

Current technologies impact on functions and activities of the library

**XI International Conference on University Libraries** 

# **Hamilton Library - University of Hawaii at Manoa**



**Library Server Room** 



# Moore's Law & the future

Sun Microsystems cofounder and former Cisco Vice President Andy Bechtholsheim predicted that performance of networking chips — which determine how quickly you can surf the Internet - will improve 1,000 times in the next 20 years.

Moore's Law, the prediction in 1965 by Intel's Gordon Moore that the number of transistors on a chip will double every two years, is still holding up.

-http://venturebeat.com/2012/10/11/bechtolsheims-10-predictions-about-networking-and-moores-law/

The future is already here — it's just not very evenly distributed.

-William Gibson [Gibson, William, 1948-]

Libraries benefit and are challenged by the former while often experiencing the latter

# Moore's law = cheap storage, increased processing power, fast broadband

Open source / Open access

New automation products

information discovery and delivery systems

library services platforms

integration of ebooks & mobile devices

Software As A Service (SaaS) / Cloud computing

Mass digitization / Digital libraries

Web archiving

User generated content / Crowd sourcing

Digital humanities / eScience

very large objects (video, data sets) / big data

data mining and reuse

Content/Data curation / management

academic criteria to evaluate / tenure

roles for library - guides

preservation

verification/authenticity: Trusted Repositories

**XI International Conference on University Libraries** 

## Moore's LAW = CHEAP STORAGE, INCREASED PROCESSING POWER, FAST BROADBAND

# Open source / Open access

New automation products

# information discovery & delivery systems

library services platforms integration of ebooks & mobile devices Software As AService (SaaS) / Cloud computing

# Mass digitization / Digital libraries Web archiving

User generated content / Crowd sourcing
Digital humanities / eScience
very large objects (video, data sets) / big data
data mining & reuse

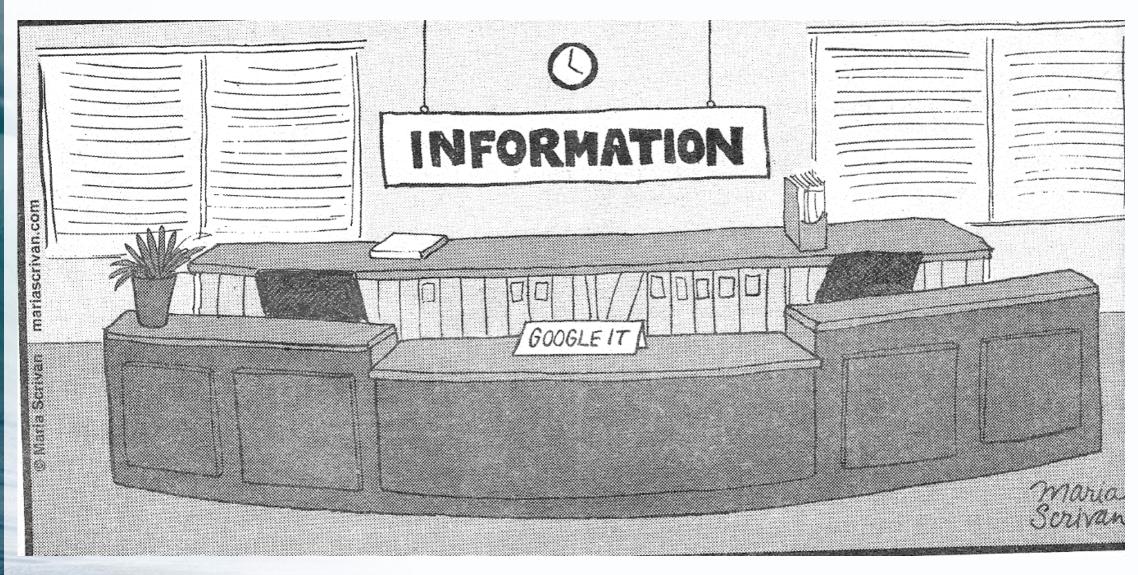
# **Content/Data curation & management**

academic criteria to evaluate / tenure

# roles for library - guides

preservation verification/authenticity: Trusted Repositories

# **Just Google it?**



# **Interesting Times for Library Technology**

Marshall Breeding notes\* that this is an incredibly interesting period for library technologies.

