

Collaborative Literature Work in the Scientific & Educational Publication Process: The Cogeneration of Citation Networks

Leon Burkard (burkard@kit.edu), Andreas Geyer-Schulz

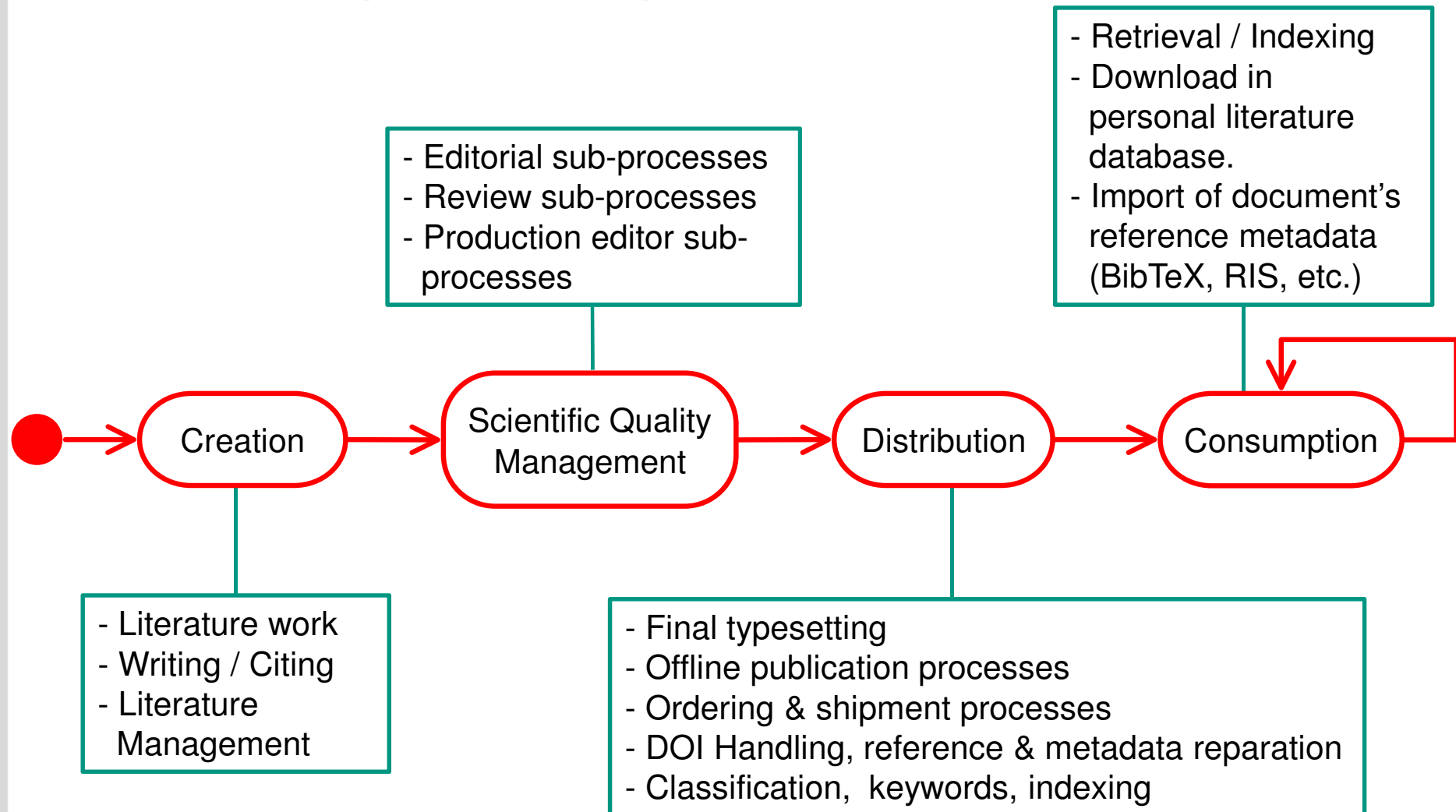
Information Services and Electronic Markets



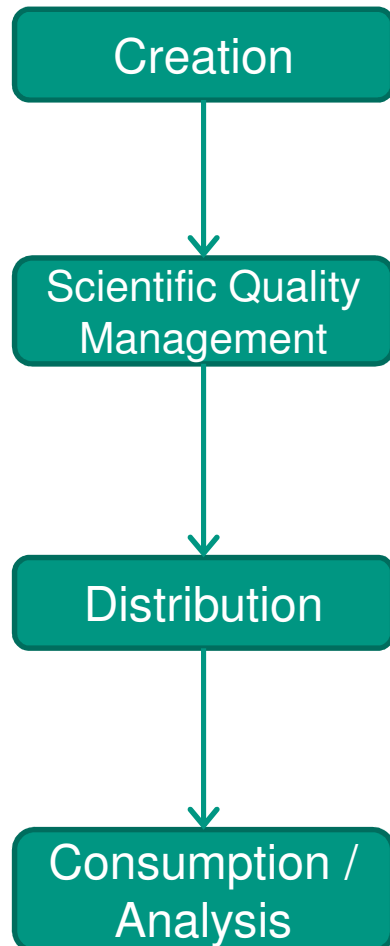
Outline

- A traditional publication process
- Challenges & Issues
- Use-Case & Requirements for a literature middleware
- Demonstration of the LitObject-Middleware
- Cogeneration of citation networks
- Future Work
- Summary

