

Jute-Gate: A Case Study on the Development of a Subject Gateway

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Abstract

Documents on Jute have proliferated considerably along with the growth of the Jute Industry. The aim of this study is to develop a comprehensive single-window knowledge dissemination tool on Jute. Survey of subject gateways and Jute websites has been conducted to ascertain the need for the same. Development of a subject gateway on Jute information (i.e. Jute-Gate) is an obvious choice as there is no subject gateway on Jute, although different subject gateways have been developed across the world for disseminating qualitative information to information seekers on other subjects. A prototype Jute-Gate has been designed based on the feedback from a field survey of Jute Mills and other stakeholders using a free open-source Content Management Software (CMS) (i.e. Drupal).

Keywords: Jute Gate, Jute Information Gateway, Subject Gateway

1. Introduction

Subject Gateways provide the opportunity to access quality documents in a discipline. Designing and developing a subject gateway is an effective way to provide customized information service in a subject domain by providing access to all related resources via a single portal.

The Jute Industry has grown and changed considerably and documents on Jute have proliferated.

2. Development of Subject Gateways in India

Kanetkar (2014)¹ reviewed the status of 77 subject gateways developed between 1999 and 2013. A survey of 149 gateways which were active for different periods between 1996 and 2016 found that 13 of them were developed in India. Details of them are given below:

2.1 SciGate

SciGate is developed by the National Centre for Science Information (NCSI) of Indian Institute of Science,

Bangalore. SciGate is a science information portal and gateway and provides single point access to variety of locally hosted and internet-based information resources in science, engineering, medicine and management². Some of the contents on SciGate (Open sources, InfoWatch, IISc Publications) and E-JIS (free e-journals) are freely accessible on the Internet³.

2.2 Infolibrarian

Infolibrarian⁴ was developed by a group of professionals working in the fields of library and information science and computer science to provide maximum information at one place to library and information science professionals and researchers.

2.3 Library and Information Science (LIS) Gateway

LIS gateway is a project of the University Grants Commission (UGC); New Delhi, India launched in April 2004 and is the first Indian subject gateway in the field of library and information science⁵.

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2.4 Indian Library Association - LIS Gateway

Initially 'LIS-Gateway' was developed and linked at the website of Delhi Library Association. In 2012, it was shifted to Indian Library Association's website⁶.

2.5 Open Journal Access System (OJAS)

To expand and improve access to research, Open Journal System (OJS)⁷ was developed. It was used by INFLIBNET Centre and is designed for managing and publishing scholarly journals online. The INFLIBNET Centre has installed and configured OJS on servers which will facilitate hosting of electronic versions of journals into open access mode. OJAS encourages Universities and Institutions publishing their existing print journals into electronic version free of cost.

2.6 Online Reference Zone (ORZ)

'Online Reference Zone'⁸ is a gateway of open access online reference sources on science and technology. It was designed, developed and hosted by the library of Indian Statistical Institute, Bangalore centre.

2.7 Rice Knowledge Management Portal (RKMP)

The Rice Knowledge Management Portal⁹, a flagship initiative under National Agricultural Innovation Project (NAIP), was developed by the Directorate of Rice Research, Hyderabad with eight of its consortium partners.

2.8 Consortium for Educational Communication (CEC)

The Consortium for Educational Communication¹⁰ is one of the Inter University Centres set up by the University Grants Commission (UGC) of India with the goal of addressing the needs of higher education using Information Communication Technology (ICT). CEC has emerged as a nodal agency to coordinate, guide and facilitate educational resources production at the national level with 21 Media Centres under its umbrella.

2.9 InfoPort

InfoPort¹¹ promoted by INFLIBNET, is designed and developed as a comprehensive subject gateway for Indian scholarly content. The gateway supports an integrated

interface that supports search, browse and multiple listing of electronic resources scattered over the Internet.

2.10 Subject Information Gateway in Information Technology (SIGIT)

Subject Information Gateway in Information Technology (SIGIT), developed at Aligarh Muslim University¹² is the first full-fledged subject information gateway exclusively in the field of Information Technology (IT).

