ICT as Key for Library Development in Ethiopia – A Personal Reflection

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Impact of ICT On Libraries

ICT has impacted on libraries activities

- Collection Development
- Effective cooperation and resource sharing networks
- Value Added information Services
- Easy access to wide variety of digital resources
- Automation of core functions
- Repositories of digital local content
- ICT based capacity building programmes

On the Contrary …

ICT has fundamentaly changed the user behaviour.

Internet, smartphone and apps have revolutionized the way people consume information

They have changed users' expectation

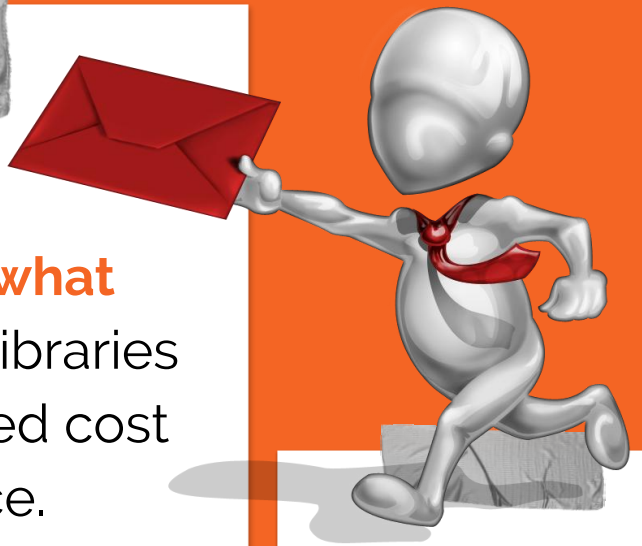
"Always-ON" user generation is emerging even here in Ethiopia

… User Retention is becoming a Challenge

Automation

The use of ICT to do **exactly what has been done manually** in libraries with the justification of reduced cost and or increased Performance.

Automation helps in the acquisitions, organization, storage and dissemination of information in libraries.



Most university libraries in Ethiopia use ICT to automate their services including: Acquisitions, Cataloguing, Circulation, Serials and User Services

Digitization

Is the process of transforming traditional library materials that are in the form of books and papers into electronic form to be stored and manipulated by electronic devices.

This paves the way to the emergence of **digital libraries** as well as **virtual libraries**

Why Digitization

- To preserve the Documents: to allow users read older or unique documents without damage to the originals.
- To make the documents more accessible: to reach more users, cover vast locations
- To reuse the documents. to convert documents into different formats for different purpose.

Big Data

Until 1900 human knowledge doubled **every century**. By the end of World War II knowledge was doubling **every 25 years**. Today human knowledge is doubling **every 13 Months**.

One petabyte is equal to the amount of text in **20 million filing cabinets**.

Today, about **20 petabytes of data** are produced in the time span of fifteen minutes.

That's **Big Data**: massive data sets that can yield surprising insights when analyzed

Big Data in Libraries ?

Libraries Core Mission: To Protect and Disseminate Information

BI & Analytics

Business Intelligence:

is a set of methodologies, processes, architectures, and technologies that transform raw data into meaningful and useful information to be used for effective strategic, tactical, and operational insights and decision-making

Business Analytics:

is a set of processes and tools which uses statistical and quantitative methods to utilize raw data for explanatory and predictive modelling

BI & Analytics for Libraries

Basic houskeeping reports and trends prediction: such as reporting and future prediction on library service utilization

Fancy, value add, data mining operations: e.g. Analyze users interaction in the social media and recommend appropriate information through SDI.

Even more fancy – Integrate Business Intelligence with Location Inteligence and push location based information to users

Social Networks

Libraries can use social networks for a variety of purposes:

- to promote services

- to instruct users, for the reference service,

- to allow users to propose the purchase of documents or provide a feedback to the library,

- to create a community of users who actively participate in the library profile page

Social Networks . . .

Within the social network sites, such as in Facebook, it is possible to insert applications to search directly a library OPAC or other databases

Possible to share content to users as in the case of YouTube

Most suitable communication style in a social network for a library that wants to attract and retain users.

Cloud Computing

A model for enabling convenient, **on-demand** network access to a **shared pool** of **configurable** computing resources (e.g., networks, servers, storage, applications, and services) that can be **rapidly provisioned and released** with minimal management effort or service provider interaction.

Common Characteristics:

- Pay Per Use (No Ongoing Commitment)
- Elastic Capacity and the Illusion of Infinite Resources
- Resources that are Abstracted or Virtualized

Cloud Computing - Service Models

IaaS - provides basic storage and computing capabilities as standardized services over the network

PaaS - a layer of software, or development environment is encapsulated & offered as a service, upon which other higher levels of service can be built.

SaaS - a complete application is offered to the customer, as a service on demand. A single instance of the service runs on the cloud & multiple customers are serviced

Cloud Computing – Deployment Models

Private Cloud: The cloud infrastructure is operated solely for an organization.

Community Cloud: The cloud infrastructure is shared by several organizations and supports a specific community that has shared concerns

Public Cloud: The cloud infrastructure is made available to the general public or a large industry group and is owned by an organization selling cloud services\

Hybrid Cloud: A combination of all or some of the above

Cloud Computing for Libraries

- Building Community Power
- Building Digital Library / Repositories
- Searching Library Data
- File Repository
- Web portals
- Library Automation

The Future . . .

There is IoT on the Horizon