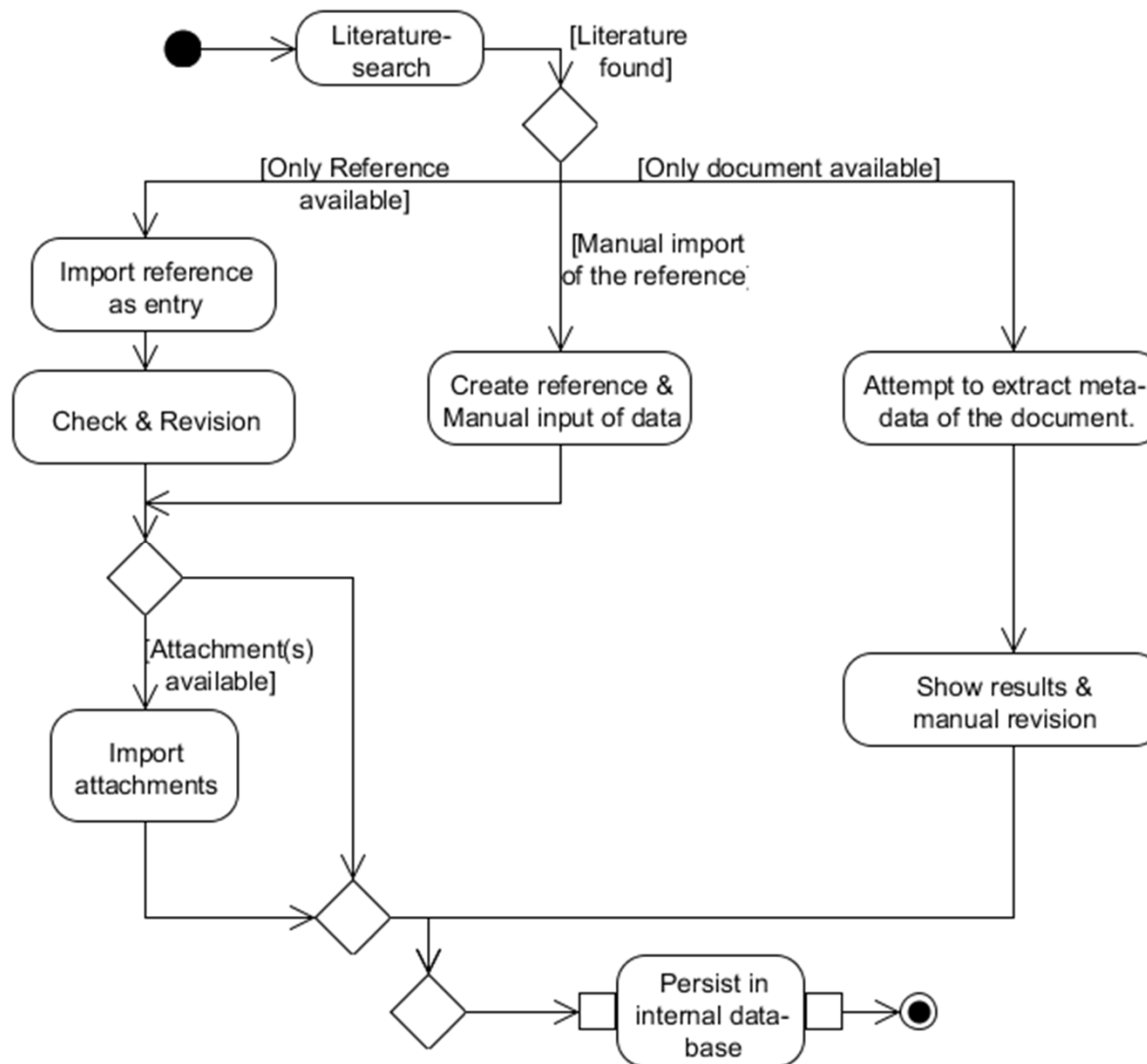
A traditional publication process



Challenges



- How to **rediscover** past literature searches?
- How to **share** and **persist** literature searches?
- Time-consuming **reference and content checks**
- How to **store cited literature** permanently?
- How to provide “good” **reference metadata and links to attachments?**
- How to collect and use collected metadata for further usage e.g. **citation networks?**
- How to consume “good” **reference metadata and links to attachments** with various literature management approaches?



- a) Manual typing of reference, manual linking/importing attachments
- b) Attempt to extract information out of the document.
→ Combination with a google search.
- c) Automatic import
 - a) Crawler / Website Translators
 - b) Embedded metadata in the website

Zotero | Home - Mozilla Firefox

Zotero | Home

https://www.zotero.org

Google

Log In · Register

Upgrade Storage

Home Groups People Documentation Forums Get Involved

Search support Search

Zotero [zoh-TAIR-oh] is a free, easy-to-use tool to help you **collect, organize, cite, and share** your research sources.

Download Now

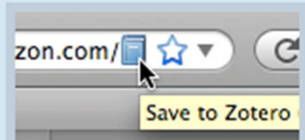
Available for Mac, Windows, and Linux

Collect **Organize** **Cite** **Sync** **Collaborate**

Grab your research with a single click.

