Seminar on Digital Preservation, IGNCA

Laying the Foundations for Digital Preservation in Indian Museums

(Experience of JATAN: Virtual Museum Builder)

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Ecosystem for Digital Preservation in Museums

Closed specifications

No funding / less funding

Huge upfront investments

Short sighted approach

Unrealistic timeframe for delivery

No user involvement

Birth

State-of-the-art / basic technical infrastructure

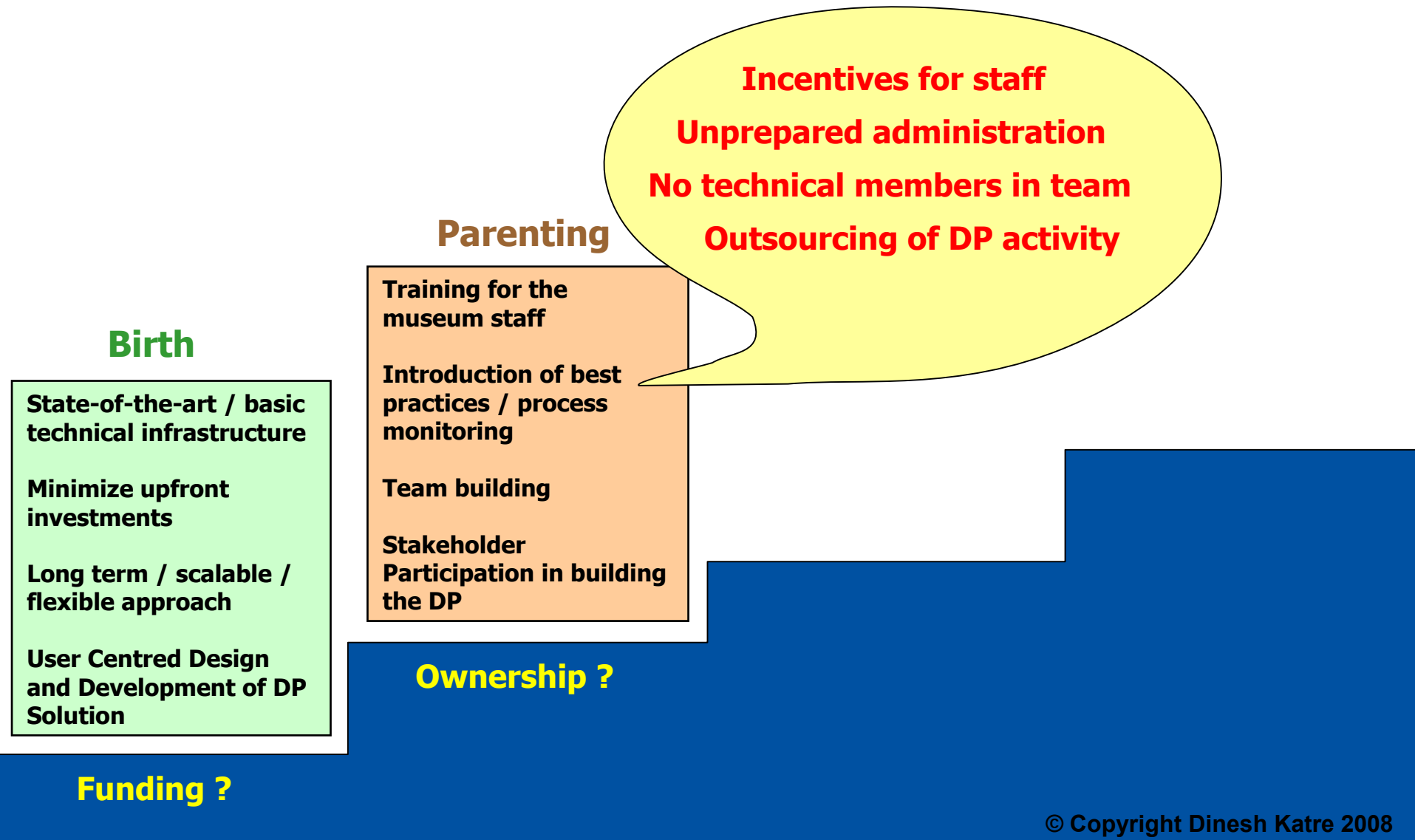
Minimize upfront investments

Long term / scalable / flexible approach

User Centred Design and Development of DP Solution

Funding ?

