



National Digital Library of India



Development of National Digital Library of India – Towards Building a National Asset



**WINNER *m*Billionth South Asia Award 2017:
in Learning and Education Category
for Android Mobile App**



NDLI: VISION & MISSION

NMEICT

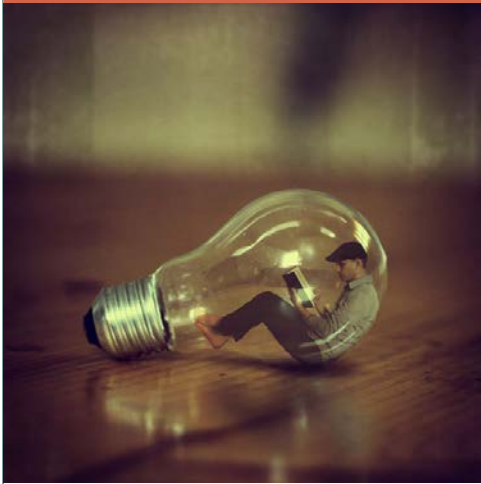
National Mission on Education Through ICT

**NMEICT: National Mission on
Education Through Information and
Communication Technology**



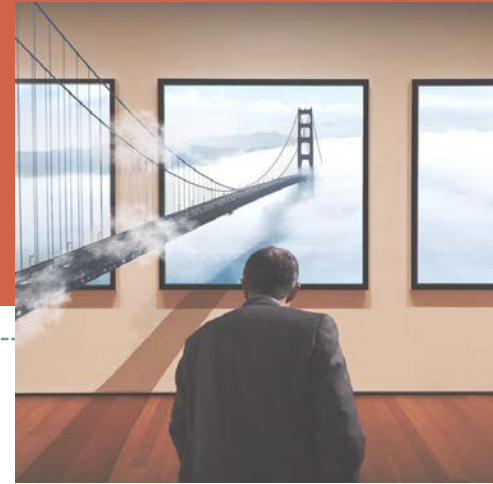
Government of India
Ministry of Human Resource
Development





NDL Vision

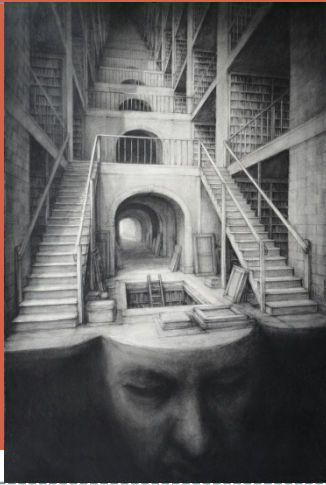
2



BUILD UP

**NATIONAL DIGITAL LIBRARY OF INDIA
AS A NATIONAL KNOWLEDGE ASSET –**

**THE KEY DRIVING FORCE FOR EDUCATION,
RESEARCH, INNOVATION, AND
KNOWLEDGE ECONOMY IN INDIA**



NDL Mission

3

TO CREATE A 24X7-ENABLED INTEGRATED NDL
AS A UBIQUITOUS DIGITAL KNOWLEDGE
SOURCE OF THE NATION – CATERING TO
IMMERSIVE E-LEARNING FOR
ALL LEARNERS AT ALL LEVELS IN ALL AREAS

TO INITIATE A MOVEMENT FOR INTEGRATED
DIGITAL LEARNING ACROSS INDIA

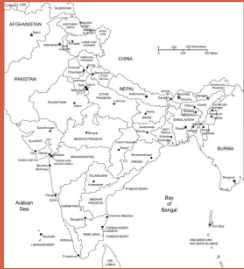
NDL Motto

4



INCLUSIVE
&
OPEN





National Digital Library of India

5

Issues, Architecture And Use Models

*Libraries are more important to the
education system than the institutions
such as schools, colleges and universities*
– Rabindranath Tagore



User-side

- Wide geographic expanse & Large population
- Huge number of students
- Large number of institutions
- Varied linguistic diversity
- Severe lack of Teachers

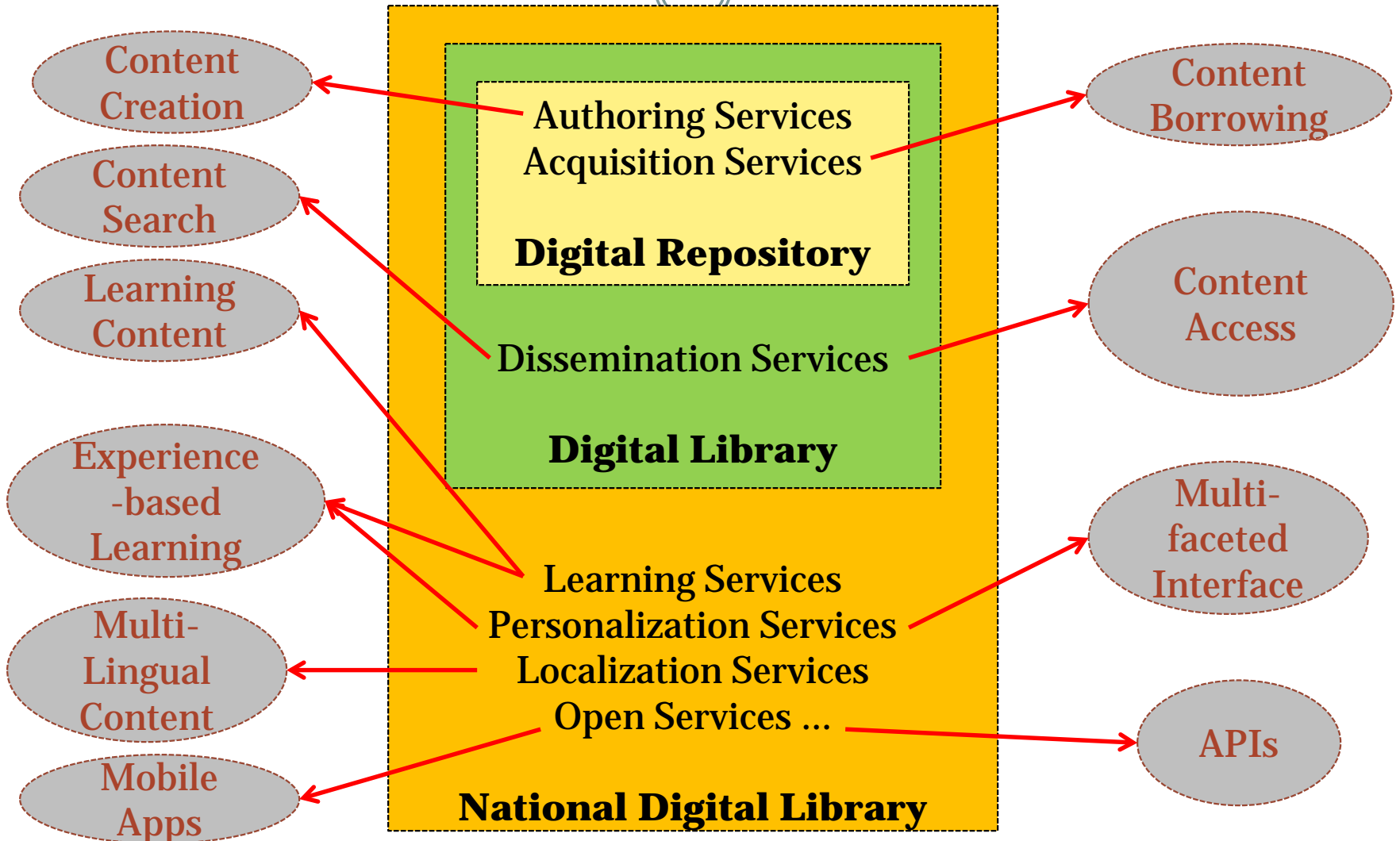


Provider-side

- **Wealth of digital content**
 - Books and Articles
 - ETD
 - Question Papers and Solutions
 - Video Lectures - MOOCs
 - Simulations & Animations
 - NMEICT Projects
 - Data
 - ...
- No single-window search
- Google search uses keyword – no metadata search
- Widely varied DL technology
- Lack of Interactivity, Vernacular support
- Low integration between content and learning system
- Weak ecosystem between learners and teachers

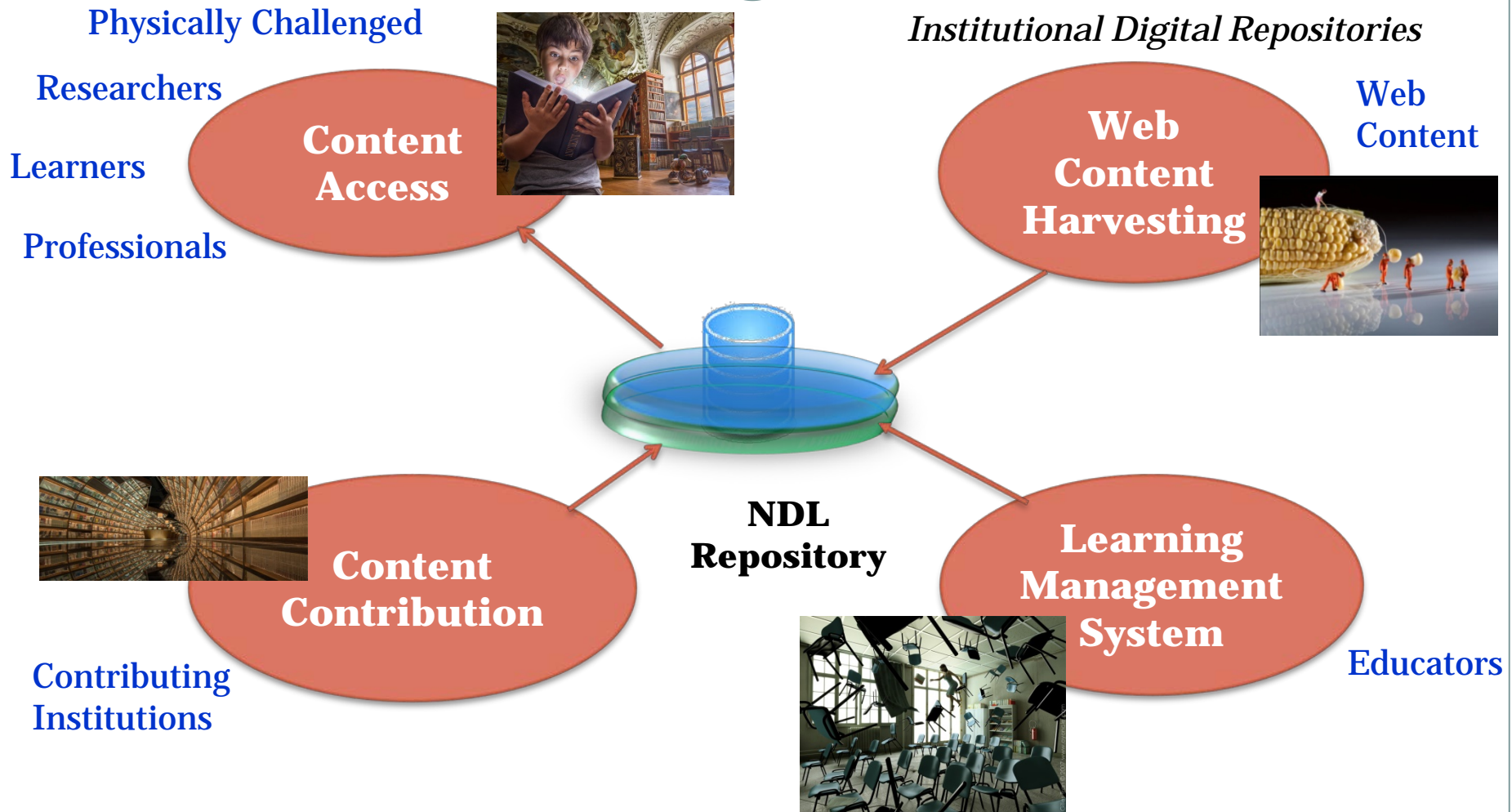
National Digital Library: Service Architecture

