Freelib: A Self Sustainable Digital Library for Evolving Communities

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Motivation

• Considerable untapped content with individuals in diverse communities.
• Traditional digital libraries have sustainability problems as they are built and deployed under centralized framework
  - Who provides the hardware/software to support the digital library?
  - Who provides and maintain the content?
• Building Communities
  - Discovering and bringing members of similar interest together for forming communities to improve discovery.
• Evolving Communities
  - Adapting processes and interfaces in presence of changing community interests.

Approach

Sustainability. The underlying architecture of the proposed library is based on P2P, which is decentralized and does not rely on any centralized expensive hardware in sustaining the library.

Dynamic Evolution of Communities. Characterizes communities based on users’ access patterns and to build the network topology to reflect this structure. Freelib allows all communities to form, thrive, network, decline and disband as the content and users evolve.

Support of Diverse Communities. We want to architect our universal client in such a way that different requirements are different communities, typically in terms of the metadata and interfaces, can be integrated with the core client using plug-ins.

Objectives

• Develop an alternate model of building digital library that is sustainable and supports communities and content with diverse interests.
• Research how a P2P network model can be utilized for effective discovery and access on P2P network topologies.
• Build a test bed (faculty, staff and students at four departments at ODU) that demonstrates the network of DLs and their interactions.
• Evaluate the effectiveness of the proposed digital library in terms of scalability, and sustainability.

Network Architecture

Freelib Client Architecture

Freelib User Interfaces