He says "Rather than just refining and rebuilding products on models of functionality ... in place since the early decades of library automation ... efforts are under way to break free from ... historical approaches and create new products ... that embrace current technology architectures."

He believes that the new approaches and products are designed to better align with the "multifaceted realities" of library collections and services.

# **Discovery & Delivery Systems**

Breeding says\* that in the past few years **Discovery Services** have brought in a large proportion of library automation as sales of traditional Library Management Systems have been in decline. He declares four major **web-scale discovery products**, WorldCat Local, EBSCO Discovery Service, Serials Solutions Summon, and Primo Central from Ex Libris to have achieved "high levels of maturity".

In early 2004 the UHM Library implemented use of an Open URL link resolver system from Serials Solutions. In early presentations to staff when the OpenURL Task Force was evaluating systems and vendors - 2 important selling points were emphasized:

- OpenURL Increases the Use of Expensive eJournals
- OpenURL Provides a Major Increase in Digital Access for Faculty, Staff and Students

This was our first step into linking bibliographic and index searches to full text retrieval. Over the years it became an important part of basic service our patrons expected. And it did indeed increase access to and usage of ejournals.

# **Discovery & Delivery at UHM Library**

In his 2013 Tech Review, Breeding noted "Especially among academic libraries, the need for discovery tools broader than an ILS's online catalog is well accepted".

At UHM Library an "Action Team" was formed in 2008 with the mission to "Review, recommend, and outline an implementation plan for one or more software/electronic products or services which enhance seamless discovery, access, and/or delivery of library resources and services." The team recommended acquiring and implementing the open-source federated search system "LibraryFind" (http://libraryfind.org/). However there was no further action on the recommendation. In retrospect this may have been a good thing, since it doesn't look like any LibraryFind code updates have taken place since 2010.

In late 2011 a contract between the University of Hawaii at Manoa Library and Ex Libris was signed:

- To continue with the Ex Libris Voyager library management system
- To replace the Voyager server hardware and not migrate to "cloud" services
- To sign a 3-year contract for the Primo discovery and delivery tool

A phased installation of SFX (replacing Serials Solution) and Primo took place June through December 2012; Primo "One Search" went live at the start of 2013.

# Significance of digital libraries

The construction of digital libraries have certainly framed technological challenges, particularly with regard to various aspects of scale, [...] and indeed have given rise to substantial progress in these and other technical fields. But I believe that the greatest significance of digital libraries has been at a more profound intellectual level, inviting us to envision new kinds of environments for knowledge discovery, formulation, and dissemination; approaches to defining, managing and interacting with the cultural and intellectual record of our societies.

- Clifford Lynch
The Futures of Digital Libraries: The Evolution of an Idea
Research and Advanced Technology for Digital Libraries
Lecture Notes in Computer Science Volume 6966, 2011, p 2

# **UHM Libraries Digital Repository Proposal**

A Draft Plan for moving the Library into the Digital Arena.

August 9, 2004

# Bob Schwarzwalder

# **Background**

- Creating a networkable information repository is a key element of the NSF Cyberinfrastructure http://wvww.communitytechnology.org/nsf\_ci\_report/
- **D-Space Initiatives have been started at a number of** large US universities to create academic information repositories
- **Digital Repositories support UHM initiatives on** Distance Learning, Student Life, and making UHM an **Hawaiian Place of Learning**

### Direction

- Library's role has shifted to providing digital information services
- Scholarly Communication crisis has highlighted the need for local archive of intellectual capital
- Call for UHM to provide digital access to Hawaiian historical and cultural materials
- Need to support grant activities, university archives, and departmental information initiatives
- Creation of intellectual platform for training students to research; support of Hawaiian Place of Learning

We stand at a crossroads for the Library. We have within our reach, the ability to make the Library a steward of university information, a virtual classroom for students, a guardian of Hawaiian historical and cultural materials, and a vital part of the future for the university and the state. Beyond the financial cost of making this transition, there is the need to see our mission and our jobs in a new light. However, if successful, we can make the Library an even more vital part of the University community.