7



Use Models

8



Presentation Model

9

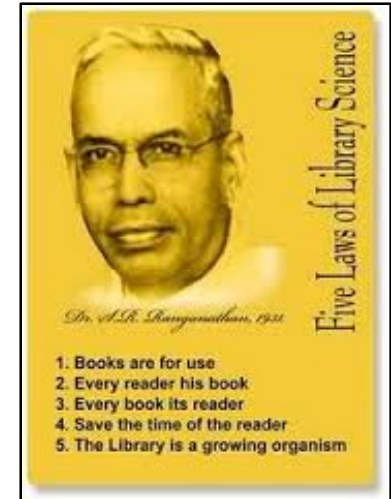
- Not a new library – an umbrella
- Collects and ingests metadata only
- Presents full-text from source view
- Provides:
 - Search
 - Browse



Objective and Scope

10

**TARGETS
CONTENTS,
STAKEHOLDERS,
CONTRIBUTORS,
USERS,
ARCHITECTURE, AND
THE BIG PICTURE**



S R Ranganathan Laws

- **Books are for use**
- **Every reader his [or her] book**
 - **Every book its reader**
 - **Save the time of the reader**
- **The library is a growing organism**

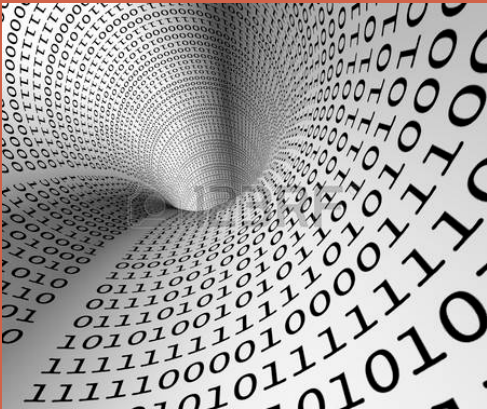
Objectives

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- **A 24X7-enabled Infrastructure** for NDLI with single window search facility – To include h/w systems, n/w, s/w tools, applications and interoperability
- **Harvest IDRs** across institutions of the nation to provide integrated access
- **Facilitate select institutes to disseminate existing content and create new digital content**
- **Immersive E-learning environments at multiple levels spanning across**
 - **All academic levels** – school to life-long learning
 - **All disciplines** – Science, Arts, Engineering, Medical, Law, and
 - **All languages** – used as medium of instruction.
- **Interfaces in Indian Languages & for DA**

Digital Contents

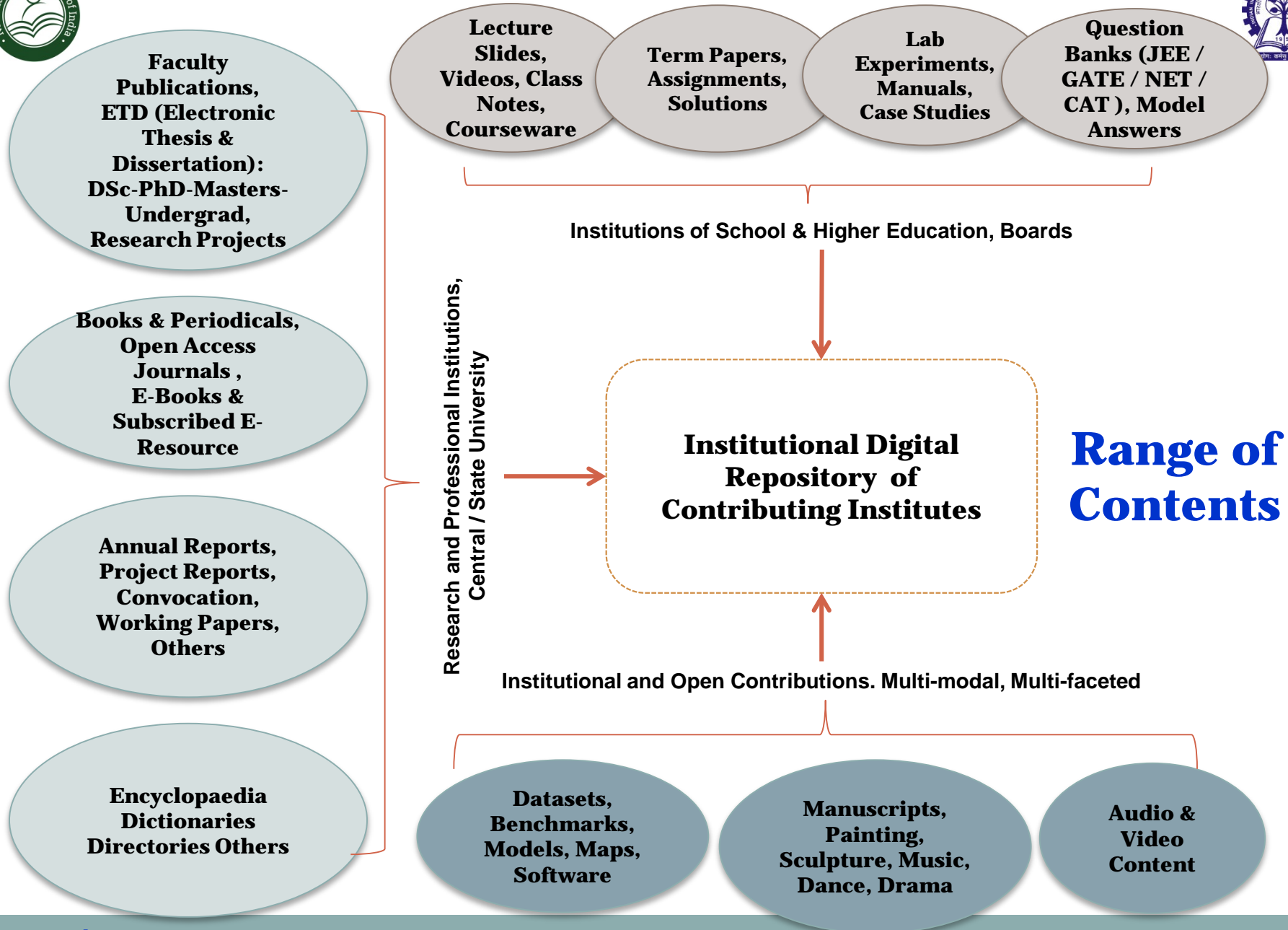
Digital, Surrogate
Digital, Metadata
Digital, etc.



- 7679334-abstract-image-of-tunnel-with-binary-language.jpg
- https://www.123rf.com/profile_carloscastilla
- 450 pixels X 376 pixels
- 72 dpi
- Royalty Free

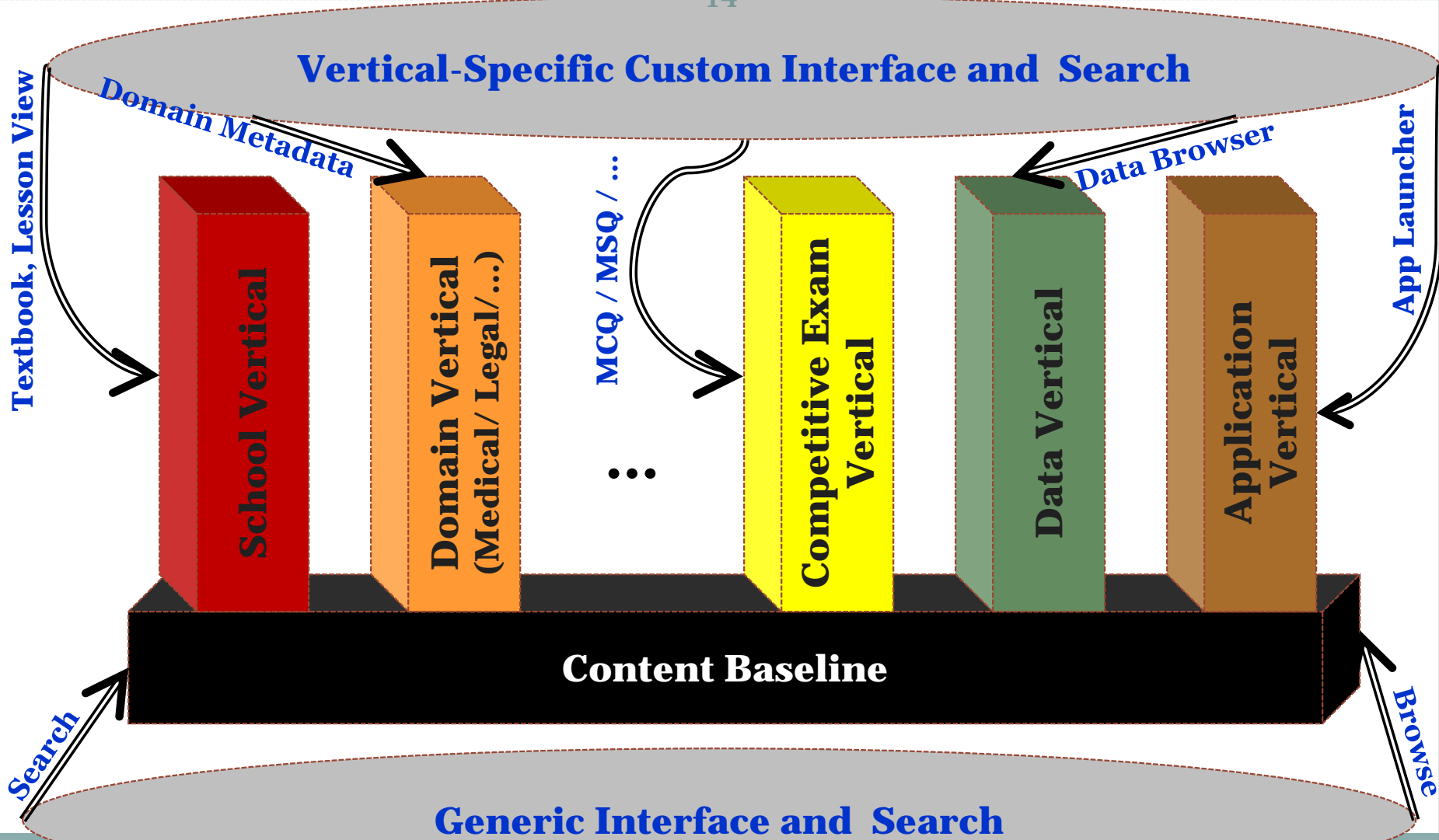
- Content at NDL
 - Born-digital object
 - Digital surrogate of a physical object
 - Digital metadata of physical object
- Metadata at NDL
 - NDL does not store contents
 - NDL only ingests metadata for Search & Browse
 - Content (Full-text) is delivered from Source

