

Low bandwidth web information retrieval services for rural areas

Manjusha Nair & Jisha R C
Amrita Vishwa VidyaPeetam,
Amritapuri, Kollam, Kerala, India.

- To provide information to rural communities
- Contribution to information is high – From Research institutions, government departments, businesses etc...
- Knowledge even though available are not accessible to rural population.
- Methods to spread this information are generally ineffective: with limited or no internet connectivity

- Network connectivity technologies – > Expensive
- Poor countries does not have the budget to meet the latest technologies in all the remote areas
- Low priority compared to poverty and illiteracy
- lack of low-cost technological solutions

- Hope and solutions
 - Wide spread use of Mobile technologies
 - Long range wireless technologies – WiMax, GPRS, WildNet
- => But are unreliable or intermittent

Solutions

- An information retrieval system with the following characteristics
- Asynchronous web search.
- Local search within a cache containing downloaded pages
- Contextual caching.
- Content Adaptation.
- Automatic search query optimisations.
- Automatic e book creation (PDF files) and store it for later retrievals

More on Solutions---

- Content Adaptation: Filter the relevant content based on the bandwidth conditions/output devices.
- A web page may contain MB's of irrelevant data such as advertisements, images, audio and video files.
- Can be removed or compressed and stored

Related work: web Search

- Rural Café: - By CATER (Cost effective Appropriate technologies for emerging regions) , New York University
- A system that provides enhanced web search capabilities in Internet Cafes in villages with minimal network connectivity.
- <http://cater.cs.nyu.edu/wiki/index.php/Home>

Related work: Content adaptation

- Loband - Loband simplifies web pages by filtering out images and other bandwidth-intensive content so that they can be received faster over slow Internet connections.
- Users can use Loband without downloading any programs to their computers.
- Simplification and compression of web pages to reduce bandwidth requirements.
- Modification of web pages to make links on them work through Loband.
- www.loband.org .

Related work: Local Content Search

- Apache Lucene
- Apache Lucene is an open source project available for [free download](#)
- <http://lucene.apache.org/java/docs/>