# Two months later – flood destroyed the library IT infrastructure completely



First (original) library web & digital collection server



Everything from the central computer room looked like this or worse

# **Open Source**

Based on a philosophy of non-proprietary community-supported development

When rebuilding our web server – we switched from proprietary Sun Solaris OS and Apache to Linux/Apache

- Dspace was identified as our choice for Institutional Repository software
- Linux / Apache / MySQL /PHP was our choice for delivering digital image content
- Plone CMS on top of Zope application server was selected for the library intranet

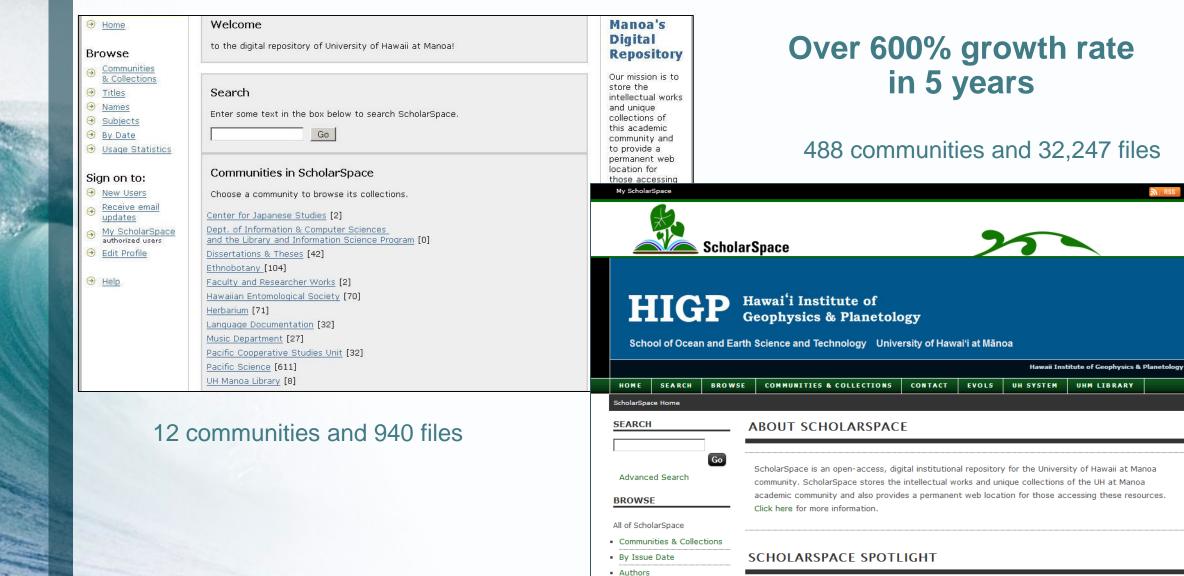
# **Dspace Institutional Repositories**University of Hawaii at Manoa Library

### Specific goals included

- Long-term storage of digital materials
- · Persistent network identifiers for stable access
- Consistency checks to maintain integrity of the digital files

### We wanted to

- recapture our institution's intellectual content from commercial publishers provide local control of content and open access
- give our users faster and more up-to-date online access and showcase library unique collections
- demonstrate the importance of the Library for wide-spread dissemination of University research



Titles

Subjects

MY ACCOUNT

Robert V. Cooney's area of interest is on the role of diet and lipid-soluble antioxidants in the prevention

of chronic diseases of aging and survival. His current research is focused on the epidemiology and molecular mechanisms of action for lipid micronutrients such as Vitamin D, tocopherols, coenzyme Q10,

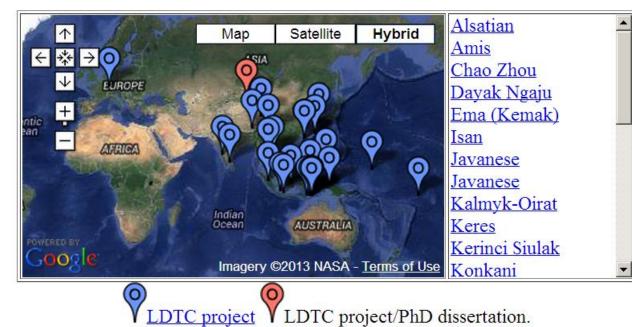
and carotenoids. His past research has been instrumental in identifying the molecular mechanism

