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RA21

Resource Access in the 21st Century

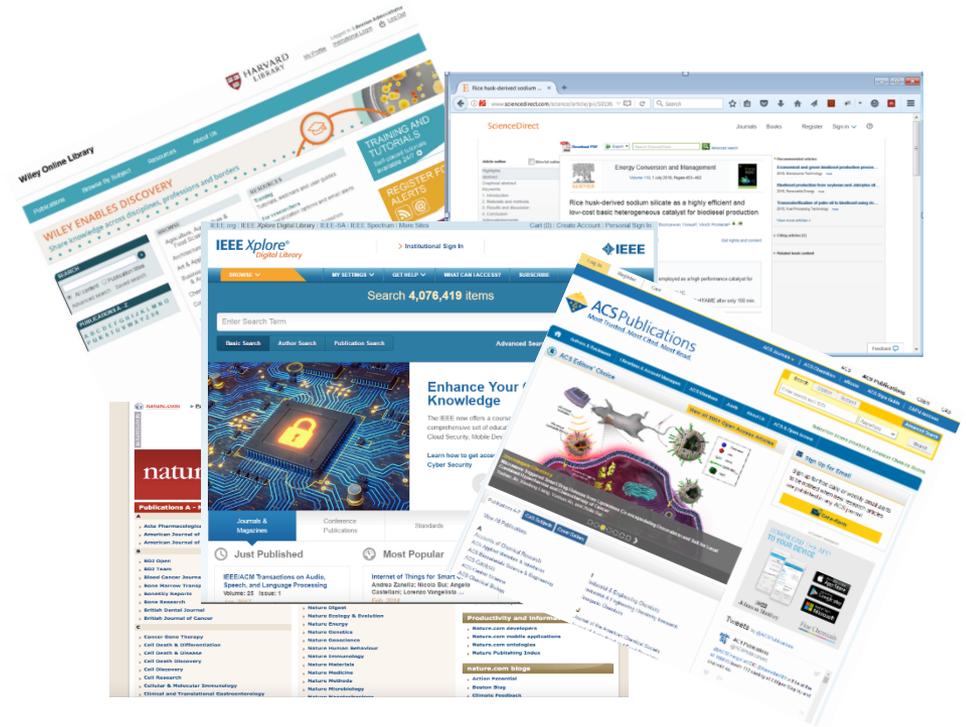
CNI Fall Member Meeting, 13 Dec 2016, Washington, DC

Chris Shillum, VP Platform and Data Integration, Elsevier
(Meltem Dincer, VP Platform Capabilities, John Wiley and Sons)
Co-chairs, STM RA21 Taskforce

Outline

- Background – the journey from print to digital
- The user experience today
- How do we propose to fix this: RA21
- Call to action – what to do next?

The Journey from Print to Digital



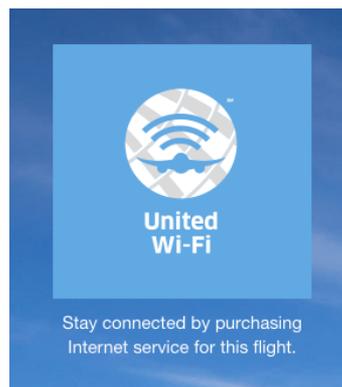
- Institution to purchase from the publisher
- Institution to lend to its users
- Single point of entry
- Simple transaction
- Library cards
- Lock the doors at night
- Must return after use
- Prohibitively expensive to make copies of entire collections

- Imitate print experience
- Optimize for ease of implementation
- IP Address Recognition

21st Century



Angewandte Chemie



- Technology evolved
- Multiple entry points
- Mobile and remote access
- Cumbersome user experience
- Easy to download an entire library

How a user experiences access to resources on campus



The screenshot shows a Google Scholar search results page. The search query is "silicates as a catalyst in biodiesel production". The results are sorted by relevance. The first result is "Investigation of silicates as a catalyst in biodiesel production: A review" by HI El Shimi, NK Attia, and GI El Diwani, published in the Journal of Energy in 2016. The second result is "[HTML] Rice husk-derived sodium silicate as a highly efficient and low-cost basic heterogeneous catalyst for biodiesel production" by W Roschar, T Sittanon, and B Yoosuk, published in Energy Conversion and Storage in 2016. This second result is circled in red. The third result is "[HTML] ... and catalytic performance of N-[(2-Hydroxy-3-trimethylammonium) propyl] chitosan chloride/Na₂ SiO₃ polymer-based catalyst for biodiesel production" by M Liang, B He, Y Shao, J Li, and Y Cheng, published in Renewable Energy in 2016. The fourth result is "[HTML] Calcium oxide as a promising heterogeneous catalyst for biodiesel production: Current state and perspectives" by DM Marinković, MV Stanković, and AV Veličković, published in Sustainable Energy in 2016. The page also shows navigation options like "Web", "Images", and "More...", and a "Sign in" button in the top right corner.