A content is included (metadata ingested) in NDL if it is expected to have educational value



Content View Architecture

14



Stakeholders

Roles and Responsibilities



Stakeholder	Roles and Responsibility
Government	<ol style="list-style-type: none"> 1. Sponsor and facilitator 2. Content Contributor <ul style="list-style-type: none"> • Ministries / Departments • R & D Labs
Institutions <ul style="list-style-type: none"> • Public / Private • Academic / R & D / Educational 	<ol style="list-style-type: none"> 1. Host Institution – IIT Kharagpur 2. Contributing Institution – Supporting IDRs 3. Participating Institution – Providing Users & Feedback
Public <ul style="list-style-type: none"> • NGOs • Individuals 	<ol style="list-style-type: none"> 1. Use and Feedback 2. Metadata by Crowd Sourcing 3. Content by Crowd Sourcing
Industry	<ol style="list-style-type: none"> 1. Technology Providers
Publishers	<ol style="list-style-type: none"> 1. Metadata Provider 2. Content Provider (under various licensing schemes)

Users & Access

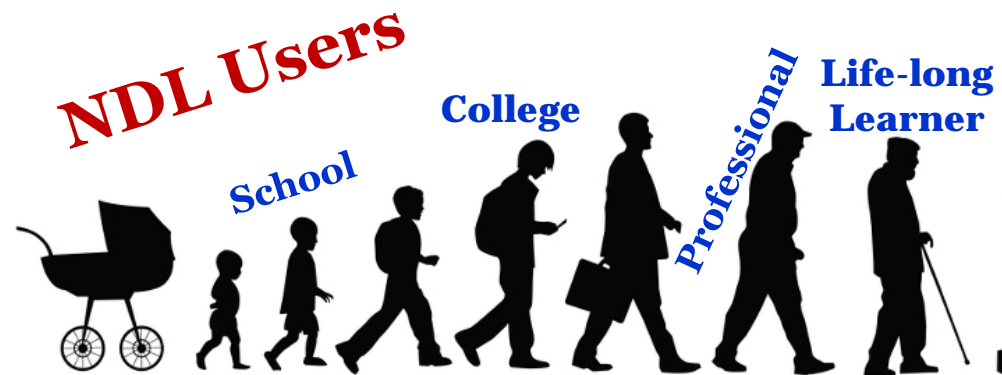
Individual



Institutional

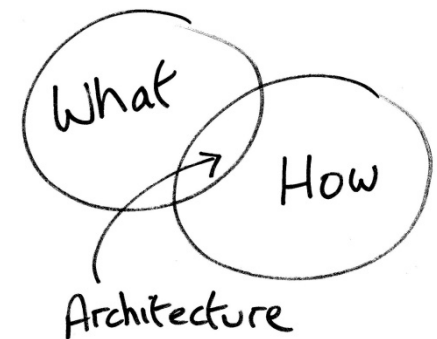


- Registration is **Open to all**
- Registration Types:
 - **Individual**
 - ✦ Registers directly
 - **Institutional**
 - ✦ By request from Institution
 - ✦ Managed by authenticated Nodal Person
 - ✦ Convenient for bulk upload of users



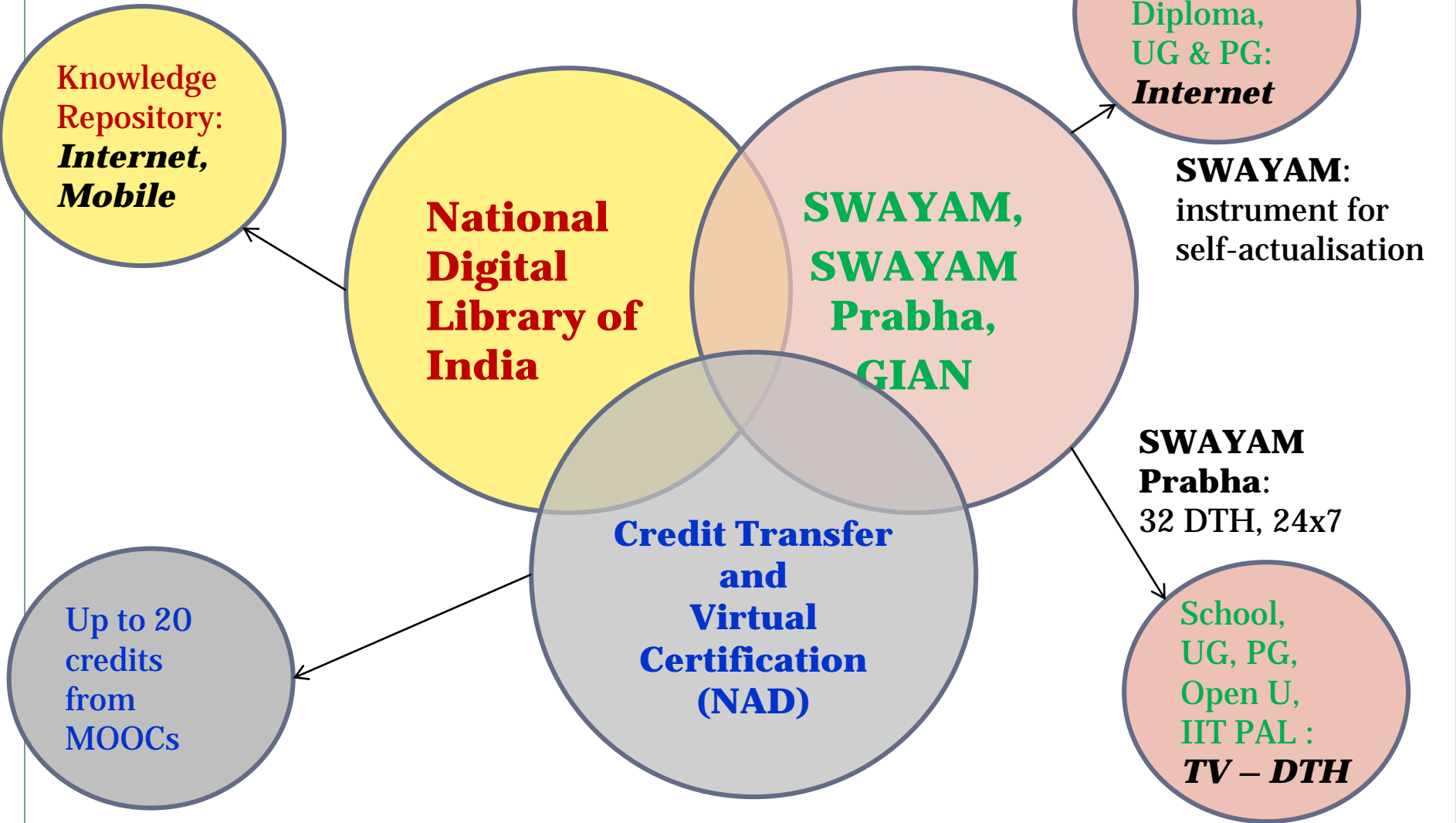
Architecture

- **Index Management**
 - Ingestion of Metadata
 - Indexing of Metadata for Search
- **Content Management**
 - Dissemination of local contents
- **Learning Management**
 - Creation of Content
 - Handling learning interactions

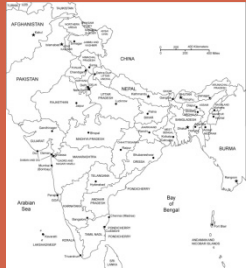




The Big Picture



National Digital Initiative in Education



NDLI Portal

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Walkthrough

*Where the mind is without fear and the head is held high
Where knowledge is free
Where the world has not been broken up into fragments
By narrow domestic walls
Where words come out from the depth of truth
Where tireless striving stretches its arms towards perfection
Where the clear stream of reason has not lost its way
Into the dreary desert sand of dead habit
Where the mind is led forward by thee
Into ever-widening thought and action
Into that heaven of freedom, my Father, let my country awake.*

– Rabindranath Tagore





Landing Page

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File Edit View History Bookmarks Tools Help

National Digital Library of ... X +

https://ndl.iitkgp.ac.in

Search



Browse Search

Language Log-In



National Digital Library of India

1,544,903 items hosted in NDL

Enter your search key...

English



About National Digital Library of India



Learning Resource Type



Subject Domain



Featured Sources



News and Events

Educational materials are available for users ranging from primary to post-graduate levels



Member Log-In

E-mail address

Enter your password

279739



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Account Recovery

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Home Page

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National Digital Library of ... X +

https://ndl.iitkgp.ac.in

Search

Browse - Search

Language - Anindya -

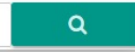


National Digital Library of India

1,544,903 items hosted in ND

Enter your search key...

English



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MINISTRY OF HUMAN
RESOURCE DEVELOPMENT

COORDINATED BY
IIIT KHARAGPUR
INDIAN INSTITUTE OF
TECHNOLOGY KHARAGPUR



About National Digital Library of India



Learning Resource Type



Subject Domain



Featured Sources



News and Events

Educational materials are available for users ranging from primary to post-graduate levels

Activity Area

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Welcome to National Digital Library of India

You may like to explore ND through following activities

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NDL Video YouTube Link

Feedback



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Windows taskbar with icons for Start, Search, File Explorer, Edge, Chrome, and other applications. System tray shows date and time: 11:22 05-12-2016.