Ecosystem for Digital Preservation in Museums



Ecosystem for Digital Preservation in Museums

Funding runs out

Weak change management

Lack of exposure

Maintenance problems

Death trap for DP

Nurturing

System and process enhancements

Frequent guidance and technical support

Institutionalization of DP practices

Continued learning for museum staff

Rooting the DP culture

Continued support ?

Parenting

Training for the museum staff

Introduction of best practices / process monitoring

Team building

Stakeholder Participation in building the DP

Ownership ?

Birth

State-of-the-art / basic technical infrastructure

Minimize upfront investments

Long term / scalable / flexible approach

User Centred Design and Development of DP Solution

Funding ?

Ecosyste seums

Copyright Phobia

Taboo of wealth creation

Lack of enterprising approach

No involvement from all beneficiaries

Birth

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Sustenance

Value creation
Content enrichment
Value added services
User benefits

Economic sustenance

Technical sustenance
Migration
Technological upgradation

Business Model ?
Funding ?
Regenerate ?

Survival of Digital Preservation in Museums

Death Trap 4.

Death Trap 3.

Death Trap 2.

Death Trap 1.

Birth

State-of-the-art / basic technical infrastructure

Minimize upfront investments

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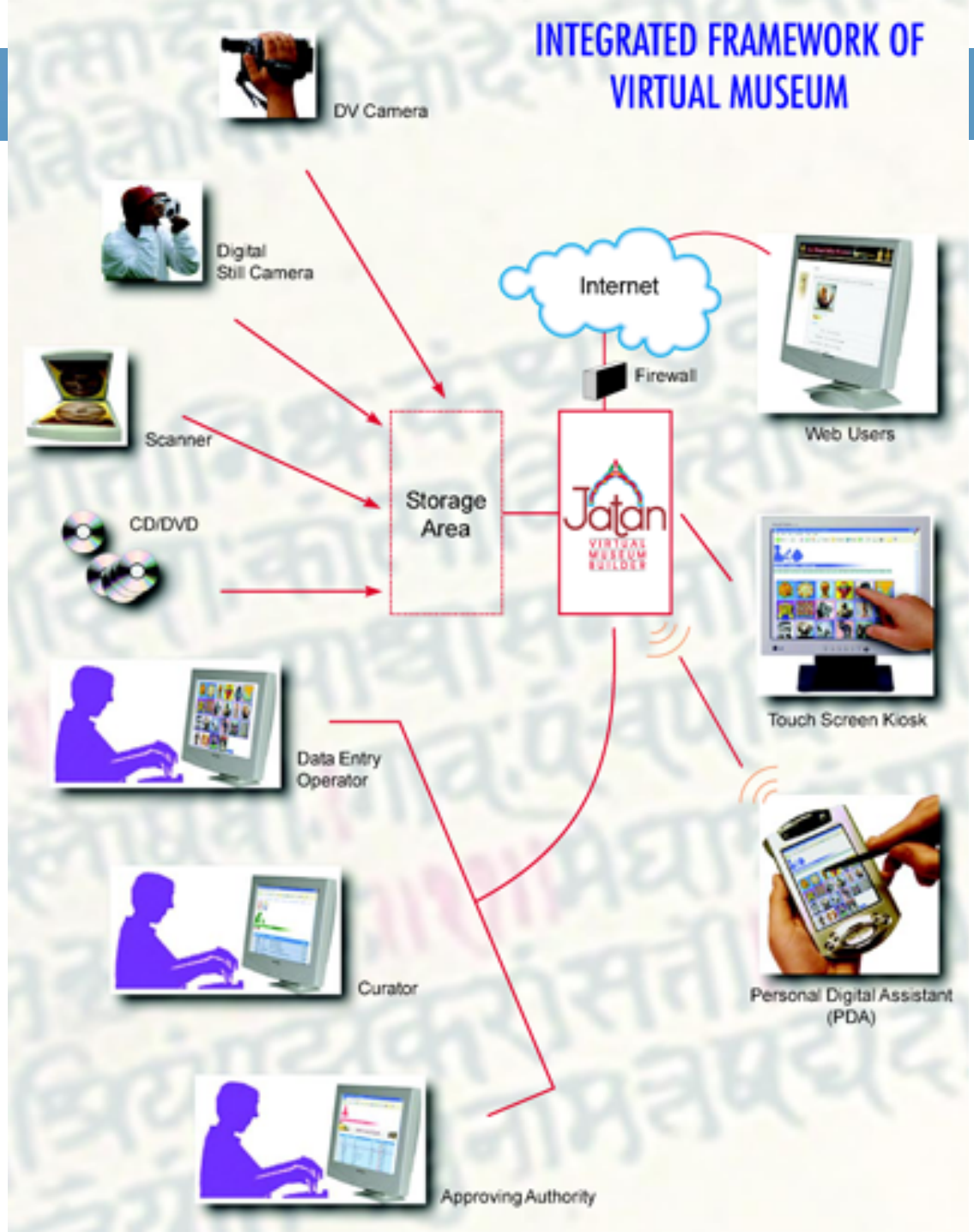
Our Prestigious JATAN Users and Collaborators