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Google silicates as a catalyst in biodiesel production

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HI El Shimi, NK Attia, GI El Diwani... - ... Journal of Energy ..., 2016 - Wiley Online Library
Summary Hiking of crude oil prices and diesel fuel shortage is incentive for the researchers to develop bioenergy sources. **Biodiesel** has environmental beneficial attributes, and its **production** processes are worthy of continued studies. Many **biodiesel production** ...
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Energy Conversion and Management
Volume 119, 1 July 2016, Pages 453–462

Rice husk-derived sodium silicate as a highly efficient and low-cost basic heterogeneous catalyst for biodiesel production

Wuttichai Roschata^a, Theeranun Sirtanon^b, Boonyawan Yoosuk^b, Vinich Promarak^c

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Highlights

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Article outline: Highlights, Abstract, Graphical abstract, Keywords, 1. Introduction, 2. Materials and methods, 3. Results and discussion, 4. Conclusion, Acknowledgements, Appendix A. Supplementary material, References

Figures and tables: Rice husk, Digested rice husk, Rice husk ash (RHA), Resulting solution, Sodium silicate (Na₂SiO₃)

Recommended articles: Economical and green biodiesel production processes, Biodiesel production from soybean and Jatropha oil, Transesterification of palm oil to biodiesel using rice husk ash

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Fundamental Expectations of the Community

- **Researchers**
 - Seamless access to subscribed resources, from any device, from any location, from any starting point
 - A consistent, intuitive user experience across resources
 - Increased privacy of personal data
 - Streamlined text and data mining
- **Resource Providers**
 - Ability to provide individualized and differentiated access for better reporting to governing bodies and customers
 - Ability to offer personalized services to accelerate insight and discovery
 - Ability to ensure the integrity of content on both institutional and commercial platforms
- **Customers**
 - Minimization of administrative burden of providing access to authorized user communities
 - Maximization the use of the resources purchased
 - Protection of the privacy of user communities and advocacy for their security

RA21 Problem Statement

- Access to STM content and resources is traditionally managed via IP address recognition.
- For the past 20 years, this has provided seamless access for users when on campus
- However, with modern expectations of the consumer web, this approach is increasingly problematic:
 - Users want seamless access from any device, from any location
 - Users increasingly start their searches on 3rd party sites (e.g. Google, PubMed) rather than publisher platforms or library portals and run into access barriers
 - A patchwork of solutions exist to provide off-campus access: proxy servers, VPNs, Shibboleth, however the user experience is inconsistent and confusing
 - Publishers are facing an increasing volume of illegal downloads and piracy, and fraud is difficult to track and trace because of insufficient information about the end user
 - The lack of user data also impedes the development of more user-focused, personalized services by publishers.
 - The increase in privacy and fraud also poses a significant risk to campus information security

Hypothesis

1. In part, the ease of resource access within IP ranges makes off campus access so difficult
 2. In part, the difficulty of resource outside IP ranges encourages legitimate users to resort to illegitimate means of resource access
- ∴ It is time to move beyond IP-recognition as the main authentication system for scholarly content while making sure the alternative is as barrier free as possible**