A personal research assistant.

Zotero is the only research tool that automatically senses content in your web browser, allowing you to add it to your personal library with a single click. Whether you're searching for a preprint on



Import to Zotero Button

Zotero Button



An APL-tutoring adventure game

Full Text: PDF

Authors: [A. Geyer-Schulz](#) [Vienna University of Economics and Business Administration, Department of Applied Computer Science, Augasse 2-6, 1090 Vienna, Austria](#)
[A. Taudes](#) [Vienna University of Economics and Business Administration, Department of Applied Computer Science, Augasse 2-6, 1090 Vienna, Austria](#)
[J. Mitlöhner](#) [Vienna University of Economics and Business Administration, Department of Applied Computer Science, Augasse 2-6, 1090 Vienna, Austria](#)



1989 Article



Bibliometrics

- Downloads (6 Weeks): 3
- Downloads (12 Months): 9
- Downloads (cumulative): 268
- Citation Count: 4

Published in:



• Proceeding
APL '89 Conference proceedings on APL as a tool of thought
Pages 148-157
ACM New York, NY, USA ©1989
[table of contents](#) ISBN:0-89791-327-2 doi>[10.1145/75144.75165](#)

• Newsletter

Tools and Resources

TOC Service:
 Email RSS RSS

[Save to Binder](#)

Export Formats:
[BibTeX](#) [EndNote](#) [ACM Ref](#)

Share:



Tags: [apl](#) [computer-assisted instruction](#) [design](#) [games](#) [human factors](#) [languages](#)

Literature can be organized in collections

Attached document

Imported reference

The screenshot displays the Springer Link web interface. At the top, the browser address bar shows 'link.springer.com'. The main header features the Springer Link logo and a search bar. Below the header, there is a navigation menu with options like 'Meine Bibliothek', 'demo1', 'demo2', 'Eintragsdubl...', 'Einträge ohn...', and 'Papierkorb'. The 'demo2' collection is selected, showing a list of entries with columns for 'Titel' and 'Ersteller'. One entry is highlighted: 'An APL-tutoring Adventu' by 'Geyer-Schulz, A.'. To the right of this entry, a document icon indicates an attached document. Below the list, a detailed view of the selected entry is shown, including fields for 'Eintragsart', 'Titel', 'Autor', 'Datum', 'Titel des Konferenzbandes', 'Name der Konferenz', 'Ort', and 'Verlag'. The interface also includes a search bar, a settings gear, and a navigation menu in the top right corner.

Meine Bibliothek
demo1
demo2
Eintragsdubl...
Einträge ohn...
Papierkorb

Titel Ersteller

An APL-tutoring Adventu Geyer-Schulz, A.
Geyer-Schu...

Infos Notizen Tags Zugehörig

Eintragsart: Konferenz-Paper
Titel: An APL-tutoring Adventu
Autor: Geyer-Schulz, A.
Autor: Taudes, A.
Autor: Mitlöhner, J.
(...) Zusammenfassung: This paper is concerned v
Datum: 1989
Titel des Konferenzbandes: Conference Proceedings
Tool of Thought
Name der Konferenz:
Ort: New York, NY, USA
Verlag: ACM

Keine Tags vorhande

Multiple downloads possible in one step

The screenshot shows the Springer Link search results page for the query "geyer schulz". A modal dialog titled "Einträge auswählen" (Select entries) is open, allowing the user to select items to add to their library. The dialog lists several search results with checkboxes. The selected item is "A Social Location-Based Emergency Service to Eliminate the Bystander Effect".

Einträge auswählen

Auswählen, welche Artikel zu Ihrer Bibliothek hinzugefügt werden sollen

- An update algorithm for restricted random walk clustering for dyna...
- A Social Location-Based Emergency Service to Eliminate the Bysta...
- Building Recommendations from Random Walks on Library OPAC U...
- A Customer Purchase Incidence Model Applied to Recommender S...
- The concept of fuzzy sets with special regard to their linguistic int...
- Contents volumes 26–50 (1984–1991)
- Others Also Use: A Robust Recommender System for Scientific Lib...
- Recommender Services in Scientific Digital Libraries
- Repeat-buying Theory and its Application for Recommender Services

Select All Deselect All

Abbrechen OK

Content Type

Chapter	916
Article	478
Reference Work Entry	4
Book	3

Discipline see all

Medicine	439
Computer Science	239
Life Sciences	194

Chapter
A Social Location-Based Emergency Service to Eliminate the Bystander Effect

Multiple downloads possible in one step

The screenshot shows the Springer Link website interface. At the top, the search bar contains "geyer schulz". A yellow tooltip "In Zotero speichern... (Springer Link)" is visible near the top right. A modal dialog titled "Einträge auswählen" (Select entries) is open in the center, listing several articles with checkboxes. Below the dialog, the article "A Social Location-Based Emergency Service to Eliminate the Bystander Effect" is visible. A second tooltip, "Speichern nach demo1...", is open over the article, showing options like "Full Text PDF" and "Snapshot".

arch?query=geyer+schulz

Springer Link

geyer schulz

Home • Contact Us

Include Preview-Only content

Refine Your Search

Content Type	Count
Chapter	916
Article	478
Reference Work Entry	4
Book	3

Discipline	Count
Medicine	439
Computer Science	239
Life Sciences	194
Biomedical Sciences	192
Business & Management	171

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- A Customer Purchase Incidence Model Applied to Recommender S...
- The concept of fuzzy sets with special regard to their linguistic int...
- Contents volumes 26–50 (1984–1991)
- Others Also Use: A Robust Recommender System for Scientific Lib...
- Recommender Services in Scientific Digital Libraries
- Repeat-buying Theory and its Application for Recommender Se...