- Prince of Wales Museum, Mumbai

- Raja Dinkar Kelkar Museum, Pune

- Salar Jung Museum, Hyderabad


INTEGRATED FRAMEWORK OF VIRTUAL MUSEUM
DV Camera
Digital Still Camera
Scanner
CD/DVD
Internet
Firewall
Storage Area
Jatan
VIRTUAL MUSEUM BUILDER
Web Users
Touch Screen Kiosk
Data Entry Operator
Curator
Approving Authority
Personal Digital Assistant (PDA)

Salient Features

Content Delivery:

- **Internet**

  JATAN generates a dynamic website for Internet users.

- **Multimedia Kiosk**

  Contents of JATAN can be accessed through touch screen kiosk.

- **Hand-held Devices**

  The content of JATAN can be accessed through Pocket PC.

- **Compact Disc (CD)**

  A tool is being developed for packaging and distribution of contents from JATAN database.

▣ *JATAN : Virtual Museum Builder*

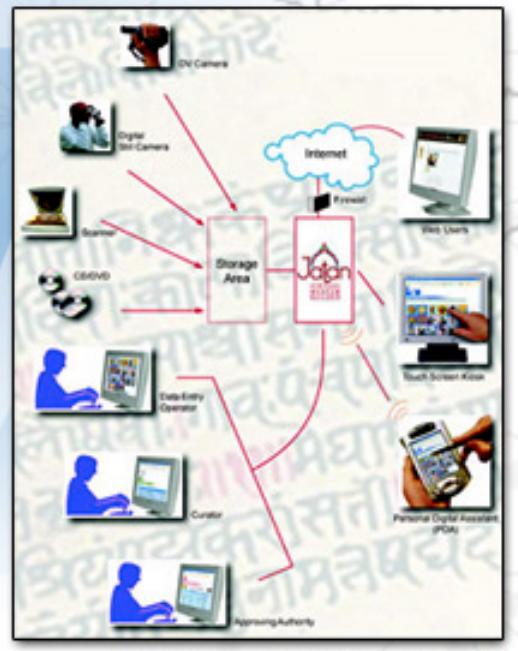
▣ *Conservation Report Tool*

▣ *PDA Access to Virtual Museum*

Jatan

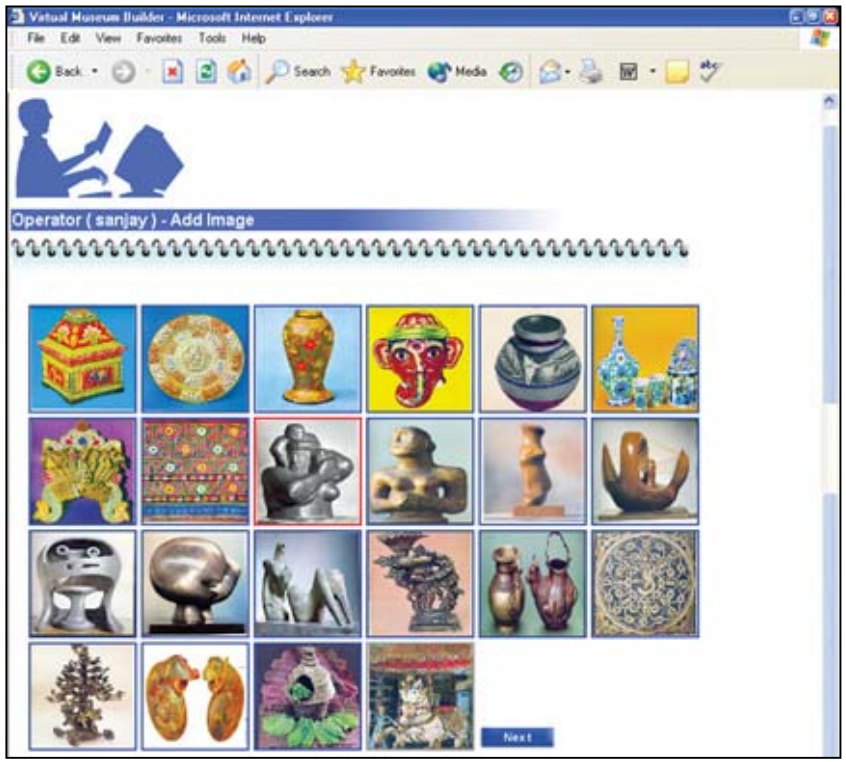
VIRTUAL MUSEUM TECHNOLOGIES

▣ *Compliance Enforcement Tool*