Search Result Page

23

File Edit View History Bookmarks Tools Help

NDL: Anindya

https://ndl.iitkgp.ac.in/result?q={"t":"search","k":"magnetism","s":[],"b":{"filters":[]}}

Search

Language Anindya



Browse

Search

Language

Anindya

magnetism

English

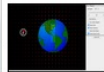


Advanced search

15,913 results found in 0.3452 secs

Refine search results

- Author
- Subject Category
- Educational Degree
- Difficulty Level
- Educational Level
- File Format
- Language
- Learning Resource Type
- Source



Magnet and Compass - Magnetism, Magnetic Field, Magnets

Source: PhET Interactive Simulations
Classroom | Homework

ENG

Abstract: Ever wonder how a compass worked to point you to the Arctic? Explore the interactions between a compass and bar magnet, and then add the earth and find the surprising answer! Vary the magnet's strengt [View more](#)



Permanent Magnets And Magnetism

Source: Digital Library of India
Author: Hadfield, D
Reading

ENG



Magnets and Electromagnets - Magnetism, Magnetic Field, Electromagnets

Source: PhET Interactive Simulations
Classroom | Homework

ENG

Abstract: Explore the interactions between a compass and bar magnet. Discover how you can use a battery and wire to make a magnet! Can you make it a stronger magnet? Can you make the magnetic field reverse?



Magnetism

Source: Digital Library of India
Reading

ENG



Magnetism

Source: Digital Library of India
Author: Stoner, Edmund C ; Author | Preface By Richardson, O. W
Reading

ENG



Magnetism

Source: Librivox
ENG

Abstract: LibriVox's Short Story Collection 034: a collection of 20 short works of fiction in the public domain read by a group of LibriVox members.

Content type

- All
- Text
- Audio
- Video
- Simulation
- Presentation
- Animation
- Image

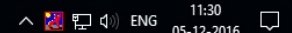
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Contact





Refine Search (Author) Page

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File Edit View History Bookmarks Tools Help

NDL: Anindya

https://ndl.iitkgp.ac.in/result?q={"t":"search","k":"magnetism","s":[{"author="Gupta%2C L. C."}],{"filters":[]}}

Search



Browse

Search

Language

Anindya

magnetism

English



Advanced search

126 results found in 0.1498 secs
Gupta, L. C.

Refine search results

- Author
- Enter your search key...
- Gupta, L. C. 126
- Kumar, Anil 123
- Nagarajan, R. 122
- Nath, G. 119
- Mitra, A. 118
- Educational Level
- File Format
- Language
- Learning Resource Type
- Source



Double Magnetic Transition And Anomalous Magnetoresistance In ErSUB2 SUBNiSUB3 SUBSiSUB5 SUB

Source: Indian Academy of Sciences
Author: Mazumdar, Chandan | Nagarajan, R. | Nigam, A. K. | Ghosh, ...
Research | UG or PG
ENG

Abstract: Synthesis and magnetic properties of a new material, ErSUB2 SUBNiSUB3 SUBSiSUB5 SUB, are reported here. This compound exhibits a double magnetic transition (TSUBm SUB~4K and 3K) as revealed by heat ca View more



Magnetic Properties Of RNiSUB2 SUBBSUB2 SUBC (R=Pr, Sm, Dy And Tb)

Source: Indian Academy of Sciences
Author: Hossain, Z. | Dhar, S. K. | Nagarajan, R. | Gupta, L. C. | Godar...
Research | UG or PG
ENG

Abstract: We report here the results of magnetization and heat capacity measurements on RNiSUB2 SUBBSUB2 SUBC (R=Pr, Sm, Dy and Tb). Sm, Dy and Th compounds order magnetically at 10 K, 11 K and 18 K respectivel View more



Valence Instability In Eu(PdSUB1-x SUBAuSUBx SUB)SUB2 SUBSiSUB2 SUB: The Global Phase Diagram

Source: Indian Academy of Sciences
Author: Segre, C. U. | Croft, M. | Hodges, J. A. | Murgai, V. | Gupta, L. ...
Research | UG or PG
ENG

Abstract: A system has been discovered in which the characteristic energies of a valence instability and a magnetic ordering instability can be brought into parity. This leads to a novel phase diagram where a View more



Double magnetic transition and anomalous magnetoresistance in Er2Ni3Si5

Source: IIT Bombay
Author: Mazumdar, Chandan | Nagarajan, R. | Nigam, A. K. | Ghosh, ...
UG or PG
ENG

Abstract: Synthesis and magnetic properties of a new material, Er2Ni3Si5, are reported here. This compound exhibits a double magnetic transition (Tmnot, vert, similar4 K and 3 K) as revealed by heat capacity me View more



Anomalous High TSUBm SUB For Yb-ions In A New Quaternary Borocarbide, YbNiBC

Source: Indian Academy of Sciences
Author: Hossain, Z. | Nagarajan, R. | Dhar, S. K. | Gupta, L. C.
Research | UG or PG
ENG

Abstract: We report here the synthesis and magnetic properties of a new quaternary magnetic borocarbide YbNiBC. The material forms in the LuNiBC-type structure with lattice parameters a=3.503 Å and c=7.556 View more



Transport, magnetic, and Sn-119 Mossbauer studies on magnetically ordered valence fluctuating compound SmRuSn3

Source: IIT Bombay

Abstract: SmRuSn3 is a unique compound among the known Sm-based valence fluctuation (VF)

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Full Text (Contents) Page



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File Edit View History Bookmarks Tools Help

NDL: Anindya x NDL: Studies Of Structural... x NDL: Transport, magnetic,... x DSpace at IIT Bombay: Tra... x +

dspace.library.iitb.ac.in/jspui/handle/100/1441

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Please use this identifier to cite or link to this item: <http://dspace.library.iitb.ac.in/jspui/handle/100/1441>

Title: Transport, magnetic, and Sn-119 Mossbauer studies on magnetically ordered valence fluctuating compound SmRuSn3

Authors: [MAZUMDAR, C](#)
[HOSSAIN, Z](#)
[NAGARAJAN, R](#)
[GODART, C](#)
[DHAR, SK](#)
[GUPTA, LC](#)
[PADALIA, BD](#)
[VIJAYARAGHAVAN, R](#)

Keywords: cerusn3

Issue Date: 1996

Publisher: AMER INST PHYSICS

Citation: JOURNAL OF APPLIED PHYSICS,79(8)6349-6351

Abstract: SmRuSn3 is a unique compound among the known Sm-based valence fluctuation (VF) systems. Its crystallographic structure has two inequivalent Sm sites and Sm ions at only one of them are in VF state while the Sm ions in the other site orders magnetically. Our (119)Mossbauer studies show a quadrupolar splitting at the Sn site, consistent with the noncubic symmetry of the Sn site. A broadening of the Mossbauer spectrum is seen due to magnetic ordering of the material. The transferred hyperfine field at Sn site at 4.2 K is small. (C) 1996 American Institute of Physics.

URI: <http://dx.doi.org/10.1063/1.361996>
<http://dspace.library.iitb.ac.in/xmlui/handle/10054/14612>
<http://hdl.handle.net/100/1441>

ISSN: 0021-8979

Appears in Collections: [Proceedings papers](#)





Full Text (Metadata) Page



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NDL: Anindya NDL: Transport, magnetic,...

ndl.iitkgp.ac.in/document/MRWJqtyayOu28XZJfwvecrCTyczwrQyld79xvCuTcnwdpxSZWMVbzdZWbjrUNgn6nlfP-_SY2qzCRHkdhzWqw

Search



Content Metadata

Tag Comment Language Anindya



Transport, magnetic, and Sn-119 Mossbauer studies on magnetically ordered valence fluctuating compound SmRuSn3

Author Mazumdar, C. ♦ Hossain, Z. ♦ Nagarajan, R. ♦ Godart, C. ♦ Dhar, S. K. ♦ Gupta, L. C. ♦ Padalia, B. D. ♦ Vijayaraghavan, R.

Source IIT Bombay

Content type Text

Publisher AMER INST PHYSICS

File Format HTM / HTML

Language English

Subject Keyword cerusn3

Abstract SmRuSn3 is a unique compound among the known Sm-based valence fluctuation (VF) systems. Its crystallographic structure has two inequivalent Sm sites and Sm ions at only one of them are in VF state while the Sm ions in the other site orders magnetically. Our (119)Mossbauer studies show a quadrupolar splitting at the Sn site, consistent with the noncubic symmetry of the Sn site. A broadening of the Mossbauer spectrum is seen due to magnetic ordering of the material. The transferred hyperfine field at Sn site at 4.2 K is small. (C) 1996 American Institute of Physics.

Education Level UG or PG

Learning Resource Type Article

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11:47 05-12-2016



Full Text Page

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NDL: Anindya X NDL: Transport, magnetic, ... X +

ndl.iitkgp.ac.in/document/MRWJqtyayOu28XZJfwvecrCTyczwrQyld79xvCuTcnwdpxSZWMVbzdZWbjrUNgn6nlfP-_SY2qzCRHkdhzWqw

Search



Content

Metadata

Tag

Comment

Language -

Anindya -

Page: 1 of 4

Automatic Zoom

AIP | Journal of
Applied Physics

Transport, magnetic, and ^{119}Sn Mössbauer studies on magnetically ordered valence fluctuating compound SmRuSn_3

Chandan Mazumdar, Z. Hossain, R. Nagarajan, C. Godart, S. K. Dhar et al.

Citation: *J. Appl. Phys.* **79**, 6349 (1996); doi: 10.1063/1.361996

View online: <http://dx.doi.org/10.1063/1.361996>

View Table of Contents: <http://jap.aip.org/resource/1/JAPIAU/v79/i8>

Published by the American Institute of Physics.

