# A STUDY ON DIGITIZATION, DIGITAL PRESERVATION AND IPR

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## ABSTRACT:

*Libraries have expanded exponentially with the rapid developments in Information technology and creation of digital information resources. In this paper an attempt has been made to present procedures of digitization, the steps followed in digitization and the equipments required for it, and the seres of actions, policies, risks, strategies and rights to be followed for preservation of digital resources.*

***Keywords:*** *Digital Procedures. Preservation of Resources, Intellectual property Rights.*

## Introduction

Digitization is the representation of an object, image, sound, document, or an analog signal by a discrete set of its points. The result is called digital representation or a digital image, for the object, and digital form, for the signal. Digitizing is capturing an analog signal in digital form. It refers to conversion of physical object into an electronic format, which can be stored and accessed via a computer. The physical object may be a printed text, manuscript, image or sound, film and video recording form an analogue format to a digital one. The image may be captured using a scanner or a digital camera and to sometimes to optimize the clarity, optical character recognition software is employed to the electronic image.

### How the digitization of libraries is evolving library spaces and building communities

It's easy to forget that once upon a time books were the world's original information technology. Before the advent of the internet, all librarians needed to be knowledgeable about primarily was authors, titles and subject matter. Now that libraries are becoming increasingly digitized and more community-based, they're calling for modern librarians to add tech and maker know-how to their skill set. Today, the three biggest needs library visitors have include materials, expert help, and computer and wifi access.

According to the Library Research Service, nearly 97% of all public libraries provide free internet access, both at terminals and to mobile devices. In 2014, more than 200 thousand computers terminals in public libraries served over 340 million internet sessions to patrons.

Beyond connectivity, many libraries are finding that library users are seeking experiential learning. Public libraries nationwide are moving more toward offering a range of experiences with books and materials, from visiting a library and checking materials out, to creating their own books, music, and video using library spaces and resources.

## How else is technology changing library atmospheres?

On the East Coast, the James B. Hunt Library in North Carolina State University runs "Robot Alley" a robots-at-your-service facility, where bookBots barcode, organize and deliver books under five minutes after a library uses makes a request through an online catalog.

The NC library's Game Lab offers a high-tech, interactive atmosphere with video game consoles, a 20.3 x5 Christie MicroTiles display that can be used for viewing or game development and research, and surround sound. All the lab's laptops and mobile devices come with network enabled applications.

Equipped with two 3D printers and a laser cutter, the Hunt Library also gives hands-on classes in its Makerspace, and provides immersive learning experiences in its Teaching and Visualization Lab. Here, information can be visualized in HD, and simulations of changing city landscapes can be consumed.

Ultimately, libraries are still a haven for people to connect.

"There are very few spaces in most communities that are free for groups to meet in, and a public library can fill that need," says Miller. "As we've remodeled or expanded our libraries in the last ten years, we've been asked over and over for more spaces—event spaces, study rooms, display spaces and quiet reading areas. We are building those spaces for people to use and to enjoy and make connections with each other."

**It involves**

- Identification of the items for the collections
- Choice of formats
- Choice of hardware
- Selection of medium
- Storage and archiving management

**Steps in Digitization:**

The first step in the process of digitizing a text that exists in print/paper document is to convert it into a digital image. For creating this image from paper, scanners and digital that cameras are used. Scanner is a device that optically scans images, printed text, handwriting, or an object, and converts it to a digital image.

Scanning of documents has become a necessity due to its various advantages in today's time. Document digitization is meant for improving staffs efficiency, thereby cost efficiency and results in better customer services

**Equipments Required**

- Flat bed scanners
- Sheet feed scanners
- Drum scanners
- Open book scanners
- Digital cameras
- Slide scanners
- Microfilm scanners
- Audio/Video boards (linked to cameras/audio or video players/ microphones/etc.)

**Defining Digital Preservation**

**1. "**Digital preservation is the series of actions and interventions required to ensure continued and reliable access to authentic digital objects for as long as they are deemed to be of value."

**2. "**Digital preservation combines policies, strategies and actions that ensure access to digital materials over time."

**Risks:**

Much digital content is at risk of loss because there is little robust and secure infrastructure for its collection, management, and preservation. In building a national strategy, our nation must address four categories of risk

**Technology Risks:**

- Hardware and software, both proprietary and open source, can be challenge to maintain and keep current.
- Content formats can be complex and fragile. They are often not well documented and frequently become obsolete.
- Life cycle management risks such as data migration, file degradation or unauthorized use can make content usable.

**Legal and Policy Risks:**

- Privacy claims can prohibit collection and documentation of content
- Copy right laws are unclear about libraries right to create and keep preservation copies
- Sarbanes- Oxley regulations can include content owners to destroy historically valuable documents.
- The law does not recognize public incentives for digital content. There are few policy incentives for concerned parties to preserve content in the public interest.

**Content Risks:**

- The volume or complexity of content makes it difficult to collect comprehensively

- Insufficient description of content makes its challenging to discover or retrieve it for use

**Organizational Risks:**

- Insufficient resources to maintain information can lead to content loss.
- Lines of authority and responsibility for maintaining digital content are often not aligned with the demands of such content.
- Insufficient skilled personnel can prevent even routine best practices from being implemented

**Strategies for preservation:**

In 2006, OCLC a four point strategy for the long-term preservation of digital objects that consisted of:

- Assessing the risks for loss of content posed by technology variables such as commonly used proprietary file formats and software application.
- Evaluating the digital content objects to determine what type and degree of format conversion or other preservation actions should be allied.
- Determining the appropriate metadata needed for each object type and how it is associated with the objects.
- Providing access to the content.

**Strategies for digital Preservation:**

1. **Refreshing**: Refreshing is the transfer of data between two types of the same storage medium so there are no bitrates changes or alteration of data

**2. Replication/Bit stream copying:** Creating duplicate copies of data on one or more systems is called replication. Data that exists as a single copy in only one location is highly vulnerable to software of hardware failure, intentional or accidental alteration and environmental catastrophes like fire, flooding, etc. replicated data may introduce difficulties in refreshing, migration, versioning, and access control since the data is located in multiple places.

**3. Metadata Preservation:** The effective use of digital resources in an archive will rely on a robust system of resource description for the purpose of resource discovery, managing access and ensuring preservation of the resources.

**4. Emulation:** It uses special type of software called"' an emulator' to translate instructions from original software to execute on new platforms/on environment.

**5. Data Archaeology:** It is preservation strategy wherein the data would be refreshed regularly, but no migration would be performed. It includes methods and procedures to rescue content from damaged media like hardware, software.

**Intellectual Property Rights:**

The advent of computers and other technologies have paved a way to provide access to the copyrighted works available in digital forms. The technologies are very popularly used to develop systems like digital libraries, document management system etc.,

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