▣ *Integrated Framework*

Salient Features

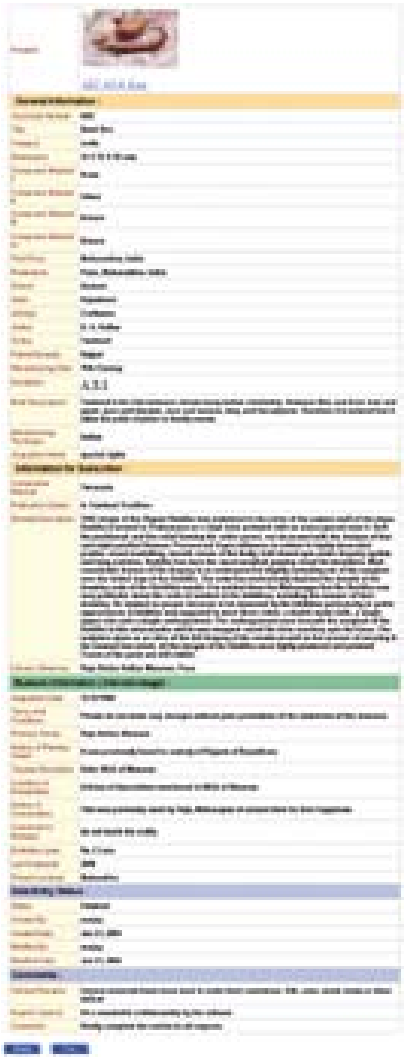


Thumbnail Preview

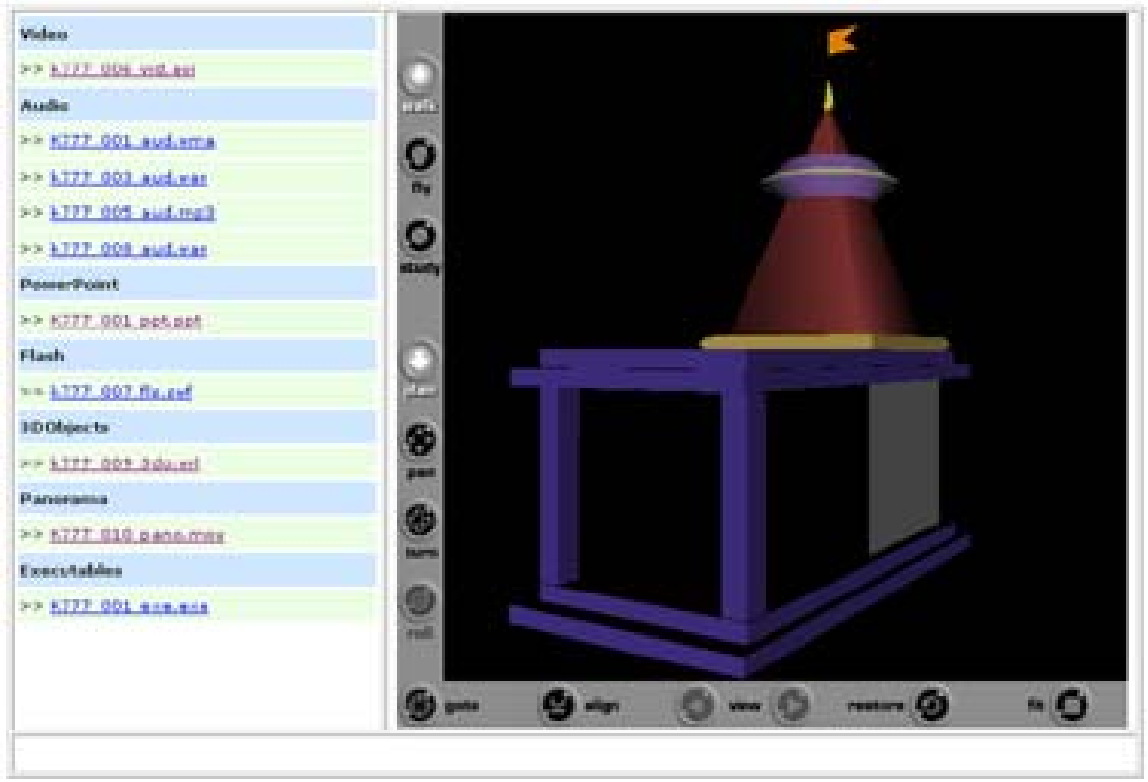
Content Integration:

- Integration of Artifacts and Manuscripts
- A comprehensive Record Entry form
- Integration of Multimedia Content like audio, video, 3D objects, slides and presentations
- Support for Devanagari Text
- Image Catalog with Thumbnail Preview
- Record Preview and Printing
- Authentication for Operator, Curator, Approving Authority, Administrator