Related Articles

Valence fluctuation and electron–phonon coupling in $\text{La}_{68-x}\text{Ce}_x\text{Al}_{10}\text{Cu}_{20}\text{Co}_2$ ($x = 0, 34$, and 68) metallic glasses

J. Appl. Phys. **108**, 033525 (2010)

Intermediate valency of Eu in a cubic intermetallic compound $\text{Ce}_{0.5}\text{Eu}_{0.5}\text{Pd}_3$

Appl. Phys. Lett. **94**, 182503 (2009)

Interface and Mn valence effects in ferromagnetic insulating multilayers based on Mn and tin oxide

J. Appl. Phys. **103**, 07D129 (2008)

Charge states of strongly correlated 3d oxides: from typical insulator to unconventional electron–hole Bose liquid

Low Temp. Phys. **33**, 234 (2007)

The effect of mixed Mn valences on Li migration in LiMn_2O_4 spinel: A molecular dynamics study

Appl. Phys. Lett. **84**, 529 (2004)

Additional information on *J. Appl. Phys.*

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Refine Search (Educational Level) Page



28

File Edit View History Bookmarks Tools Help

NDL: Anindya

https://ndl.iitkgp.ac.in/result?q={"t":"search","k":"magnetism","s":{"educationalLevel="highSchool"},"b":{"filters":[]}}

Search

Language Anindya



Browse

Search

Language

Anindya

magnetism

English



Advanced search

43 results found in 0.2153 secs

Class XI to XII

Refine search results

Author

Subject Category

Difficulty Level

Educational Level

Enter your search key...

UG or PG

12,605

Career development

141

Class XI to XII

43

Class IX to X

13

Class V to VIII

7

File Format

Language

Learning Resource Type

Source



Spoke Magnet

Source: Project OSCAR

Author: Sahasrabudhe, Sameer

Demonstration | Self Learning | Class IX to X | Class XI to XII

ENG

Abstract: Using a ring magnet, make a card sheet fan turn round-and round.Do the magnet and the fan rotate in the same direction?



Magnetism and matter

Source: NCERT

Reading | Class XI to XII

ENG

Abstract: This chapter introduces the bar magnet, magnetism and Gauss's law. It also includes magnetic properties of materials and permanent magnets and electromagnets.



Magnetism and matter

Source: NCERT

Assessment | Class XI to XII

ENG

Abstract: This chapter contains problems on magnetism and matter. The content consists of various questions about the chapter. The questions are divided into three parts; A) Multiple choice questions, B) Short View more



Moving charges and magnetism

Source: NCERT

Reading | Class XI to XII

ENG

Abstract: This chapter introduces the concept magnetic force, motion in a magnetic field, motion in combined electric and magnetic fields. It deals with Biot-Savart Law, Ampere's circuital law.



Moving charges and magnetism

Source: NCERT

Assessment | Class XI to XII

ENG

Abstract: This chapter contains problems on moving charges and magnetism. The content consists of various questions about the chapter. The questions are divided into three parts; A) Multiple choice questions, B View more



Physics: question paper

Source: NCERT

Assessment | Class XI to XII

ENG

Abstract: This section contains problem set having physics code no 55/1/1 of series SKS/1 of class XII.

Content type

All

Text

Animation

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Ask me anything



12:00 05-12-2016



Full Text (NCERT) Page



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NDL: Anindya NDL: Magnetism and mat...

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Content Metadata

Page: 1 of 31 Automatic Zoom

Tag Comment Language Anindya

Chapter Five
MAGNETISM AND MATTER

- Electric charges and fields
- Electrostatic potential and capacitance
- Current electricity
- Moving charges and magnetism
- Magnetism and matter**
- Electromagnetic induction
- Alternating current
- Electromagnetic waves
- Answers
- Glossary

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Search Filter Page (Video)



30

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NDL: Anindya







https://ndl.iitkgp.ac.in/result?q={"t":"search","k":"magnetism","s":{"type":"video"},"b":{"filters":{}}}

National Digital Library of India Search Language Anindya

magnetism English Search

176 results found in 0.1509 secs

- Refine search results
- Author
- Subject Category
- Educational Level
- File Format
- Language
- Learning Resource Type
- Source

-  **Magnetic Resonance**
Source: NPTEL
Author: Rangarajan, G.
Lecture | UG or PG
ENG
-  **Magnetic Fields**
Source: NPTEL
Author: Vasudevan, Krishna
Lecture | UG or PG
ENG
-  **Magnetic Circuit**
Source: NPTEL
Author: Vasudevan, Krishna
Lecture | UG or PG
ENG
-  **Magnetic permeability**
Source: Khan Academy
Self Learning
ENG
Abstract: Let's find out more about this invisible force which guides the compass. How strong is it? What shape is it?
-  **Floating magnet**
Source: Khan Academy
Self Learning
ENG
Abstract: The discovery of magnetism. What can we do with this invisible force?
-  **Solving for Magnetic Field of a magnet in presence of Magnetic Materials**
Source: NPTEL
Author: Harbola, Manoj K.
Lecture | UG or PG

Content type

- All
- Video**



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Windows taskbar: Ask me anything, system tray icons, 12:02, 05-12-2016



Browse (by Type) Page

31



File Edit View History Bookmarks Tools Help

NDL: Anindya

https://ndl.iitkgp.ac.in/result?q={"t":"type","k":"","s":"","b":{"browse":"type","filters":{"type="audio"}}}

Search

Language - Anindya -

Text **Audio** Video Image Animation Simulation Presentation Application

206,352 results found in 0.0329 secs

▼ Refine browse results

- > Author
- > Subject Category
- > Educational Level
- > File Format
- > Language
- > Learning Resource Type
- > Source

	Dr .P. Govindasamy, syndicate member felicitating vice chancellor Dr.K.Meena. Source: Bharathidasan University Author: Govindasamy, P. UG or PG TAM
	Dr .P. M. Mansure, syndicate member felicitating vice chancellor Dr.K.Meena. Source: Bharathidasan University Author: Mansure, P. M. UG or PG TAM
	Anna Birthday function Source: Bharathidasan University Author: Meena, K. UG or PG TAM
	Logic Source: Librivox Author: Stock, George William Joseph ENG
	Series The Ontario Readers Third Book Source: Librivox ENG
	Acknowledgements Source: Librivox

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Browse (by Subject) Page

32



File Edit View History Bookmarks Tools Help

NDL: Anindya
https://ndl.iitkgp.ac.in/result?q={"t":"DDC","k":"","s":"","b":{"browse":"DDC","filters":{"DDC":"511%3A%3AGeneral principles of mathematics\"}}}

National Digital Library of India | Browse | Search | Language | Anindya

Natural sciences & mathematics | Mathematics | General principles of mathematics

282 results found in 0.0516 secs

- Refine browse results
- Author
- Difficulty Level
- Educational Level
- File Format
- Language
- Learning Resource Type
- Source
- Content Type

- Fractions and Decimals**
Source: SCERT Andhra Pradesh
Classroom | Reading | Class V to VIII
- Smart Tables**
Source: SCERT Andhra Pradesh
Classroom | Reading | Class I to IV
- Mathematics (code 81- E) question paper April 2013**
Source: Karnataka Secondary Education Examination Board
Classroom | Reading | Problem Solving | Class IX to X
- Lecture 1: Introduction and Proofs**
Source: MIT OpenCourseWare
Self Learning | UG or PG
- Lecture 11: Relations, Partial Orders, and Scheduling**
Source: MIT OpenCourseWare
Self Learning | UG or PG
- Lecture 13: Sums and Asymptotics**
Source: MIT OpenCourseWare
Self Learning | UG or PG

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Browse (by Source) Page

33



File Edit View History Bookmarks Tools Help

NDL: Anindya

https://ndl.iitkgp.ac.in/result?q={"t":"sourceOrganization","k":"","s":[],"b": "browse":"sourceOrganization","filters":{"sourceOrganization="\\KrishiKosh - Ind

National Digital Library of India

Browse - Search

Language - Anindya -

LibriVox Librivox **KrishiKosh** Shodhganga Shodhgangotri N-LIST

KrishiKosh - Indian National Agricultural Resear

49,654 results found in 0.0028 secs

▼ Refine browse results

- Author
- Educational Degree
- Educational Level
- File Format
- Language
- Learning Resource Type
- Content Type

thumbnail not available	Minimal Descriptors Agri-Horticultural Crops: Fruit Crops Source: KrishiKosh - Indian National Agricultural Research System Reading UG or PG ENG
thumbnail not available	Commercialization Of Spices Medical And Aromatic Crops 1 - 2Noov Source: KrishiKosh - Indian National Agricultural Research System Reading UG or PG ENG
thumbnail not available	National Symposium On Current Trends In Onion Garlic,Chillies,And Seed Spices Production Marketing Utilization Source: KrishiKosh - Indian National Agricultural Research System Reading UG or PG ENG
thumbnail not available	Crops Product Diversification 8-10 November Source: KrishiKosh - Indian National Agricultural Research System Reading UG or PG ENG
thumbnail not available	Threats And Solutions To Spices And Aromatic Crops Industry Source: KrishiKosh - Indian National Agricultural Research System Reading UG or PG ENG
thumbnail not available	Harnessing The Potential Of North Eastern State For Spices Production Through Source: KrishiKosh - Indian National Agricultural Research System

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IIT Kharagpur

12:42 05-12-2016



Browse by (Learning Resource Type) Page



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File Edit View History Bookmarks Tools Help

NDL: Anindya

https://ndl.iitkgp.ac.in/result?q={"t":"learningResourceType","k":"","s":"","b":{"browse":"learningResourceType","filters":{"learningResourceType="article"}}}

Search

☆ 📄 📌 🏠 ☰



Browse ▾

Search

Language ▾

Anindya ▾

Book

Article

Thesis

Question Paper

Video Lecture

Audio Lecture

Article

280,880 results found in 0.0774 secs

Refine browse results

- > Author
- > Subject Category
- > Educational Degree
- > Difficulty Level
- > Educational Level
- > File Format
- > Language
- > Source
- > Content Type



On resolvable and affine resolvable variance - balanced designs

Source: ISI Kolkata
Author: Mukherjee, Rahul | Kageyama, Sanpei
UG or PG
ENG



Tenurial contracts in a pesant movement belt: field data on naxal bar, Kharibari and Phansidewa regions

Source: ISI Kolkata
Author: Chattapadhyay, Manabendu | Ghosh, Sumit Kumar
UG or PG
ENG



Characterizations multivariate normality. I through independence of some statistics

Source: ISI Kolkata
Author: Khatri, C. G. | Rao, C. Radhakrishna
UG or PG
ENG



Demography and demographical genetics of two isolated mountain villages of Northern Sikkim, Eastern Himalaya

Source: ISI Kolkata
Author: Das, Sawpan Kumar | Majumder, Partha P.
UG or PG
ENG



An IPPS sampling scheme using Lahiris method of selection

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13:09 05-12-2016



Indian Language (Hindi) Interface Page



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File Edit View History Bookmarks Tools Help

NDL: Anindya

https://ndl.iitkgp.ac.in/result?q={"t":"search","k":"महात्मा गांधी","s":[],"b":{"filters":{}}}