STM RA21 Task Force*

Work to Date

Apr 2016

- Initial proposal to the STM Board

Jun 2016

- Face to face task force meeting in 3 locations

Jul 2016

- Task force charter approved by the STM Board

Jul – Nov 2016

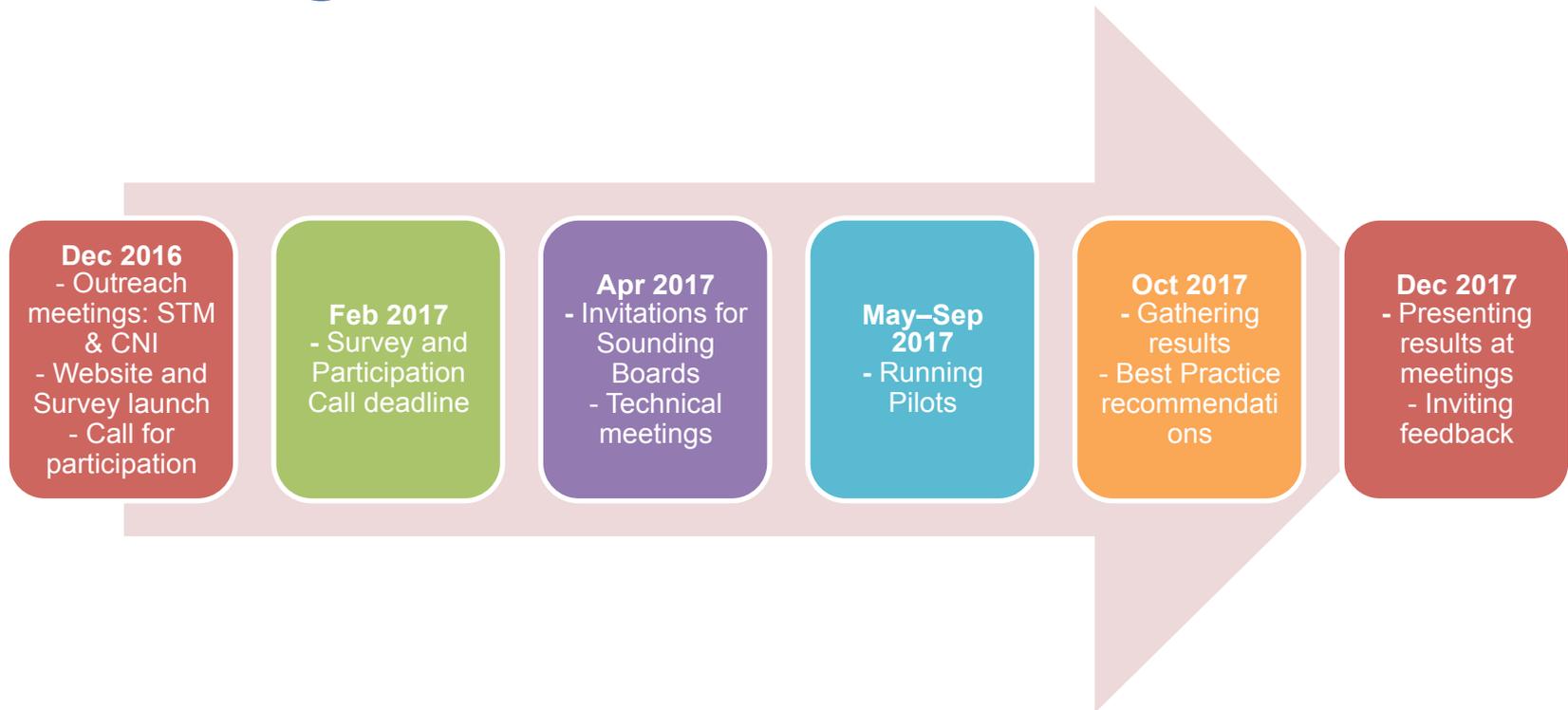
- Ground work by the task force

Dec 2016

- Outreach and call for participation

* Initial RA21 Task Force included representatives from ACS, APA, Brill, CABI, CUP, Elsevier, Emerald, IEEE, IOPP, Kluwer, OUP, SpringerNature, Thieme and Wiley

Going Forward – How Will it Work?



- Adopt a diverse, inclusive approach and achieve consensus across stakeholder groups
- Recommend new solutions for access strategies beyond IP recognition practices
- Explain the standard measures that publishers, libraries and end-users should undertake for better protocols and security
- Test and improve solutions by organizing pilots in a variety of environments for the creation of best practice recommendations

Note: The task force will not build a specific technical solution or an industry-wide authentication platform

RA21 Draft Principles

1. The user experience for researchers will be as seamless as possible, intuitive and consistent across varied systems, and meet evolving expectations.
2. The solution will work effectively regardless of the researcher's starting point, physical location, and preferred device.
3. The solution will be consistent with emerging privacy regulations, will avoid requiring researchers to create yet another ID, and will achieve an optimal balance between security and usability.
4. The system will achieve end-to-end traceability, providing a robust, widely adopted mechanism for detecting fraud that occurs at institutions, vendor systems, and publishing platforms.
5. The customer will not be burdened with administrative work or expenses related to implementation and maintenance.
6. The implementation plan should allow for gradual transition and account for different levels of technical and organizational maturity in participating

Solution Outline

Aspects of the Problem

1. Only the user's home institution can validate their access to purchased content and services:

So, We need to do Contextual, Federated Authentication

2. The user can start their journey from anywhere on the web, on any device, from any physical location:

So, We need to solve the WAYF (Where Are You From) question

3. We all want access to be as barrier free as possible:

So, We need to make it as simple as possible for the user to understand what they need to do

Aspects of the solution

Federated authentication using SAML

- The only IDM standard that supports contextual rather than just individual authentication
- Solves key aspects of the problem including distributed trust, support for anonymity and metadata exchange
- SAML federations reduce many-many agreements to many-one-many agreements

Standard for universal session awareness

- Don't ask the user to authenticate if they are already authenticated

Layered approach to WAYF "signposting"

- Use whatever you already know about the user (cookies, IP range, email address) to point them back to the correct authentication point if not already signed in

Standardized user experiences and workflows

- Nothing will be as seamless as IP, but users will get used it if they have to do the same thing every time.



Testing the Hypothesis

- Pilot program through Q3 2017
- Broad spectrum of stakeholders
- Address a variety of use cases
- Self organized, yet, registered and tracked under the larger umbrella
- Feedback and results shared with the community

Who Should be Involved

- STM member Task Force
- Standards bodies, esp. NISO
- Libraries
- Research and Education federation operators
- Technology managers
- Aggregators
- Proxy server providers
- Vendors
- Researchers
- Customers
- Other interested parties

What to Do Next?

- **Visit:**
<http://www.stm-assoc.org/standards-technology/ra21-resource-access-21st-century/>
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