Select All Deselect All

Abbrechen

Speichern nach demo1...

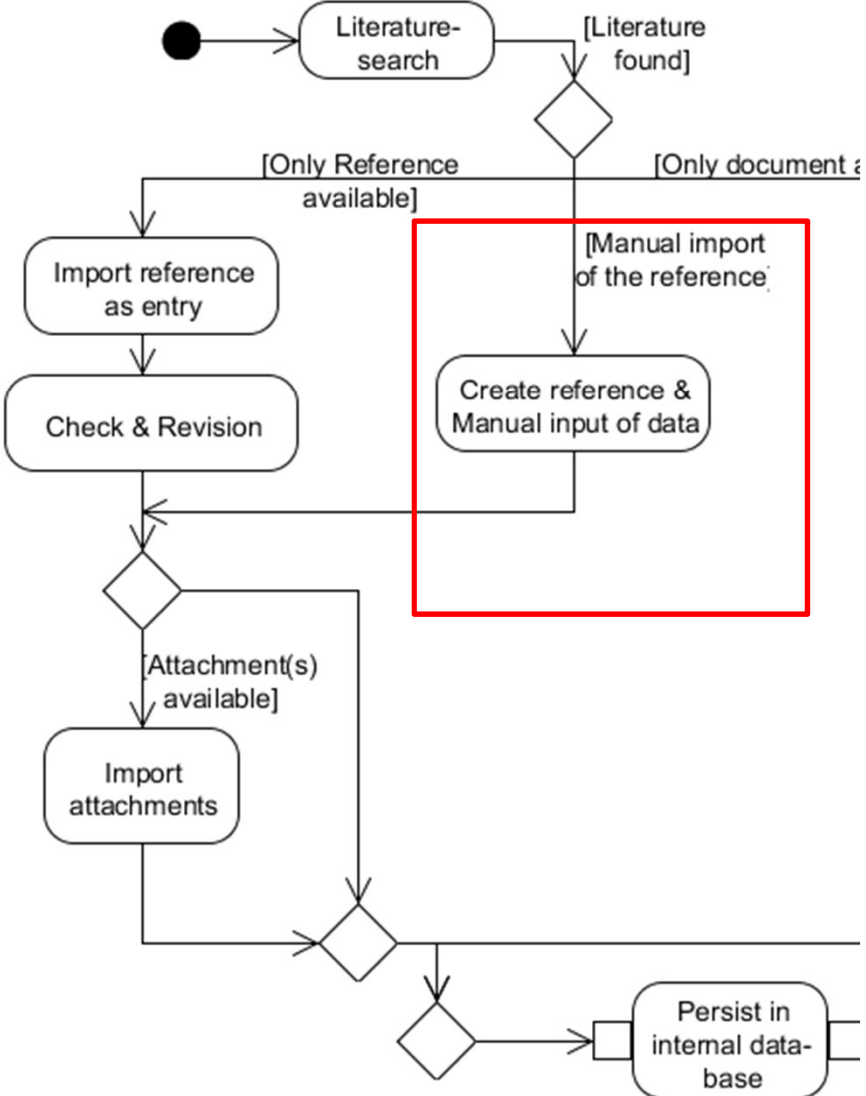
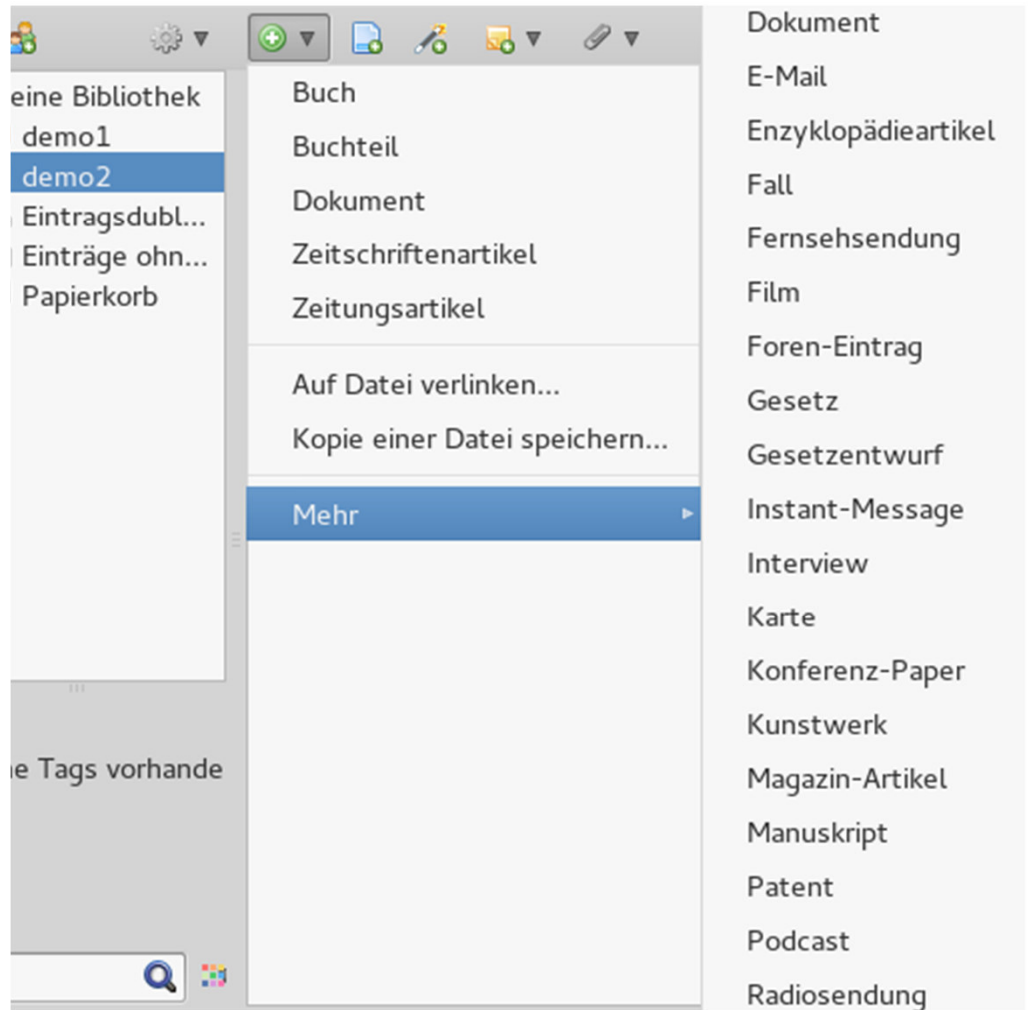
- A Social Location-Based Emergency Service to Eliminate the Bystander Effect
- Snapshot
- Full Text PDF
- An update algorithm for restricted random walk clustering for dynamic data sets
- Snapshot