Search

☆ ⌵ ⌵ ⌵ ⌵ ⌵



ब्राउज़ -

खोज

महात्मा गांधी

२२ परिणाम प्राप्त हुए हैं ०.३९६० सेकण्ड्स में

हिन्दी



भाषा -

Anindya -

उन्नत खोज

खोज परिणामों को परिष्कृत/रिफाइन करें

- लेखक
- विषय
- शैक्षिक डिग्री
- कठिनाई स्तर
- शैक्षिक स्तर
- फ़ाइल फॉर्मेट/प्रारूप
- भाषा
- शैक्षिक संसाधन के प्रकार
- स्रोत संगठन



महात्मा गांधी

स्रोत: Karnataka Secondary Education Examination Board
Classroom | Reading | कक्षा IX - कक्षा X



महात्मा गांधी और स्व-निर्भरता

स्रोत: NCERT
Reading | कक्षा XI - कक्षा XII



सारांश: इस अध्याय में महात्मा गांधी के विचार प्रत्यक्ष रूप से उद्योगों और औद्योगिक समाज के बारे में बताया गया है। गांधी जी का विश्वास था कि औद्योगिक समाज वस्तुओं के असीमित उत्पादन पर आधारित है।



महात्मा गांधी और राष्ट्रीय आंदोलन

स्रोत: NCERT
Reading | कक्षा XI - कक्षा XII



सारांश: यह 'भारतीय के इतिहास कुछ विषय: भाग - 3' का चौथा अध्याय है। इस अध्याय का नाम 'महात्मा गांधी और राष्ट्रीय आंदोलन' है। इस अध्याय में 1915-1948 के महत्वपूर्ण काल के दौरान भारत में गांधी जी की गतिविधियों अधिक देखें



नौकर

स्रोत: NCERT
Reading | कक्षा V - कक्षा VIII



सारांश: यह अध्याय महात्मा गांधी जी की जीवनी पर आधारित है। महात्मा गांधी जी आश्रम में तथा अपने पुरे जीवन में, जीवन के प्रति जिस मूल्यवर्ग को मान्यता देते थे और उनकी पालन करते थे उसका वर्णन मिलता है।



स्वतंत्रता की और

स्रोत: NCERT
Reading | कक्षा I - कक्षा IV



सारांश: इस अध्याय में हमारे राष्ट्रपिता महात्मा गांधी के भारत चोरो आंदोलन पर आधारित एक इतिहास का कहानी है।



महात्मा गांधी यांचे गुरु नामदार गोपाळ कृष्ण गोखले जीवन - परीचय

स्रोत: Gokhale Institute of Politics and Economics
लेखक: Tope, Trimbak Krushnarao
Reading | स्नातक या स्नातकोत्तर



सामग्री प्रकार



टेक्स्ट

विषय में सामान्य प्रश्न डिस्कलेमर/अस्वीकरण

अपने सुझाव भेजें सामाजिक - प्रायोजक संपर्क

Ask me anything

12:46 05-12-2016

NDL Mobile App

36



Available on
Android
And
iOS

Institutional Roles and Responsibilities

37

TERMS OF REFERENCE TO CONTRIBUTE TO NDL



The worth of a librarian should be gauged by his power of attracting and looking after such circles by acting as the intermediary of an intimacy of relationship between reader and the library. – Rabindranath Tagore

Roles and Responsibilities

Host Institution

- **IDR**
 - Support for Setting up IDR
 - Installation CD
 - Manual
 - Training
 - IDR Service, if needed
- **Metadata**
 - NDL Metadata Standard
 - Creation, Curation Workflow
- **User**
 - Institutional Registration for Nodal Person
 - Bulk Addition of Users
- **Ongoing Support**
 - Over email, phone
 - Hands-on at NDL, if needed

Contributing or Participating Institution

- **IDR (CI only)**
 - Setup IDR in Institutional LAN
 - Register with OPENDOAR / ROADMAP
 - OAI-PMH compliance for harvesting
 - OAI-ORE compliance for full-text access
 - Allow external access & Update regularly
- **Content (CI only)**
 - Add Content
 - Encourage faculty, students, staff to contribute
 - Create and Curate Metadata
- **User**
 - Register as an Institution
 - Add users in bulk or send to NDL
- **Promote**
 - Organize Workshop
 - Identify and Integrate Source

Technology of NDL

39

METADATA ENGINEERING

USER INTERFACE & EXPERIENCE TRACKING

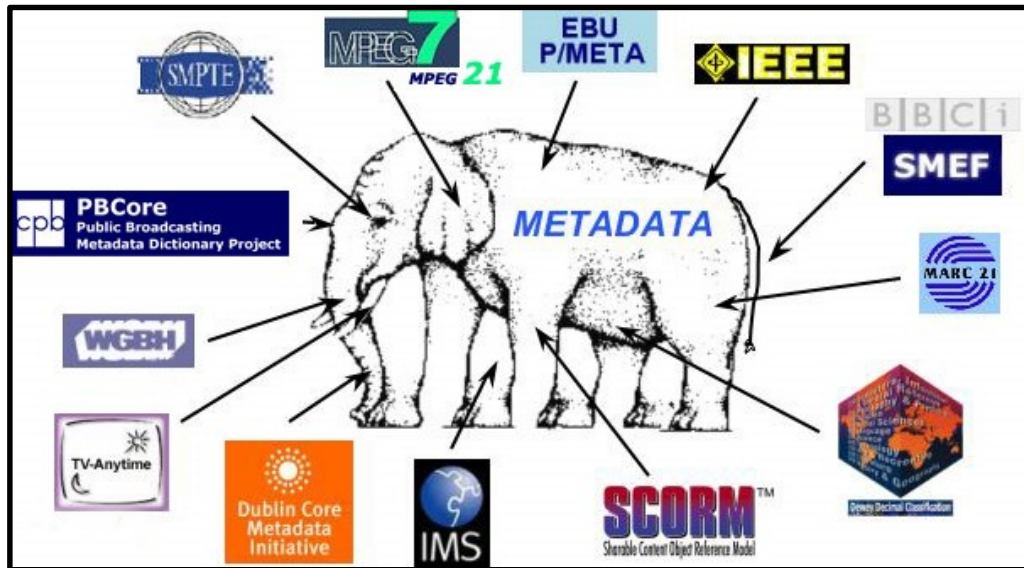


Metadata Engineering

- Metadata Standard
- Metadata Acquisition



Metadata Standard



Source: <http://courseweb.ischool.illinois.edu/~butler9/LIS501b/current.html>

Metadata Standard

42

- **Metadata**

- Is primarily **textual information** relating to Content
- Includes information that enables users to **identify, discover, search, browse, interpret, or manage** Content
- Includes **hyperlinks** that direct users to Content on the Source
- May include an **expressive description** of the Content

- **Metadata Standard**

- Defines **common understanding of the semantics** of the data
- Ensures **correct and proper use** and interpretation of the data
- Defined through a **set of fields, vocabs (optional), and instructions** for fill-up

NDL Metadata Design Challenges

43

- **Wide** category of resources
 - Generic metadata or domain specific?
- **Openness** of repository
 - Closed metadata standard may fail to describe a new resource
- **Scale** is enormous
 - Manual annotation is infeasible
 - Automatic annotation guided by crowd sourcing?



Metadata Requirements Specs

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- **To describe any digital resource**
 - Generic content metadata
 - ✦ Contributor, Description, Language, Format etc.
- **To describe domain specific resources**
 - Educational content metadata
 - ✦ Educational level, ToC, Type of learning material etc.
 - Thesis metadata
 - ✦ Institution, advisor, degree, researcher