# **Global Scope**

## **Asia & Pacific**

# Language Documentation Map Satellite Hybrid Alsatian



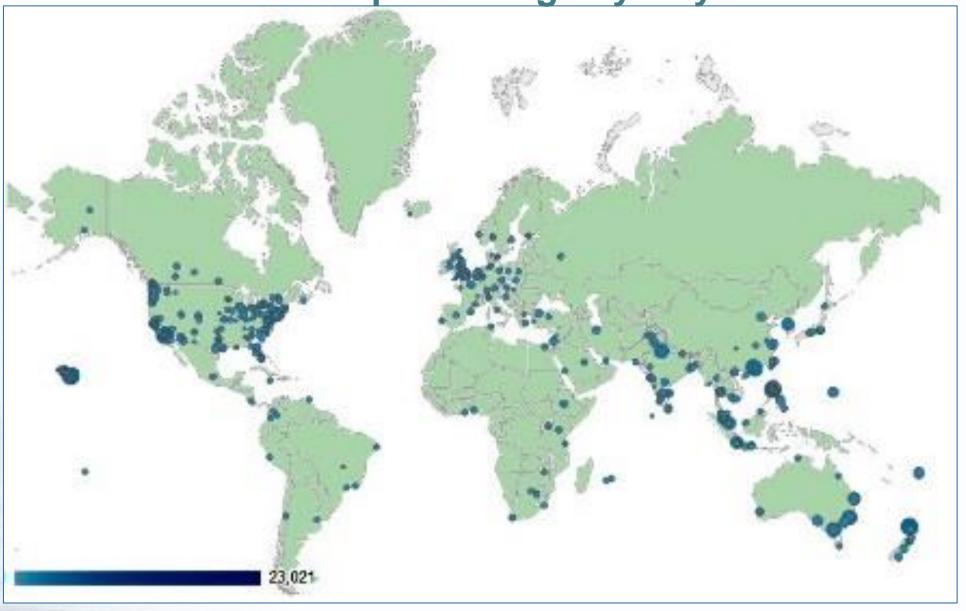


International Conference on Language Documentation and Conservation (ICLDC) [367]

Language Documentation & Conservation [234]

Language Documentation Training Center [34]

Scholarspace Usage by City





# **Open Access at UH**

The Library hosted the first **Open Access Week** events in October 2009 including sponsoring campus-wide student activities, a panel presentation on scholarly communication issues and a presentation on copyright

In 2010 the Library organized a second Open Access Week campus-wide celebration; coordinated the successful passing of an "Open Access Resolution" by the Manoa Faculty Senate and helped to organize a "Scholarly Communication 101" Workshop sponsored by the Scholarly Publishing and Academic Resources Coalition (SPARC)

In 2011 the library made numerous presentations and organized a third Open Access Week campus-wide celebration; coordinated the approval process for the **UHM Open Access Policy** approved by the UH Chancellor in March 2012; participated in the Coalition of Open Access Policy Institutions (COAPI)

# Value of digital collections

"digital collections represent significant potential economic and social value, provided they are made easily accessible"

The Dutch Foundation for Economic Research carried out an analysis of the economic and social costs and benefits of making cultural heritage available digitally for a number of mass digitization projects. [...] These analyses show that, on balance, *the total benefits of digitization and accessibility outweigh the costs*. The heritage sector, creative industries, the education sector and consumers will all experience *immediate benefits from the widespread availability of cultural heritage objects*. Indirect social benefits include an increase in digital literacy and a strengthening of the knowledge-based economy.