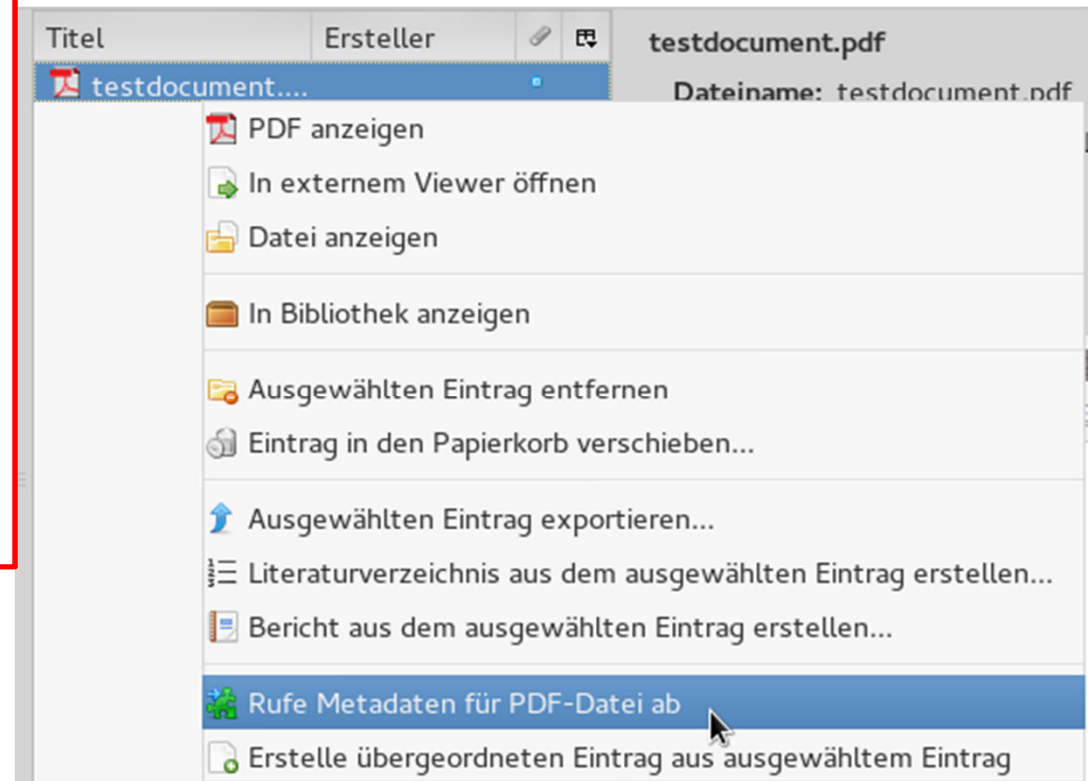
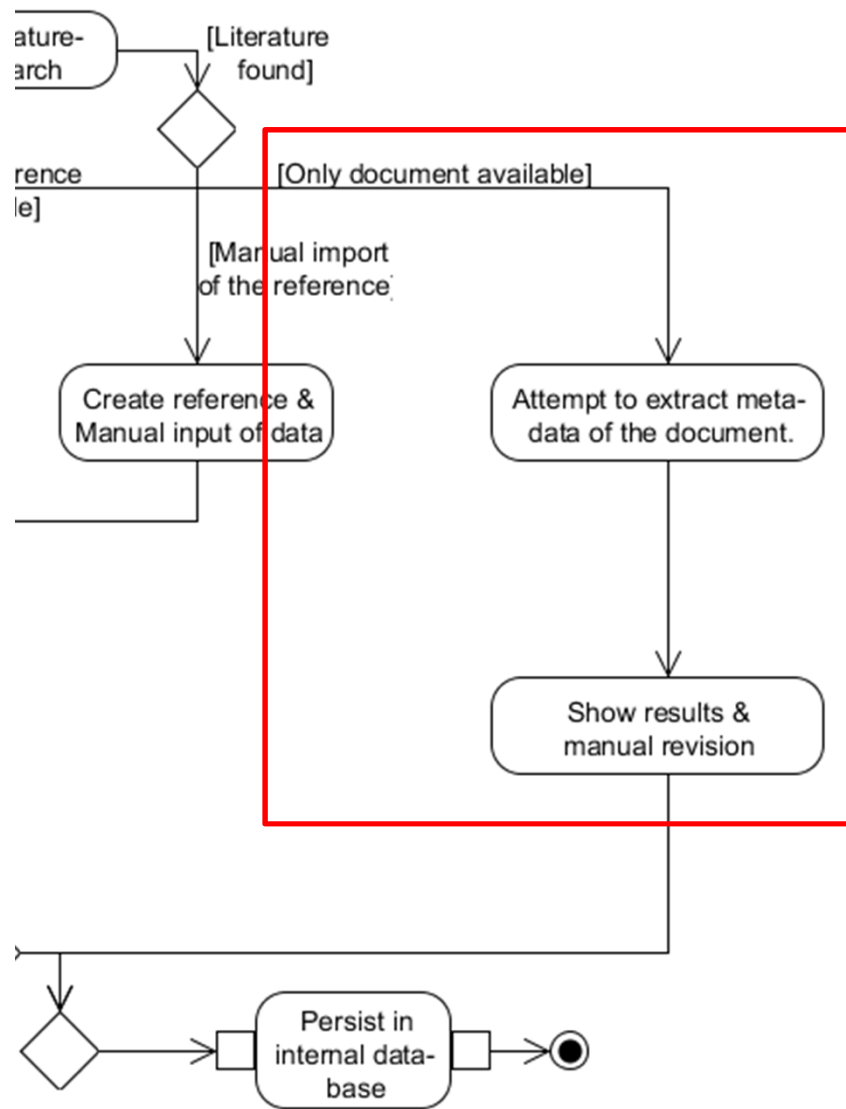
Chapter

