few Benefits of Portal

1. **Institutional** : The Institute will gain through:
 - 1.1. Towards a paper less office
 - 1.2. Transparency and constancy in Governance
 - 1.3. TPS,OAS,KWS,MIS,DSS,ESS,ES – a data warehouse of information a great asset for NID
 - 1.4. There will be greater ease of information sharing and exchange. Administrative Staff, Faculty, Students, Alumni and Business Partners will access current information. This will help meet the Institute's needs to be transparent and consistent in dealings with any type of task.
 - 1.5. Quality Assurance processes will be facilitated and there will be Quality Enhancement of teaching and learning department and student support.
 - 1.6. There will be plenty of time left with employees to upgrade their skills and their proficiency.

2. Faculty : Faculty will gain :

- 2.1. Confidence in the quality information and in the effectiveness of complex department procedures.
- 2.2. Faculty will gain through having a more common set of administration procedures and forms across department. This will assist faculty teaching and administration across several programs.
- 2.3. Full and current department information, documentation, regulations, calendars, forms and guidance notes will easily be accessible and this will ensure fairness, consistency and coherence in managing students and in offering student support.
- 2.4. There will be controlled access to student and department data. This will be an improvement on the current management of student and department information with, in the future, better and more secure storage and information being directed to targeted audiences.
- 2.5. The faculty will have access to current student information on a need to know basis, for example their progress and grades and any issues that may cause concern.

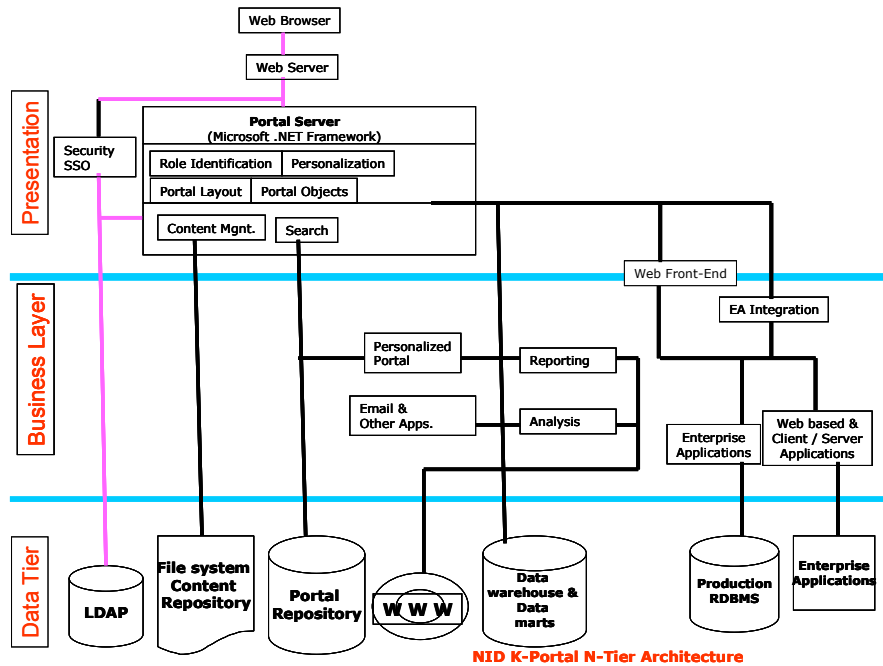
3. Students : Students will gain from the portal in a number of ways.

- 3.1. Students will be able to access full and current information about all aspects of the department and their individual course through it. All guidance notes, handbooks and forms to support administrative requirements will be easily accessible in the Student Information and Resources Area. Ease of access to information, timetables and communication updates will encourage learners.
- 3.2. The inclusion of message boards, individual message alerts on individual student homepages, teaching and learning materials and full department guidance should reduce their needs to access staff /faculty for routine matters and encourage a greater sense of confidence in being able to manage their own learning.
- 3.3. The portal will enhance the quality of the learning experience. There will be on-line learning support materials, access to learning resources for each unit and on-line group student communication to facilitate peer group discussion. Such resources can be accessed as students identify their own learning needs.
- 3.4. The Student File will have a section designated as a Personal Development and Learning Portfolio and full guidance notes to support its use.

4. Administrative staff : There are a number of very significant benefits for Administrative staff (who may currently operate at department or faculty level).