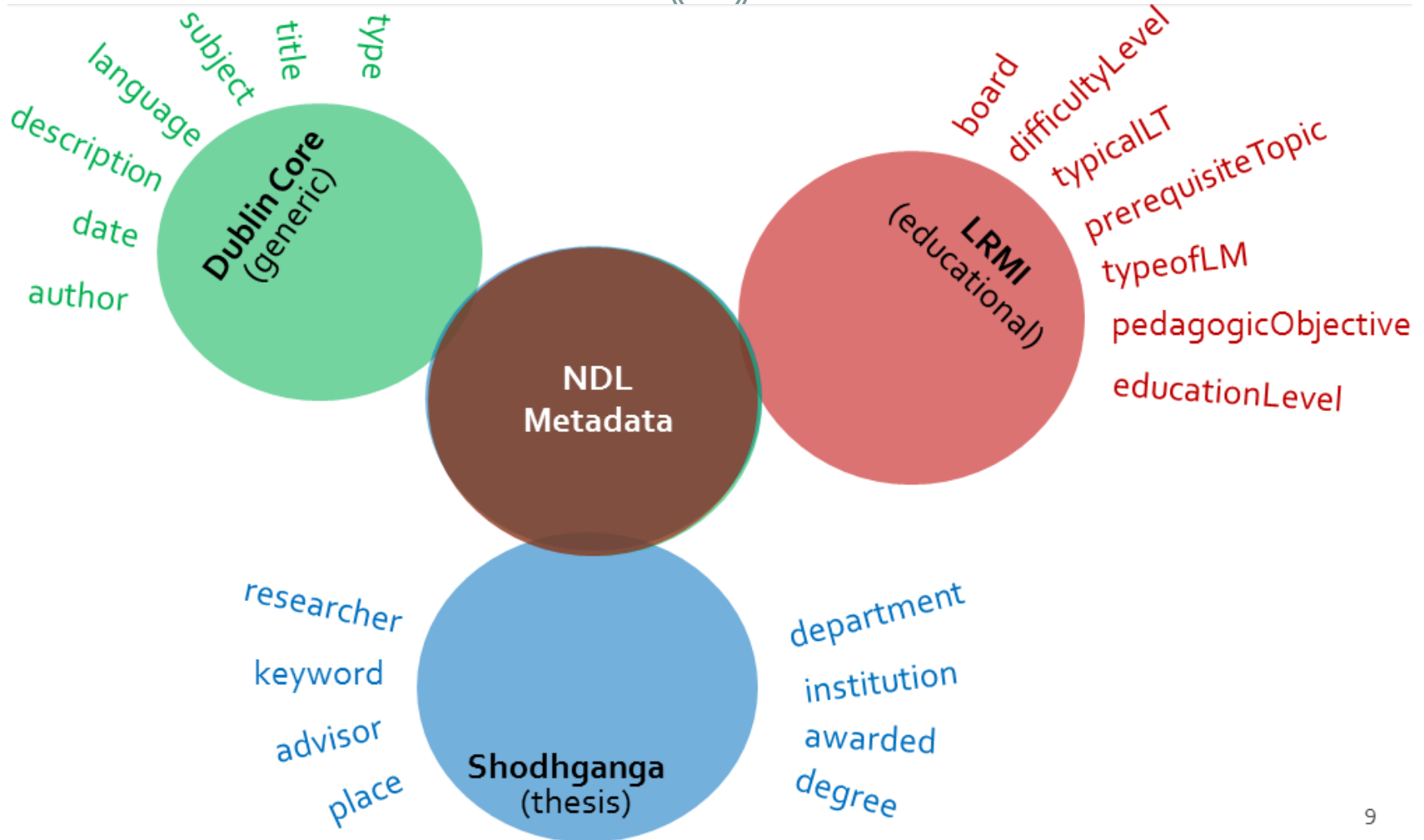
NDL Metadata Standard

45

- NDL Metadata Standard v 1.0 is an **Open Virtual Standard**
 - URL:
<http://www.ndlproject.iitkgp.ac.in/ndl/header.php?mname=Metadata%20Schema>
- Schema is categorized into three profiles:
 - **Generic Metadata:**
 - ✦ Describes general attributes of the contents
 - ✦ Adopted from **Dublin Core Metadata Standard**
 - **Educational Metadata:**
 - ✦ Describes the educational attributes of the resources and helps in enumerating properties of the contents relevant to teaching-learning process
 - ✦ Adopted from **Learning Resource Metadata Initiative (LRMI)**
 - **Thesis Metadata:**
 - ✦ Describes dissertation or thesis related metadata fields
 - ✦ Adopted from **Shodhganga Thesis Metadata Standard**
 - More profiles may be added in future
- Uses the **namespace of Dublin Core (dc.)**

Metadata Envelop

46



$$\frac{M\Sigma}{\delta(\alpha)}ta$$

Metadata Acquisition

Acquisition Scenarios

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Locate Content

- Harvest Institutional IDRs
- Crawl Websites
- In Bulk – from Publishers
- Donated by Source
- Source-supported API
- ...

Acquire Metadata

- Creation
 - Manual
 - Automated
- Translation
 - Format
 - Standard / Schema
- Curation
 - Manual
 - Assisted
- Ingestion

Challenges in Metadata Acquisition

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- **Different sources follow different norm in annotation**
 - Automation of curation
- **Errors in sourced data**
 - Error listing
 - Manual curation
- **Errors in manual annotation**
 - Review step before actual submission in database
 - Manual curation
- **Set up norm/guideline**
 - Controlled vocabulary

Translation Issues

50

- **Variation in Subject classification standards**
 - Dewey Decimal Classification (DDC)
 - Library of Congress Classification (LCC)
 - Library of Congress Subject Headings (LCSH)
- **Mapping terminology for different languages**
 - **Translate** when equivalent terminology is present
 - **Transliterate** otherwise



NDL Metadata Extraction Toolkit

51

- Automated metadata extraction workflow
- Syntactic metadata extractor
 - Author name, ISBN, Publisher, dates etc.
- Table of content extractor
- Wikification for keyword extraction
- Learning resource metadata
- Toolchain for metadata extraction

Once completed and tested, the toolkit will be released to public and open-sourced

Experience Tracking and UI

- Experience Tracking
 - To offer customized search results
- Multi-lingual Support
 - Reduce cognitive load for native use
- Personalization
 - Customized UI to suit user grade



Source: <http://www.brandquarterly.com/tracking-customer-experience-essential>



Experience Tracking Technology

Record:

Partha searched 'tiger'

Partha navigated to Tiger Wiki

Partha studied Wiki (3 min)

Partha downloaded tiger image (4 images)

Partha checked tiger map (2 min)

Partha enlarged map at Sunderbans (twice)

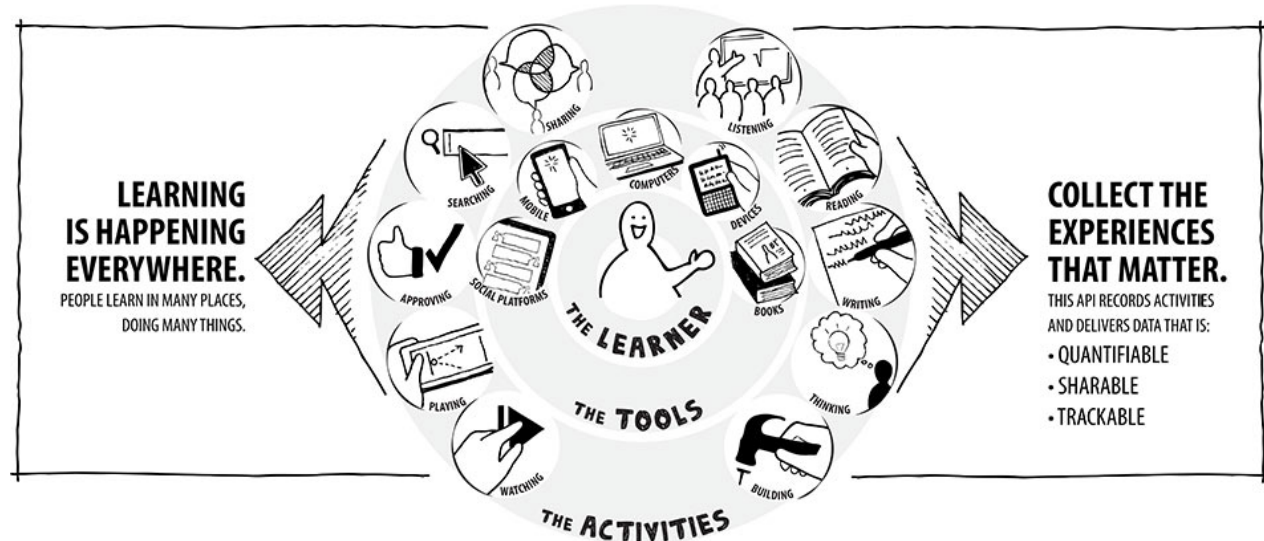
Partha searched 'national animal of India'

Infer:

Partha learnt – tiger is the national animal (of India)

... possibly

- **Experience API (xAPI) / Tin Can API**
 - Connects **learning content** and **learning systems** to record and track all types of learning experiences
- **Learning Record Store (LRS)**
 - Stores learning experiences



Source: <https://tincanapi.com/overview/>

Copyright & License

55

HOW DOES NDL COPE WITH COPYRIGHT AND LICENSING ISSUES



Copyright Act, 1957 (Amendment 2012)

Is metadata copyrighted?

Yes / No / May be

Copyright of Metadata is contested

Source:
<http://ij.libraryjournal.com/2013/02/opinion/peer-to-peer-review/metadata-and-copyright-peer-to-peer-review/>



- Copyright is a bundle of rights given by the law to
 - Creators of literary, dramatic, musical and artistic works and
 - Producers of cinematograph films and sound recordings
- Rights are:
 - reproduction of the work,
 - communication of the work to the public,
 - adaptation of the work and,
 - translation of the work
- Creator / Author is the first Owner
- Ownership (Title) can be transferred (assigned)

Copyright of Metadata

- **NDL principles as follows:**
 - Vast Majority of Metadata is Not Subject to Copyright Restrictions
 - NDL's Partners Share the NDL's Commitment
 - NDL Asserts No Rights Over its Database of Metadata and Dedicates its Contributions to the Public Domain
 - Free and Unencumbered Access to Metadata

Adapted from: <https://dp.la/info/wp-content/uploads/2013/04/DPLAMetadataPolicy.pdf>

License Mechanisms

- Content Access Views in NDL
 - Metadata View
 - ✦ This shows the metadata of the item – as maintained in NDL
 - Full Text View
 - ✦ This shows the view and provides access to full text – offered by the content source

A license encapsulates the rights & privileges that a copyright holder grants to someone else vis-a-vis something they have created

Content Access View: Metadata

59

Indian Institute of Techno x Zimbra: Inbox (912) x National Digital Library x NDL: Partha x Transport, magnetic, and x Parthapratim

ndl.iitkgp.ac.in/content.php?id=MTIzNDU2Ny83NjMzMDQ=

Apps dance.osu.edu/sites/d C++ Other bookmarks

National Digital Library Content **Metadata** Tag Comment Language Partha

Transport, magnetic, and Sn-119 Mossbauer studies on magnetically ordered valence fluctuating compound SmRuSn3

IIT Bombay

Author	Mazumdar, C. ♦ Hossain, Z. ♦ Nagarajan, R. ♦ Godart, C. ♦ Dhar, S. K. ♦ Gupta, L. C. ♦ Padalia, B. D. ♦ Vijayaraghavan, R.
Source	IIT Bombay
Content type	Text
Publisher	AMER INST PHYSICS
File Format	HTM / HTML
Language	English
Subject Other	cerus3
Abstract	SmRuSn3 is a unique compound among the known Sm-based valence fluctuation (VF) systems. Its crystallographic structure has two inequivalent Sm sites and Sm ions at only one of them are in VF state while the Sm ions in the other site orders magnetically. Our (119)Mossbauer studies show a quadrupolar splitting at the Sn site, consistent with the noncubic symmetry of the Sn site. A broadening of the Mossbauer spectrum is seen due to magnetic ordering of the material. The transferred hyperfine field at Sn site at 4.2 K is small. (C) 1996 American Institute of Physics.
Other Identifier	JOURNAL OF APPLIED PHYSICS,79(8)6349-6351 0021-8979 http://dx.doi.org/10.1063/1.361996 http://hdl.handle.net/100/1441

Source Page is rendered within NDL showing free Metadata

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IIT, Kharagpur

7:22 PM 5/1/2016



Content Access View: Full Text

60

Indian Institute of Techno x Zimbra: Inbox (912) x National Digital Library x NDL: Partha x Transport, magnetic, and x Parthapratim

ndl.iitkgp.ac.in/content.php?id=MTIzNDU2Ny83NjMzMzMDQ=

Apps dance.oredu/sites/d C+ G Other bookmarks

National Digital Library **Content** Metadata Tag Comment Language Partha

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Transport, magnetic, and Sn-119 Mossbauer studies on magnetically ordered valence fluctuating compound SmRuSn3

[Show full item record](#)

Title: Transport, magnetic, and Sn-119 Mossbauer studies on magnetically ordered valence fluctuating compound SmRuSn3

Author: MAZUMDAR, C; HOSSAIN, Z; NAGARAJAN, R; GODART, C; DHAR, SK; GUPTA, LC; PADALIA, BD; VIJAYARAGHAVAN, R

Abstract: SmRuSn3 is a unique compound among the known Sm-based valence fluctuation (VF) systems. Its crystallographic structure has two inequivalent Sm sites and Sm ions at only one of them are in VF state while the Sm ions in the other site orders magnetically. Our (119)Mossbauer studies show a quadrupolar splitting at the Sn site, consistent with the noncubic symmetry of the Sn site. A broadening of the Mossbauer spectrum is seen due to magnetic ordering of the material. The transferred hyperfine field at Sn site at 4.2 K is small. (C) 1996 American Institute of Physics.