-Business Model INNOVATION CULTURAL HERITAGE
Amsterdam & The Hague, The DEN Foundation
KNOWLEDGELAND, Ministry of Education, Culture and Science
2010

# Computer & scanning equipment used for the library's first digitization project

early 1990's: Windows 3.1 PC and Agfa Duoscan flatbed scanner



# Most recently acquired scanner

Quartz Digibook with A1 size capacity





# Ryukyu-Okinawa digital archive



Material from UHM Library
Asia Collection will be added
to this digital archive



### Digital & Digitized Collections



### Asia

- Asia At Work Images from Books
- Gandhi Photos, Press Info. Bureau, Gov't of India
- Great Kanto Earthquake, Japan, September 1923
- Images of Okinawa after World War II
- India Post-Independence Photographs
- Japanese Commercial Graphic Design
- Lantern Slides of the Nippon Rikkokai
- Lian Huan Hua Chinese Picture Story Books
- Magic Lantern Slides
- Oliver Statler Collection
- Opium in Asia Images from Books
- Shackford Collection of photographs of China
- South Asia: 19th Century and Earlier Imprints
- South East Asia Posters
- Treasures of Okinawa: Frank Hawley Collection
- XXth Century, Shanghai, 1941-1945

### Multi-Subject

- eVols Digitized Rare & Research Material
- Hawaiian & Pacific Photographic Negatives
- Maps recovered flooddamaged items

### Hawaii

- Aloha Hawaii Scrapbook
- Annexation Of Hawai'i Documents
- Chaplain Hiro Higuchi Correspondence
- Dakin Fire Insurance Maps: Honolulu (1891, 1899, 1906)
- Filipino Workers in Hawaii, 1926
- Georeferenced Hawaii Historical Maps 1885-1904
- Hawaii Topographic Quadrangles
- Hawaii Karate Museum Collection
- Hawai'i War Records (HWRD) - Honolulu Newspaper & U.S. Army Signal Corps Photographs
- Hawaiian Language Newspapers
- Hawaiian Music Collection
- Hawaiian Photo Albums
- Japanese American
   Veterans: 442nd RCT
   National Archives
   Documents
- Japanese Language School in Hawaii Textbook Collection
- Local Sightings/Citings
- Russian Collection -Passport Application Album

### Pacific

- Creating Siapo: American Samoa 1967
- Douglas Oliver Bougainville Research Collection
- George Grace Linguistic Research and Slides of Melanesia
- Jack Tobin Marshall Islands Anthropology Collection
- Margo Duggan Collection: Slides of Micronesia and Hawai'i, 1949-1954
- Nuclear Diaspora: Bikini and Enewetak
- Rapanui: the Edmunds/Bryan Photographs, 1904-1929
- Steve Thomas Traditional Micronesian Navigation Collection
- Trust Territory Photo Archives
- Trust Territory Survey Maps
- War in the Pacific

### Rare

- Donald Angus Botanical Prints
- Jean Charlot Murals and Sculpture
- José Guadalupe Posada
- Treasures from the Library

### **Online Exhibits**

# Digital Image Collections at the University of Hawaii Library

http://library.manoa.hawaii.edu/research/digicoll.html

Almost 40 Streetprint digital image collections; 18 web/HTML-based collections

# **Streetprint**

- Created in 2003
- Grew out of Canada Research Chair Humanities Computing Studio project to create a "computerized and integrated multi-media humanities research centre to unite humanities research and digital technology" in 2001
- Licensed under the Gnu Public License (GPL)
- First collection was digitized British street literature Streetprint: Revolution and Romanticism

## **Good points:**

- CSS & templates provided
- PHP (easy to change functionality)
- Comment feature
- Easy to use

### **Drawbacks:**

- Code not bug free or finished
- Only Dublin Core metadata
- No cross-collection search
- Small user base, inactive lists
- Did not know how scalable?
- No batch load

# Streetprint at UH Manoa Library

# **Save Our Surf**

http://digicoll.manoa.hawaii.edu/sos/

# Save Our Surf

home

browse

search

news

about

### **WELCOME TO SAVE OUR SURF**

The Save Our Surf (SOS) digital collection consists of unpublished material from the SOS organization - an environmental, social, political, and cultural movement that contributed to the contemporary Hawaiian Sovereignty movement

#### LATEST NEWS

PROPOSAL FUNDED -- 2005-11-18



"Save Our Surf, a Grassroots Organization" received \$3,075.00 from the UH Manoa Diversity and Equity Initiative to fund scanning of a unique collection of primary resource materials produced by the Save Our Surf group. More

### **FEATURED TEXT:**

\_, <u>A Brief on John Kelly and Save Our Surf</u>



Scanned,
OCR'd &
completed over
two semesters
by one student
assistant

Powered by the <u>Streetprint Engine v3.0 (Final)</u>, Streetprint Engine @2005 by <u>Streetprint.orq</u>.