2.11 e-PG Pathshala

The content and its quality is the key component of education system. Ministry of Human Resource Development (MHRD), under the National Mission on Education through ICT (NME-ICT), has assigned UGC for development of e-content in 77 subjects at postgraduate level. High quality, curriculum-based, interactive content in different subjects across all disciplines is being developed under this initiative called 'e-PG Pathshala'¹³. Developed E-content would be available in open access mode through a dedicated Learning Management System (LMS) and also through Sakshat Portal¹⁴.

3. Development of the prototype Jute-Gate

The Jute-Gate was developed as per System Development Life Cycle (SDLC) - Waterfall Model¹⁷. The Waterfall model is a sequential development approach through several phases. These phases are described below:

3.1 Requirement Gathering and Analysis

Pre-project survey for the proposed Jute-Gate was conducted among Jute Mills and other stake holders. Questionnaires were sent to know their information need, information accessibility and information usage. Based on the feedback possible requirements of the 'Jute-Gate System' were identified

3.2 System Design

The requirement specifications collected in the previous phase were considered in this phase and a system design was prepared for Jute-Gate. It helped in specifying hardware and system requirements and also helped in defining overall system architecture. A free open source Content Management Software (CMS) and a free open source cross-platform web server solution stack package

(i.e. XAMPP) were used.

3.3 Implementation

Based on the survey of Jute Mills and other stakeholders and subsequent analysis of 149 subject gateways and 47 websites on Jute, a detailed structure (Basic structure of the prototype Jute Information Gateway is communicated to IASLIC Bulletin as paper titled “A Subject Gateway on Jute Information” by the corresponding author) of prototype Jute-Gate was designed as below:

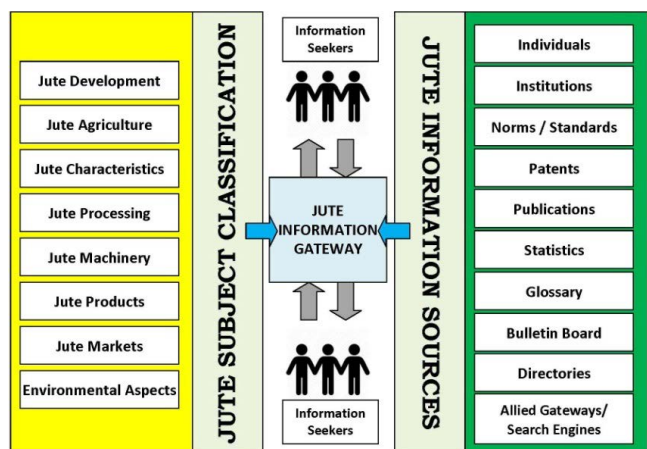


Figure 1. Structure of prototype jute information gateway.

In this study, the prototype Jute-Gate was developed using Drupal 7.38 based on XAMPP 5.6.8 installed on Windows 7 operating system.

- Drupal 7.38 consists of some core modules (i.e. Aggregator, Bartik, Block, Color, Comment, Contextual links, Dashboard, Database logging, Field, Field SQL storage, Field UI, File, Filter, Forum, Garland, Help, Image, List, Menu, Node, Number, Options, Overlay, Path, RDF, Search, Seven, Shortcut, Stark, Statistics, System, Taxonomy, Text, Toolbar, Tracker, Update manager, User);
- Taxonomy of Jute-Gate was developed which helped in managing tagging, categorization, and classification of all Jute content;
- Main menu and its sub-menus were defined as per the Jute Taxonomy developed for the purpose;
- Jute-Gate site was designed with the default theme Bartik 7.38 which was a flexible, re-colorable theme with many regions;
- Different blocks were configured as per the requirement. Its location/ region on the site were decided considering the theme on which the site was built; and
- Content types of Jute-Gate was defined as follows:

- Article: Used for time-sensitive content like news, press releases or blog posts
 - Basic page: Used for static content, such as an ‘About us’ page
 - Forum topic: Used to start a new discussion thread within a forum
- 611 nodes (A node contains title at the top; the author, date, and time below the title; the picture attached to the node; and then the contents of the node) were developed and included in the site of Jute-Gate.