Metadata Description and Support for Multimedia Documentation

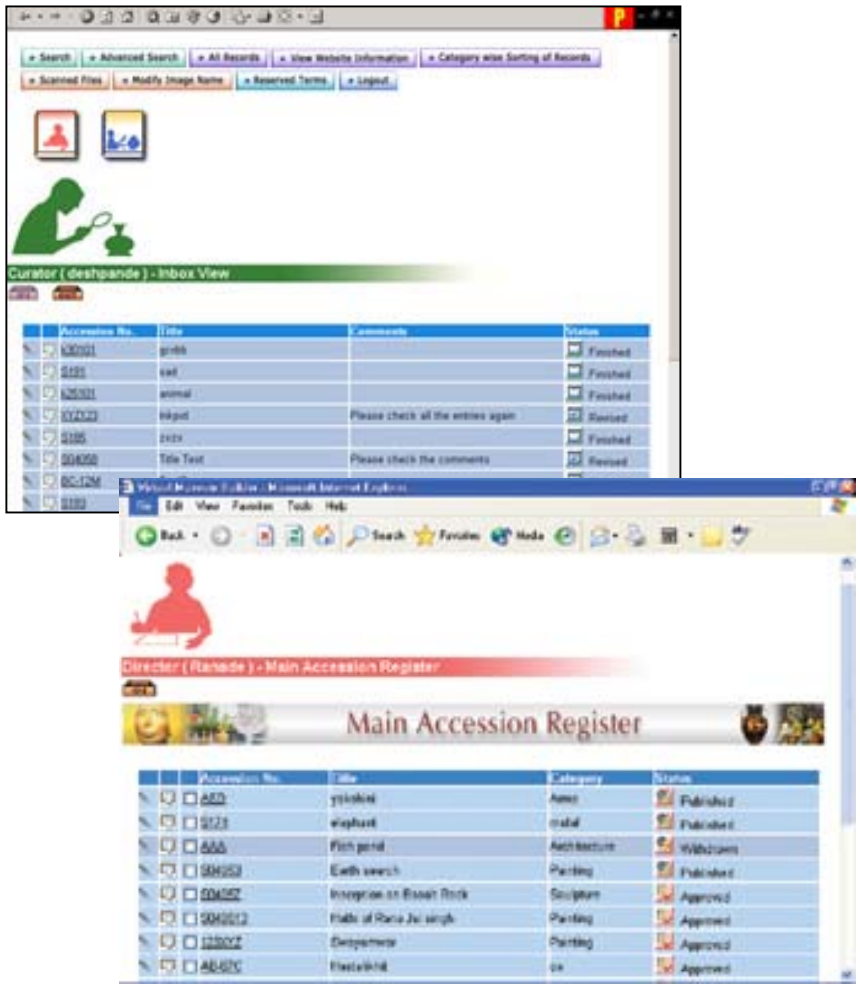


Thumbnail Preview



Multimedia Content

Salient Features



Content Management

Content Management:

- Main Accession Register (MAR)
- Decisions like *deletion, approval, publishing, withdrawal* of records.
- Parameter based Searching of records
- Subscription Levels and Authentication
- User Accounts and Rights Management
- Statistics Indicators
- Category and Status based Sorting