This site implements DCMI Metadata through meta tags and an OAI-compliant repository located here.

# Traditional Micronesian Navigation Collection



home

orowse

search

about

# Welcome to the Steve Thomas TRADITIONAL MICRONESIAN NAVIGATION COLLECTION.

The Steve Thomas Traditional Micronesian Navigation Collection is comprised of unpublished papers, audiovisual and photographic materials (including oral history transcripts and 35mm slides), publications and miscellaneous items related primarily to traditional navigation on the Western Carolinian island of Satawal, which is located within Yap State, Federated States of Micronesia.

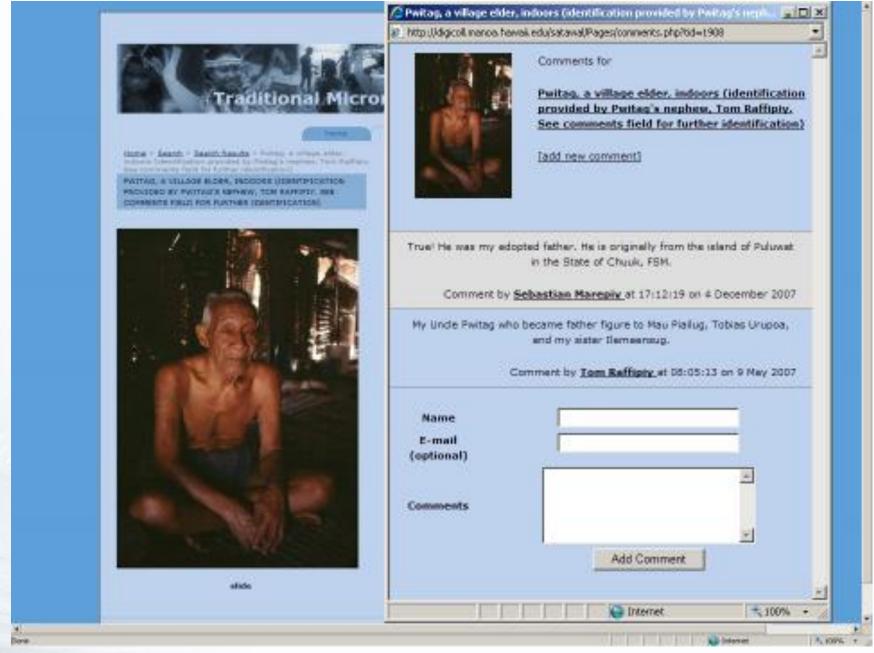
### July 13, 2010: Master Navigator Mau Piailug Dies.

Several news outlet are reporting today that Mau Piailug passed away over the weekend on his home island of Satawal: Honolulu Star-Advertiser; KITV Honolulu web story

July 20, 2010: News outlets worldwide continue to publish memorials to Mau Piailug: Wall Street
Journal; The Economist; Washington Post; Saipan
Tribune; East West Center News; Chuuk Reform
Movement.