3.4 Integration and Testing

All the nodes developed in the implementation phase were integrated into the Jute-Gate after unit testing of each node for its functionality. During post integration phase, the entire Jute-Gate site was tested for any faults and failures through local host (<http://127.0.0.1>).

3.5 Deployment of System and Maintenance:

After functional and non-functional testing the actual Jute-Gate site will be deployed in the actual web server.

Following periodic typical site administration tasks¹⁸ will be done for maintaining the Jute-Gate site:

- Regular Back-up,
- Error-Logs Checking,
- Checking for any security patches of the installed modules,
- Checking for any module upgrades,
- Checking and deployment of Drupal 7.38 core modules updates, and
- Approving requests for new user accounts.

4. Searching Mechanism of Jute-Gate

Jute-Gate supports two modes of searching. Ordinary information seekers can search contents through keywords and expert information seekers can search through menu driven Jute Taxonomy or can directly choose appropriate information sources of Jute-Gate for having desired information. Jute-Gate has the flexibility to add to or the existing Jute Taxonomy. Thus, new terms on Jute can be incorporated and placed under suitable heading of Jute-Gate. New individual node can be created on any new Jute term for dissemination of information. Informal latest information on Jute can be shared among the members of the user community through the creation of discussion forums in the Jute-Gate. Allied subject gateways and related search engines have also been incorporated into the Jute-gate for searching in related areas also.

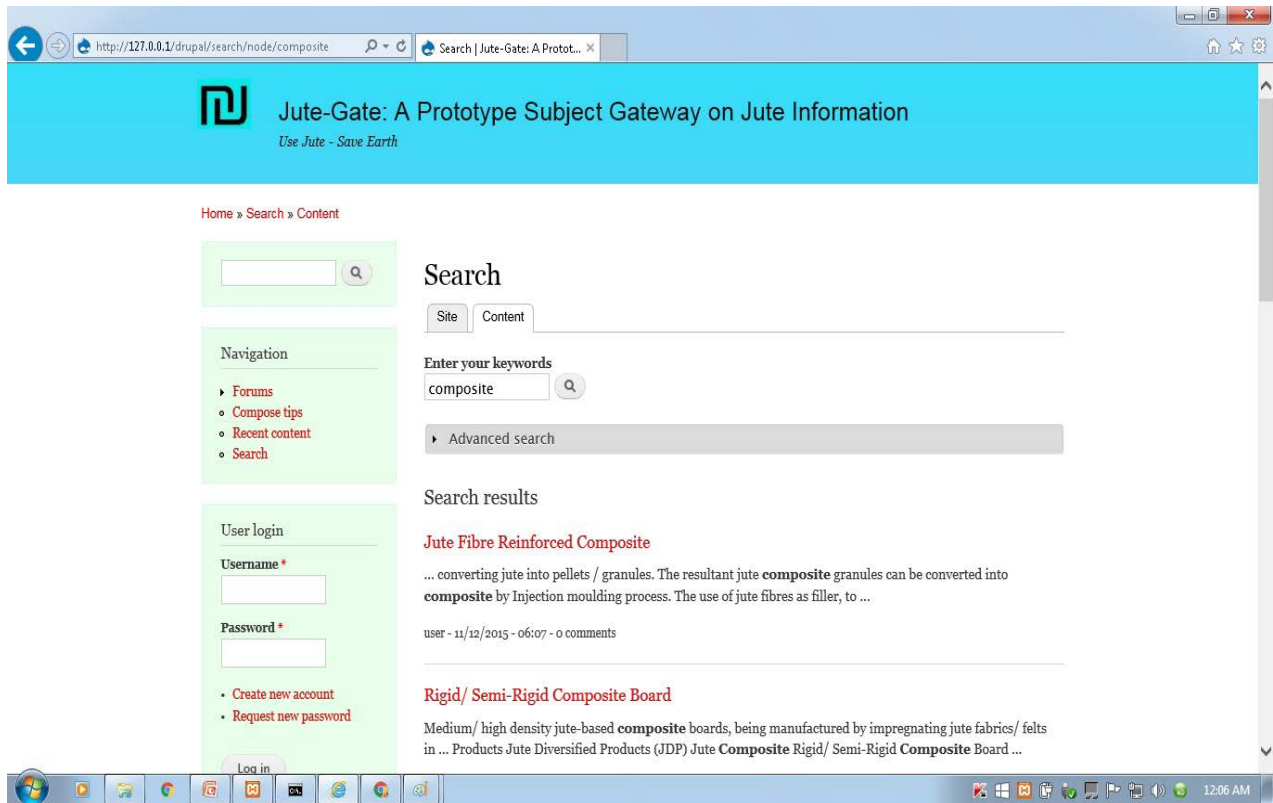


Figure 2. Screen shot of search results through keywords.