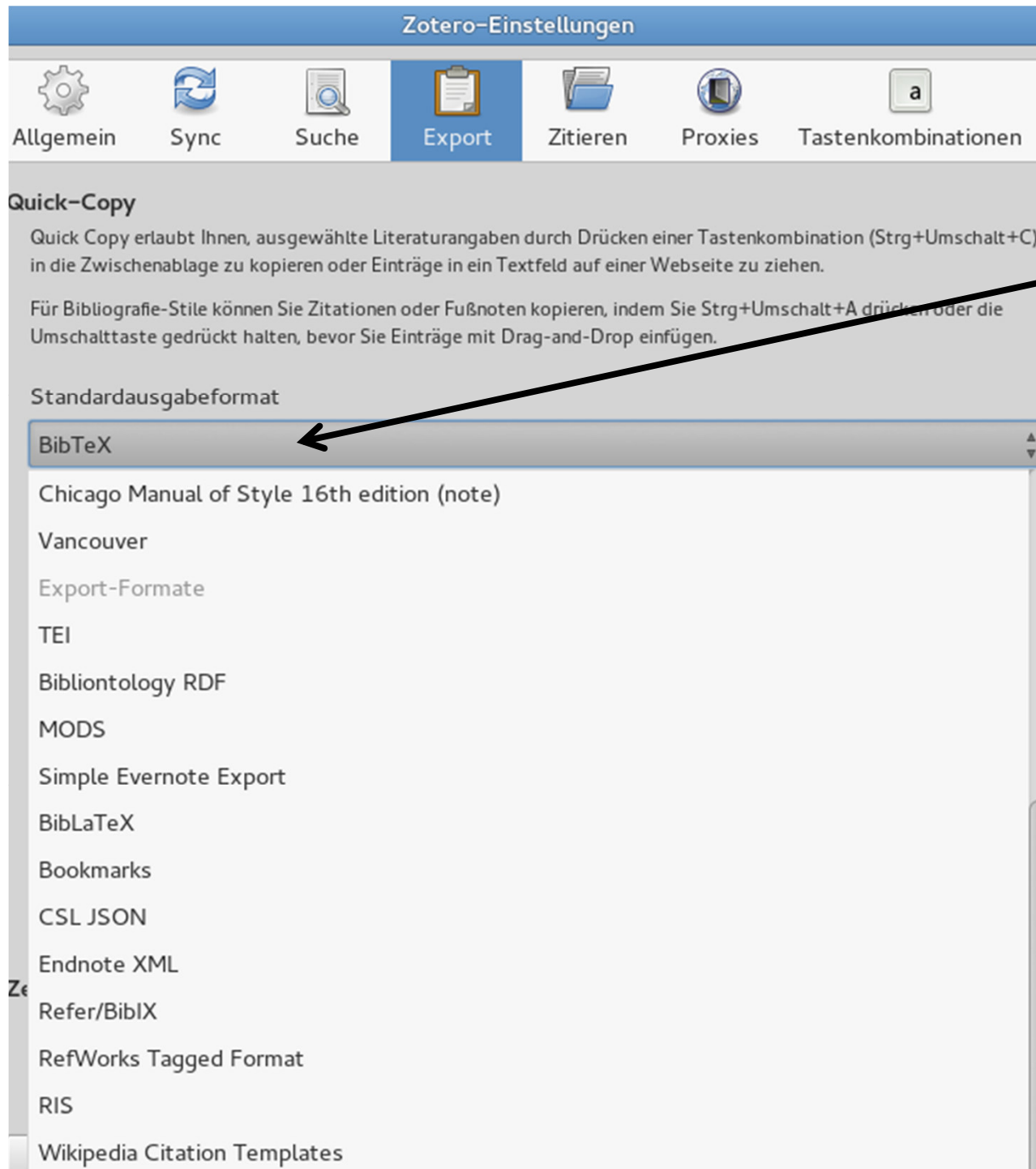
A Social Location-Based Emergency Service to Eliminate the Bystander Effect