Online comments

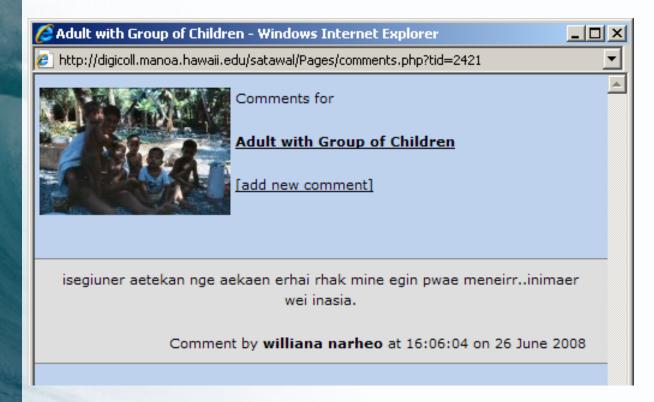


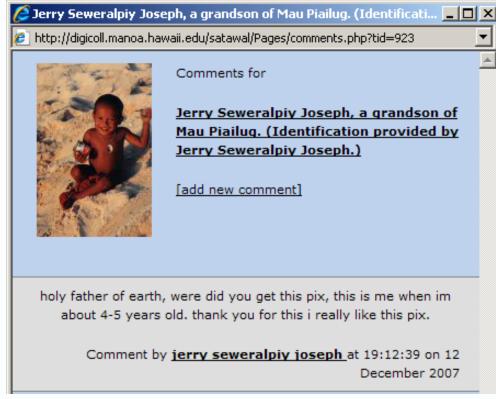
**XI International Conference on University Libraries** 

Comments add ethnographic information



# Commenting makes a static collection more dynamic







home

browse

searc

glossary

about

<u>Home</u> > <u>Search</u> > <u>Search Results</u> > Last of a race who knew of their ancient culture and practices by P. Edmunds.

LAST OF A RACE WHO KNEW OF THEIR ANCIENT CULTURE AND PRACTICES BY P. EDMUNDS.

# Rapanui



### DETAILS

Author: Edmunds, Henry P.

Document Type: Photograph
Category: People - Individuals

Date: Circa 1900

### Notes:

Notes written on the back of two duplicate photographs. Alternate verso reads, "Angata the Prophetess".

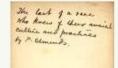
Comments: 2 comments [view/add]

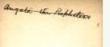
Last comment by Cristián Moreno Pakarati at 11:10:50 on 17

October 2010

Photo record edited by Stu Dawrs at 2009-11-29 12:41:56

### MORE IMAGES







Comments for Last of a race who knew of their ancient culture and practices by P. Edmunds.

[add new comment]

Comments add genealogy information

She is Te 'Oho a Neru, born circa 1830 and died in 1915. A rapanui woman of the Marama tribe who lived between Hanga Piko and Mataveri. Mother of Nicolás Pakarati Ure Po Tahi, Arone Rapu Neru and Salome Te Rahi Rapu.

Comment by <u>Cristián Moreno Pakarati</u> at 11:10:50 on 17 October 2010

She is Te 'Oho a Neru, born circa 1830, died in 1915 leaving 2 adult sons and 1 daughter: "Nicolás Pakarati" Ure Po Tahi (1851-1927), "Arone" Rapu Neru and "Salome" Te Rahi Rapu.

Comment by <u>Cristián Moreno Pakarati</u> at 11:10:14 on 17 October 2010

# **Library Services Platform**

In his 2012 article on the automation marketplace\*, Marshall Breeding noted "the emergence of a new genre of automation". He called the new products "*library services platforms*" and described their characteristics as including

- integrated management of print and electronic library materials
- reliance on global knowledgebases instead of localized databases
- offering deployment through multi-tenant (serving multiple clientorganizations) SaaS (Software as a Service) architecture
- provision of application programming interfaces (APIs) to enable interoperability and extensibility

# Library as a platform

When you think of a platform for user-generated content, you may not think of that platform as having power. [...]YouTube, Flickr, and other major Web 2.0 sites have lots of power. There are four main powers that platforms have:

- the power to set the rules of behavior
- the power to preserve and exploit user-generated content
- the power to promote and feature preferred content
- the power to define the types of interaction available to users
  [...]

Museums [...] just have to pick the few interactions that most support the kind of behavior and content creation that we value. [...] As long as you create a platform that is consistent in its values and the interactions provided, you will be able to control the experience as you open up content authority.

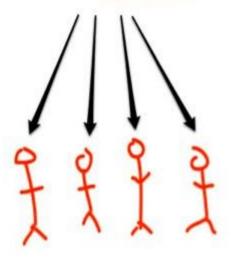
There are real opportunities here for museums to retain authority related to values, experiences, and community behavior. The power of the platform may not let you dictate every message that floats through your doors. But with good, thoughtful design, it can ensure that those messages enhance the overall museum experience.