URI: <http://dx.doi.org/10.1063/1.361996>
<http://dspace.library.iitb.ac.in/xmlui/handle/10054/14612>
<http://hdl.handle.net/100/1441>

Date: 1996

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Full-Text URL from Source






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7:21 PM 5/1/2016

Access Options

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	Open Full-text available to all (Example: NCERT)
	NDL Users Full-text available through NDL, <i>not directly</i> from Source (Example: South Asia Archive)
	Limited Access Part of text available but full-text requires authorization by Source authority (Example: IISER, Bhopal)
	Subscribed Full-text available from institutions that have subscribed to the Source (Example: Springer)
	Restricted Full-text access requires authorization by Source authority and separate login to the Source (Example: IIT Jodhpur)

National Licensing

62

- An initiative by eSS:
 - **e-ShodhSindhu**: Consortium for Higher Education Electronic Resources



- Licensing being negotiated with Publishers
 - **Institutional License**:
 - ✦ Accessible from within designated institutional network: **IP filtered**
 - **NDL Supported License**:
 - ✦ Accessible if requested from NDL: **Concurrent use-basis**

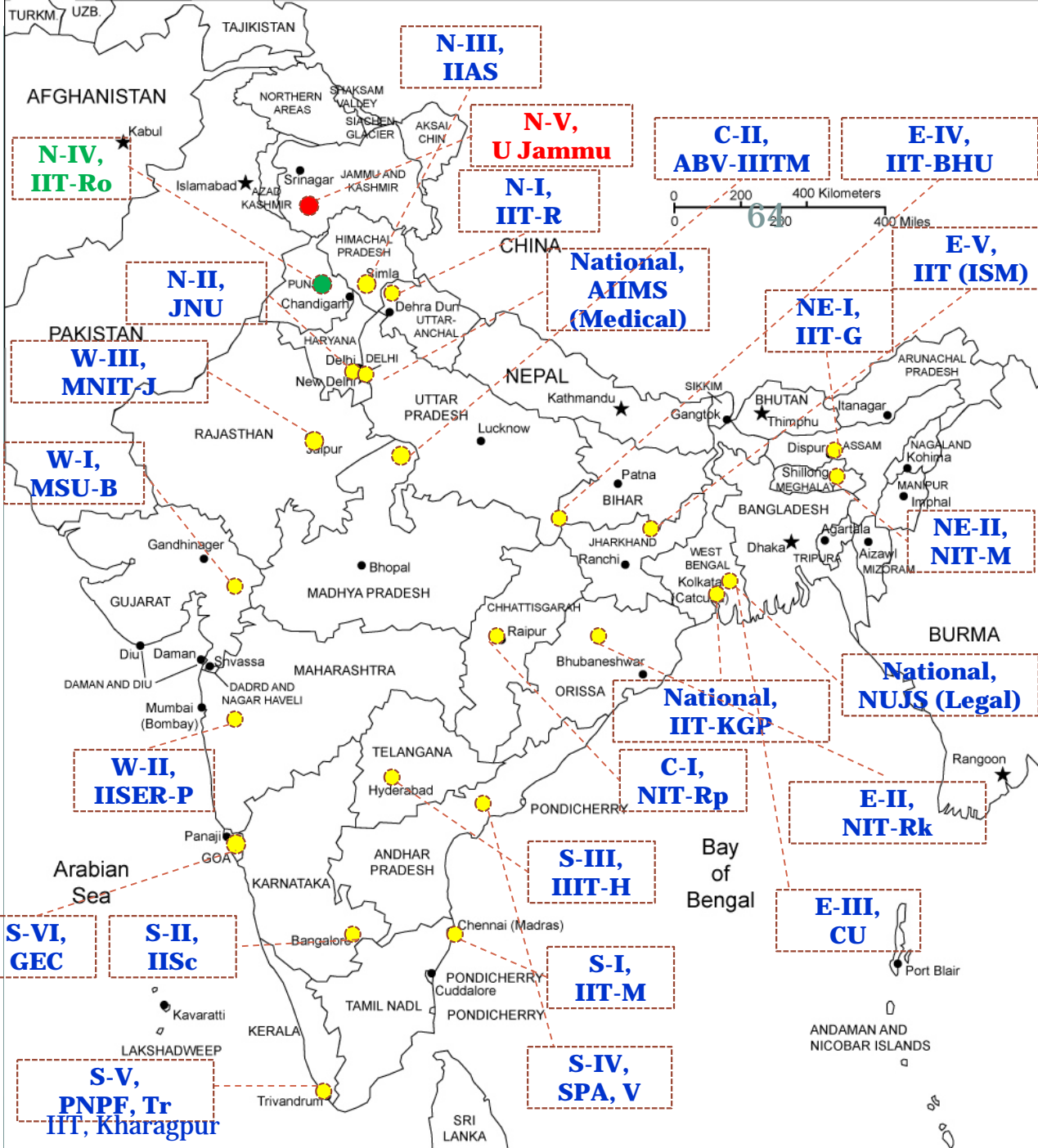


Project Status

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NDLI IDR Workshops



Completed:
Events: 25
Institutes: 730
Individuals: 1340

Scheduled:
Events: 2
Institutes: 60
Individuals: 140





NDLI Live:

<https://ndl.iitkgp.ac.in/>

NDLI on Facebook:

<https://web.facebook.com/NDLIndia/>

NDLI on YouTube:

<https://www.youtube.com/watch?v=LEwAyHGKeLw>

<https://www.youtube.com/watch?v=qIZB-G9ywF0>

<https://www.youtube.com/watch?v=UCoJwfPrQFs&t=115s>

NDLI Project:

<http://www.ndlproject.iitkgp.ac.in/ndl/>

Publications

66

1. Debarshi Kumar Sanyal, **Semantic Search in Digital Library**, Presented in International Seminar on Digital Humanities and Digital Societies in the Contemporary World, January 18-19, 2018
2. T. Y. S. S. Santosh, Debarshi Kumar Sanyal, and Plaban Kumar Bhowmick, **Surrogator: Enriching a Digital Library with Open Access Surrogate Resources**, Proceedings of ACM India Joint International on Data Sciences and Management of Data (CODS-COMAD), January 11-13, 2018.
3. Samrat Guha Roy, B. Sutradhar, Partha Pratim Das, **Large-scale Metadata Harvesting – Tools, Techniques and Challenges: A Case Study of National Digital Library (NDL)**, Presented in *International Conference on Digital Library, TERI New Delhi, Dec. 13th – 16th, 2016.*
4. Subhayan Roy and Plaban Bhowmick, **Augmenting Online Video Lectures with Topically Relevant Assessment Items**, *The 24th International Conference on Computers in Education, IIT Bombay, Nov 28th - Dec 2nd, 2016: Best Technical Design Paper*
5. Poonam Anthony and Plaban Bhowmick, **Architecture for User Experience Tracking and Analytics in National Digital Library (NDL)**, *The 8th IEEE International Conference on Technology for Education, IIT Bombay, Dec. 2nd -4th, 2016.*
6. The NDL Team, **National Digital Library: A Platform for Paradigm Shift in Education & Research in India**, *Science and Culture (published by: Indian Science News Association)*, vol. 82, No. 1-2, pp. 4-11, Jan.–Feb. 2016.
7. The NDL Team, **National Digital Library: Building a National Asset**, *YOJANA*, vol. 60, pp 19-23, Jan. 2016. *Also in Hindi, Bangla, Marathi, Gujarati, Punjabi, Urdu, Telugu, Kanada, Malayalam, and Tamil.*

Status ...

67

- **Items: 16M+**
- **Metadata: Version 1.0 of Standard Published**
- **Sources: 164 (IDRs: 100+)**
- **Registered Users: 3.0M+**
- **Daily Website Hits: ~12K**
- **Android App Download: 8L+**
- **Daily Android / iOS Hits: ~10K**
- **Registered User Institutions: ~9K**
- **Languages: 20+**
- **Learning Resource type: 15+**
- **Subject domain:**
 - Most of the major educational areas (except medical and law)
- **Educational Level: School Level (Class-I to XII) ,UG and PG**

Status ...

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- **Nature of Sources: 154 (IDRs: 100+)**
 - **Featured: 7**
 - ✦ Shodhganga, Shodhgangotri, Spoken Tutorial, SNLTR, OECD, Satyajit Ray Archives, JEE / GATE Questions & Solutions, South Asia Archives, WeL
 - **Crawled Repositories: 5**
 - ✦ NPTEL, Khan Academy, PhET, Project-OSCAR, LibriVox (audio books), PubMed
 - **Manually-annotated sources: 6**
 - ✦ NCERT, CBSE, Boards of WB, Tripura, AP, Karnataka, Kerala, Maharashtra
 - **MARC data from Publishers: 2**
 - ✦ CRC Press, Springer
 - **Through API: 1**
 - ✦ INFLIBNET N-LIST
- **Upcoming**
 - **Integration Underway**
 - ✦ Royal Society of Chemistry
 - ✦ American Society of Mechanical Engineers
 - **Exploration**
 - ✦ UNESCO, Gandhi Heritage Portal

Summary

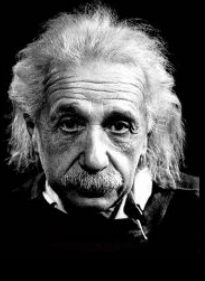
The only thing that you absolutely have to know (may use Google, though), is the URL of NDL:

ndl.iitkgp.ac.in

Rest you find in NDL

Why are you waiting?

'The only thing that you absolutely have to know, is the location of the library.'



Albert Einstein

- An umbrella over all IRs of India
- User-Centric Design
 - Multi-lingual Indic Interface
 - Multi-faceted Search
 - Multi-modal Filters
 - User Experience Tracking for Personalization
- Rich Set of Contents
 - National Licensing
 - Domain / Usage -focused Verticals
- Metadata Engineering
 - Metadata Standard
 - Open Source Toolkit
- NDLServices
 - Open APIs for 3rd party development
- Platform for Educational Ecosystem where all stakeholders participate, contribute and benefit
- Spearheads **NDL Movement**