Salient Features

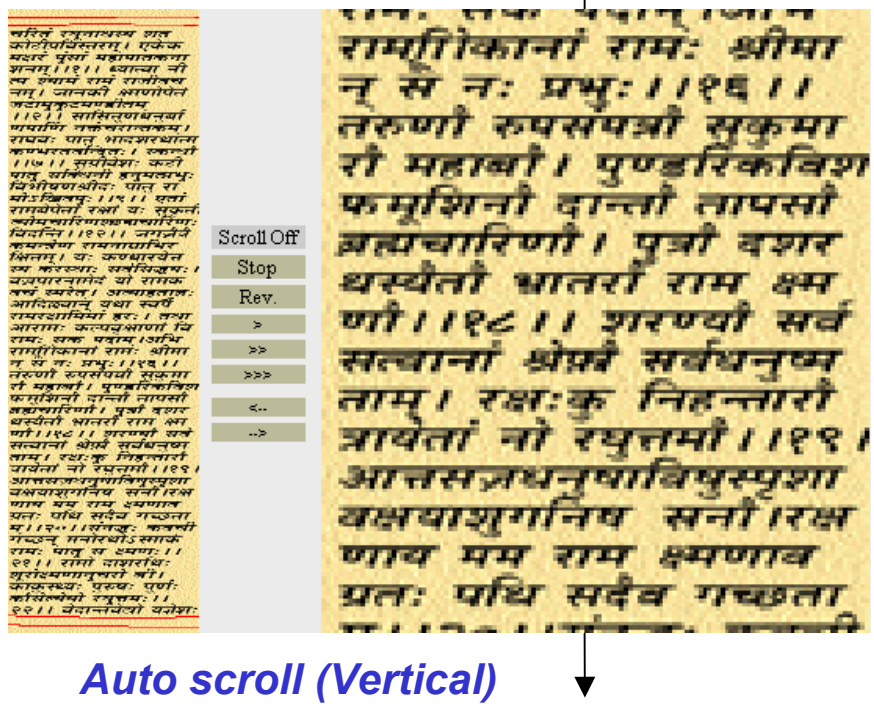
Dynamic Website

Content Presentation:

- **Dynamic Website**
- **Customizable Homepage**
- **Basic and Advanced Search**
- **Search Results with Thumbnail Preview**
- **Access to Special Information and Downloads based on User Privileges**
- **Auto Scrolling for images with longer Width or Height**

Viewing Large Documents

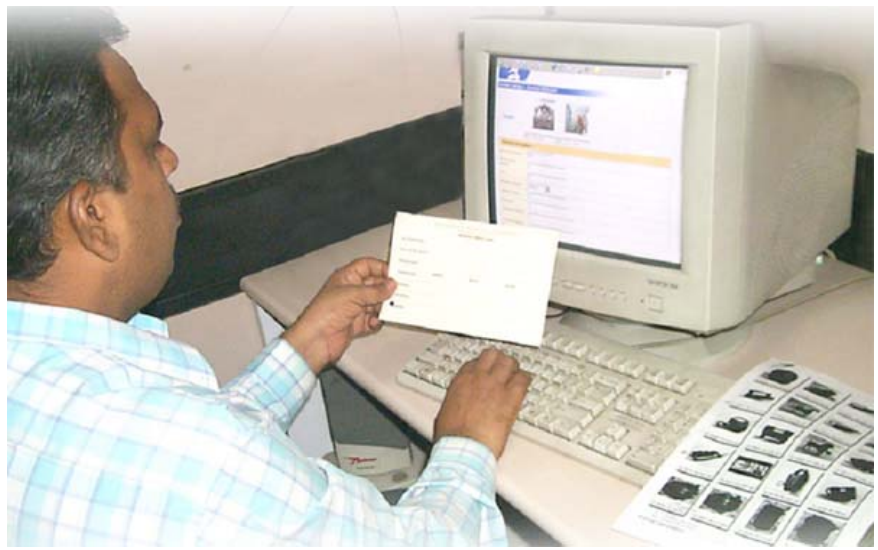
Auto scroll (Horizontal)



Auto scroll (Vertical)

JATAN: Conservation Report Tool (Pocket PC based)

Training the museum staff



Stakeholder participation in design / development / definition of procedures and best practices

- Involvement of curators, preservation officers, archivists, librarians

Archaeology (JATAN: Virtual Museum Builder)

Projects executed during 2005-2008

Objective of the Project:

- Digital Preservation, Cataloging and Management of museum antiquities

Details:

- **JATAN: Virtual Museum Builder** software is basically a digital collection management system specially designed for museums.

Above software solution is deployed and being used by following museums.