- Nina Simon, Executive Director of the Santa Cruz Museum of Art & History

# **New relationships with users**

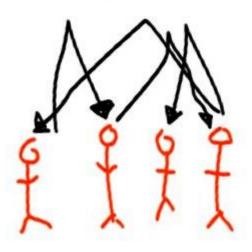
## THE PAST

Authority is content provider



## THE FUTURE

Authority is platform provider



The Future of Authority: Platform Power posted October 08, 2008

http://museumtwo.blogspot.com/2008/10/future-of-authority-platform-power.html

# **Mobile devices and Social Networking**

The ever-increasing use of smartphones, tablets, and other mobile devices are making it necessary for libraries to expand [modes of] access to their collections and services\*.

The pervasive influence of social networking sets expectations for all patronfacing products and presents opportunities for products that directly engage these media, such as SirsiDynix's Social Library\*.

SirsiDynix describes Social Library as a "fully native Facebook application that lets your library users search, place holds, view, rate, discuss and share library materials all within Facebook".

- http://www.sirsidynix.com/sociallibrary

# **Tagging at UHM Library**

### Voyager

- · Get This Item
- Print/Save
- Export
- Email
- Add to My List
- Persistent Link

### Social Bookmarks:

del.icio.us

👭 Digg

Facebook

G Google

MySpace MySpace

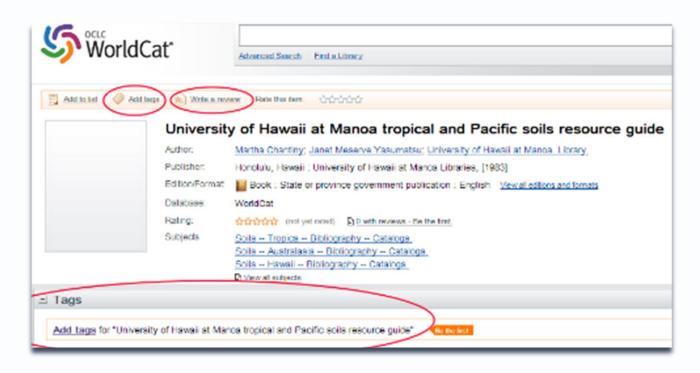
StumbleUpon



Y! MyWeb

- Voyager Record
- Staff View

### Worldcat



# **User-Generated Content (UGC)** Crowd Sourcing / Tagging

Some institutions have used game mechanics to incentivize tagging. In 2008 Carnegie Mellon created two games (ESP game and Phetch) that allowed players to competitively tag images on the Web. Museums and other institutions pursuing tagging as a way to get user-generated content about collections should consider using gaming to motivate participation.

**Brooklyn Museum Posse** http://www.brooklynmuseum.org/community/posse/

Posse members can play collection-based tagging games:



Tag! You're It!



Freeze Tag!



### Contribute

Join the community that's organising and improving this information resource.

**146,194** newspaper text corrections today

1,980 images from users this month

12,681 items tagged this week

1,394 comments added this month

771 works merged or split this month

815 lists this month

Connect to others with similar interests on the Trove forum

# **Keeping Up With... Big Data**

Library administration and management should examine what types of big data sets their library could be gathering and analyzing using big data tools. Does your library have an opportunity to measure something new, some massive data set which previously was out of your reach because of software and hardware constraints? From the side of big data curation, could your library, as part of storing your faculty's scholarly research and making it accessible, also store and mount your faculty's raw research data for others to use?

[...] Or you could **be the thought leader on big data curation** at your institution by providing guidance to storing and making accessible big data sets. Now is the opportunity for your library to **understand the issues and opportunities** big data offers to researchers, administration, and the librarians at your institution.\*

http://www.ala.org/acrl/publications/keeping\_up\_with/big\_data

# **Data Curation - Data Management Plans**

UHM Library is starting from a position of strength – our role as pathfinders and consultants

Creating guides



Giving campus workshops for researchers





# Thank you ... Mahalo ... Gracias



Martha Chantiny chantiny@Hawaii.edu