The availability of inexpensive smartphones with GPS units and the abil... the rapid emergence of a large number of location-based services (LBS)

Manual import







Various export options

Quick Export:

1. **Select** one or many literature entries in Zotero.
2. Press **Ctrl+Shift+C** for copying the reference to the clipboard.
3. At the desired destination document **press Ctrl+V** (paste) and the corresponding literature entries' references are exported in the selected style.

Example BibTeX export

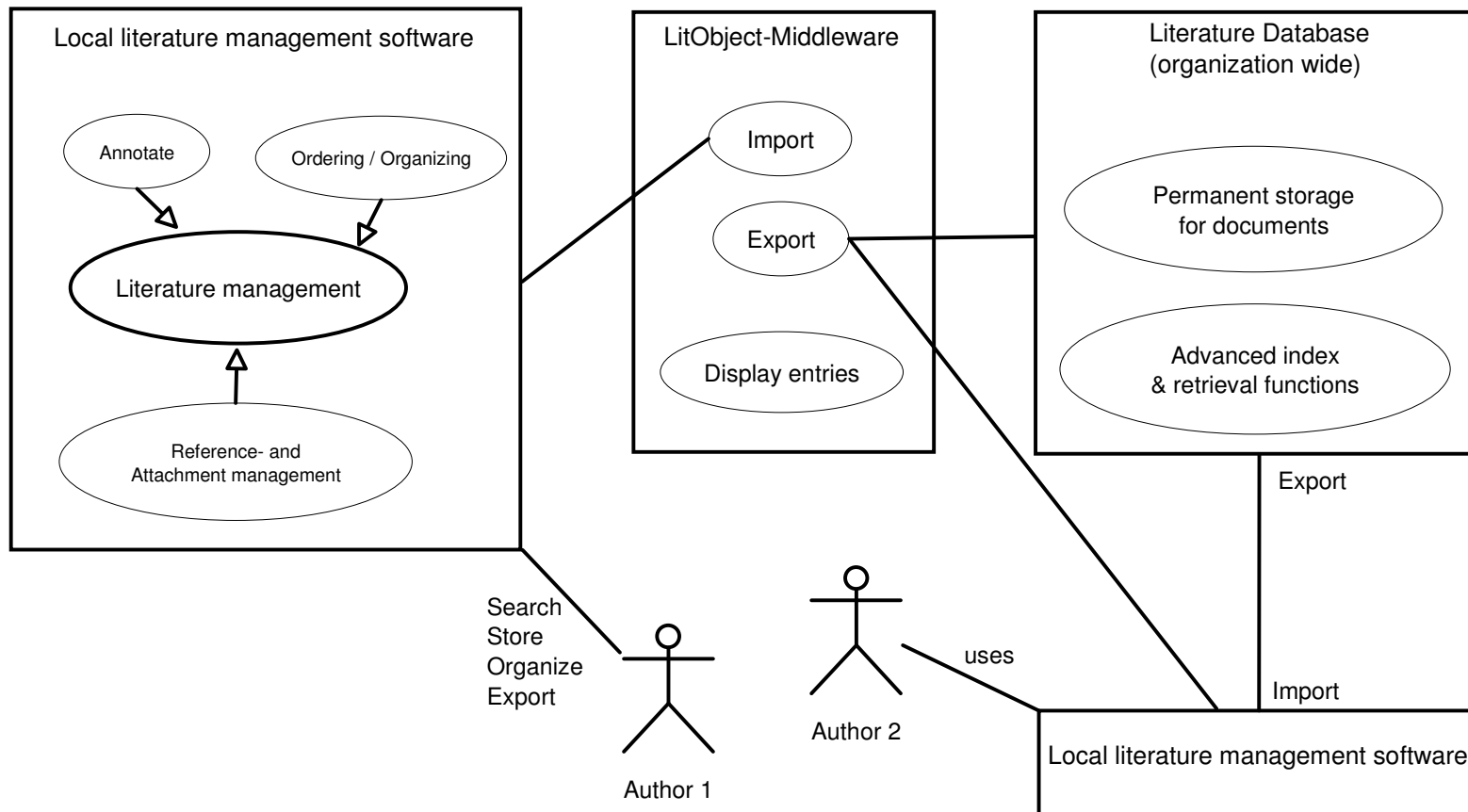
But....what about
collaborative working with
literature?