- **Salar Jung Museum, Hyderabad** (Old data of 50,000 antiquities is migrated to JATAN in 2008)
- **Prince of Wales of Museum, Mumbai** (JATAN user since 2005)
- **Raja Dinkar Kelkar Museum, Pune** (JATAN user since 2005)

Digital Preservation Case Study –02

Archaeology (JATAN: Virtual Museum Builder)

Elements of Digital Preservation and Specs.	Today's Status
1. Digitization – High Resolution (14 mega pixel photos) 24 BIT, RGB True Color, Uncompressed TIFF, JPG File format	• Content is intact and source files are usable
2. Collection Management Software – JATAN: Virtual Museum Builder	• Open source web technologies JAVA, J2EE Servlets, JSP, HTML • Salar Jung Museum started digital cataloging in 2002 using a software developed in Visual Basic. It is not running properly on recent versions of Windows. **They have now migrated to JATAN system.**
3. Web Application Server – Macromedia JRUN	• Macromedia bought by Adobe in 2005 • JRUN support continued by Macromedia but no plans to develop this product further
4. Migration Path for Web App Server -	• JATAN System is made suitable to run using TOMCAT Web Application Server (open source)
5. Multimedia Documentation– **(Not used by any museum so far)**	• Multimedia file formats are supported- PPT, WAV, MP3, MPEG, AVI, PDF, SWF, EXE, QTVR, VRML, CO

Archaeology (JATAN: Virtual Museum Builder)

Elements of Digital Preservation and Specs.	Today's Status
6. Display Resolution of dynamically generated website of JATAN -	• 1024 by 768 pixels • Presently acceptable but may not be suitable in future (Liquid layouts are recommended)
7. Source Code -	• Open source code
8. Maintenance of Source Code –	• Regular documentation and backup
9. Parameters for Metadata Description -	• Collectively evolved by involving domain specialists from various museums
10. Metadata Standard –	• Dublincore Metadata standard • Open source XML format
11. Database –	• MS-SQL • Can be migrated to My-SQL, Postgre SQL
12. Content Integration –	• Multimedia Content is not integrated in the database • It is maintained outside the database • Salar Jung Museum had integrated the images in the old Oracle 8 version. This data could not be re-utilized when they migrated to JATAN system.

Digital Preservation Case Study -02

Archaeology (JATAN: Virtual Museum Builder)

Elements of Digital Preservation and Specs.	Today's Status
13. Delivery of Application –	• Web browser based (Works well with Internet Explorer and FireFox)
14. Operating System -	• Microsoft Windows • Cross-platform compatibility is feasible
15. Storage –	**Raja Kelkar Museum** • 15,000 antiquities digitized so far • Approx. 1 Terabyte in size • Stored on local hard disk
16. Storage / Backup CDs and DVDs	**At Raja Kelkar Museum** • CDs • DVDs
17. Accessibility –	• Web, Kiosk, Handheld devices supported
18. Sustainability –	• Payment based subscriptions / rights management is supported in the software
19. Value added applications -	• Thematic catalogues, virtual galleries / exhibitions are possible

Archaeology (JATAN: Virtual Museum Builder)

Conclusion

Digital preservation is following most of the international standards. Migration from proprietary database and web application server to open-source database and web server is essential. In case of JATAN: Virtual Museum Builder such migrations are feasible.

In year 2005, Prince of Wales Museum and Raja Kelkar Museum were advised to not make upfront investment in Storage Area Network (SAN). They were asked to proceed with digital documentation by storing the data on local hard-disk, as the data size was not much initially. In 2008, 1 terabyte hard-disk has become cheaply available, which is adequate to handle the current size of data available with them.

This approach has saved these museums from upfront expenditure on SAN and left the option open to go for state-of-the-art storage solution at an appropriate time.

Archaeology (JATAN: Virtual Museum Builder)

Lessons for Long Term Digital Preservation

- Use open source programs for developing the software for collection management
- Follow the international standard for metadata description
- Use open source web application server and database
- Avoid integrating the content as part of database
- Use multimedia formats for all round documentation and preservation
- Don’t make upfront investments in storage devices unless the data size demands it
- Sustainability and value added services must be addressed in the overall solution

Scope of Research & Development

National Digital Preservation Programme

March 24-25, 2009

Indo-US Workshop on International Trends in Digital Preservation at C-DAC, Pune.

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Full paper: Feb. 28, 2009

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