- 4.1. The Institute does not have custom built department administration and management information systems. There are a number of systems in operation across the institute and indeed often a number, both electronic and paper-based, within a department office. There is often incoherence and incompatibility between systems. This can lead to repetitive keying in of the same information, which wastes precious time and increases opportunities for error.
- 4.2. Each of these systems takes some time to learn and so there are barriers to staff moving easily within and between department offices.
- 4.3. There will be significant time saved in answering routine and other enquires through being able to undertake simple database searches.
- 4.4. The integrated nature of the system will allow for greater proactive in program administration, for example, the monitoring of unit choices and so monitoring of class sizes and therefore better allocation of teaching rooms and management of library resources.
- 4.5. Increased productivity
- 4.6. Time saving
- 4.7. Reduces paper transaction and produces reliable information

7. NID K-Portal Architecture



8. Current Features and Functional Components (Phase – I)

Sr.#	Portal services classification	Phase – I Developments	Status
1.	Personal	<ul style="list-style-type: none"> ✓ Calendar / Task Scheduler ✓ my grade ✓ my course evaluation 	✓
2.	Groupware	<ul style="list-style-type: none"> ✓ Forum ✓ Polls ✓ News & Events ✓ File Collaboration System 	✓
3.	EAI	<ul style="list-style-type: none"> ✓ Grading System (Student Assessment) ✓ Digital Library ✓ KMC Catalogue Search 	✓
4.	Departmental Web space	<ul style="list-style-type: none"> ✓ Home page ✓ New & Events ✓ File Sharing 	✓
5.	Portal Administration	<ul style="list-style-type: none"> ✓ User Registration ✓ User Roles/Access & Rights settings ✓ Change Password ✓ Forgot Password ✓ Feedback 	✓

9. NID K-portal Expansion plan - Phase – II

Sr.#	Portal services classification	Phase – I Developments
1.	Personal	<ul style="list-style-type: none"> ✓ Email ✓ File Manager ✓ Contacts Management ✓ Personalization ✓ User Profile ✓ Manpower Search
2.	Groupware	<ul style="list-style-type: none"> ✓ Conferencing ✓ Instance Messaging ✓ Chatting ✓ On-line publishing
3.	EAI	<ul style="list-style-type: none"> ✓ PIS ✓ Payroll ✓ KMC System
4.	Departmental Web space	<ul style="list-style-type: none"> ✓ Space Customization ✓ Own website
5.	Intra-Organizational System	✓ Phase - III
6.	Portal Administration	

- **Phase III**
- **Review and Change Management**
- Enhancement
- Up-gradation
- In-corporate user feedback
- Maintenance
- **Phase - IV**

Sr.#	Portal services classification	Phase – III Developments
1.	Personal	Learning Management System
2.	Groupware	
3.	EAI	MIS/DSS/ES
4.	Departmental Web space	
5.	Intra-Organizational System	NID Website
6.	Portal Administration	

10. Implementation approach

- Socio-technical approach
 - i. Responsibility
 - ii. Accountability
 - iii. Liability
 - iv. Transparency
 - v. Consistency
 - vi. Fairness
- Top-down approach
- Committed management support
- Brain storming session
- User training

11. Resource Requirement

- A proactive Team
- Strategic Management Support
- Space
- Technical Requirement (Technology)
- Human Resource (ideal manpower requirement but many things are developed in-house and already developed the team can be merged with one or more people.)
 - i. Stakeholders (Natural Allies + Non-Natural Allies)
 - ii. A Dedicated full-time technical team
 - iii. Information Manager (IT) / Project Manager
 - iv. Systems Analyst / Database Administrator
 - v. Programmers (Web Developers / programmers) (2)
 - vi. UID (User/ Usability Interface Designer)
 - vii. Content Manager
- Time
- Fund (if required) – require if we do some kind of BPR
- Strategy and Policy

12. Role of KM&IS

- Content Developer
- Dissemination of library holdings

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- Information system Development
 - The KM&IS will be empowered and strengthen with huge data repository and will function as a central hub for information source and retrieval and contribute significantly for smooth functioning and growth of the institution.
 - The KM&IS will hold more knowledge than hard materials

13. Conclusion

A portal – the web based information system may well be the first and last project in organisation that truly touches everyone, from the office of the Executive Director to the newest recruit.

While humble in itself, the portal has the power and potential to transform organisation and make a significant contribution towards the institutional growth.

All it requires is a wide and popular support, with the whole organisation mobilized, to realize the dreams. Be inspired, be resilient and work towards knowledge victory.

14. On-line Demonstration

Since the NID K-Portal is currently operational I can demonstrate the actual features, functions and utilizations.

About Author



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