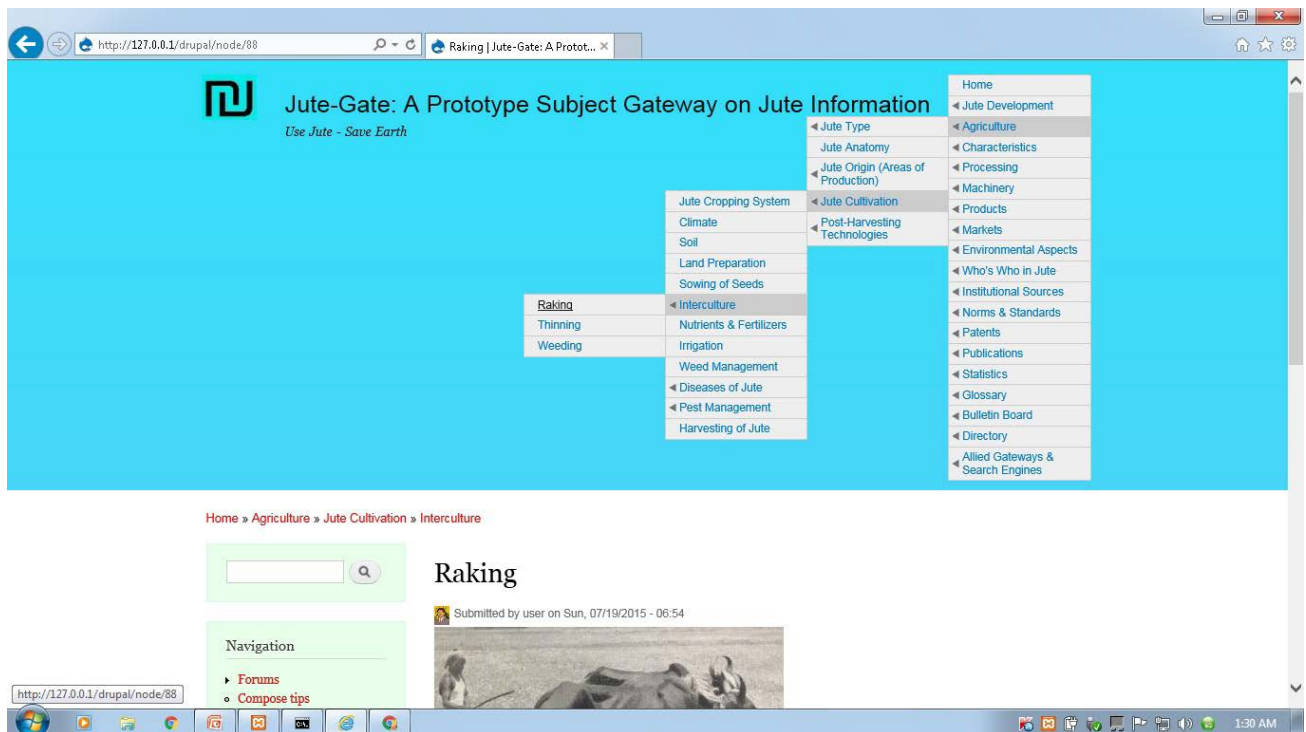


Figure 3. Screen shot of menu-driven taxonomy.

5. Conclusion

The study has been conducted to examine the viability and sustainability of Jute Gate subject Gateway. It has been observed that development of micro-subject gateway such as 'Jute-Gate' with the open-source CMS is a viable and more sustainable approach towards the dissemination of qualitative information.

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