08.07.2014

```
2 @inproceedings{geyer-schulz_apl-tutoring_1989,  
3   address = {New York, {NY}, {USA}},  
4   series = {{APL} '89},  
5   title = {An {APL}-tutoring Adventure Game},  
6   isbn = {0-89791-327-2},  
7   url = {http://doi.acm.org/10.1145/75144.75165},  
8   doi = {10.1145/75144.75165},  
9   abstract = {This paper is concerned with the development of a  
like to embed the learning component in an object oriented ad  
communicating automata, can be freely defined, using a "game  
actor who is presented with a number of exercises that are se  
entered into the system are analysed by the teachers, who use  
10  urldate = {2014-06-25},  
11  booktitle = {Conference Proceedings on {APL} As a Tool of Tho  
12  publisher = {{ACM}},  
13  author = {Geyer-Schulz, A. and Taudes, A. and Mitlöhner, J.},  
14  year = {1989},  
15  pages = {148-157},  
16  file = {Geyer-Schulz et al. - 1989 - An APL-tutoring Adventur  
Adventure Game.pdf:application/pdf}  
17 }  
18  
19 @article{franke_update_2009,  
20   title = {An update algorithm for restricted random walk clust  
21   volume = {3},  
22   issn = {1862-5347, 1862-5355},  
23   url = {http://link.springer.com/article/10.1007/s11634-009-00  
24   doi = {10.1007/s11634-009-0039-6},  
25   abstract = {In this article, we present a randomized dynamic  
given good results in past studies. We discuss different appr  
efficient for a small percentage of changes in the data set a  
thus no need for any reclustering ever. In addition, the meth  
26   language = {en},  
27   number = {1},  
28   urldate = {2014-06-25},  
29   journal = {Advances in Data Analysis and Classification},  
30   author = {Franke, Markus and Geyer-Schulz, Andreas},  
31   month = jun,  
32   year = {2009},  
33   keywords = {60J20, 62H30, Clustering, Dynamic clustering, Ran  
Physics, Computer Science, Chemistry and Earth Sciences, Stat  
34   pages = {63--92},  
35   file = {Full Text PDF:/home/leon/.mozilla/firefox/atcxfiq7.De  
pdf;Snapshot:/home/leon/.mozilla/firefox/atcxfiq7.Demo_LIS Wo  
36 }  
37  
38 @incollection{geyer-schulz_social_2012,  
39   series = {Communications in Computer and Information Science}
```

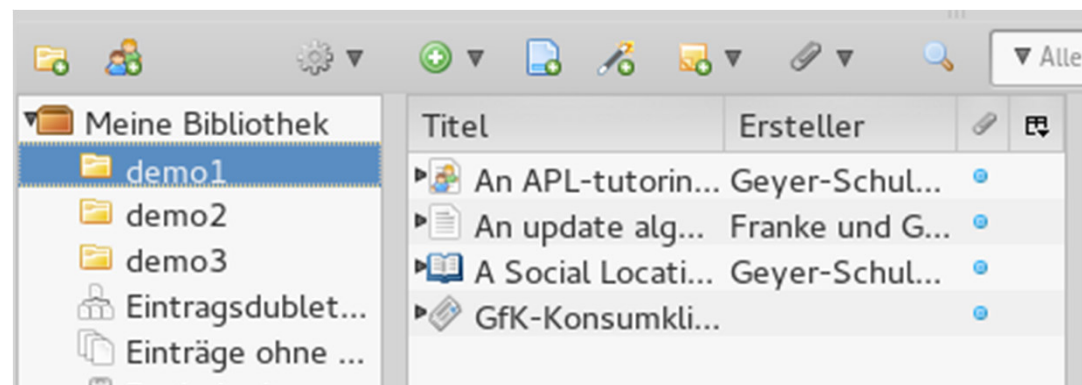
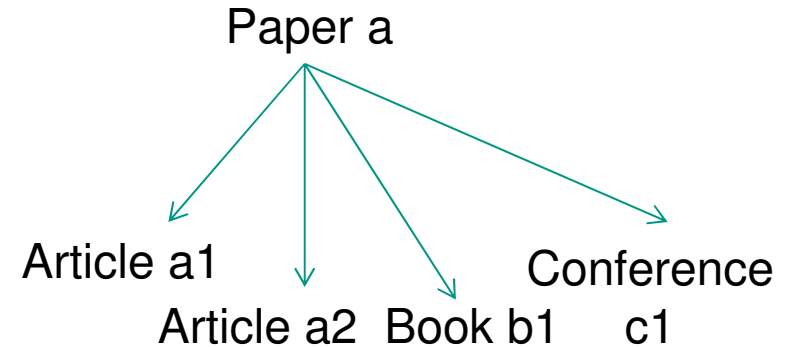
Use-Case Scenario

- Rediscover
 - Share
 - Persist
 - Less duplication of work
- Continuous transfer of literature objects
 - Basis for growing, co-generated linked literature objects



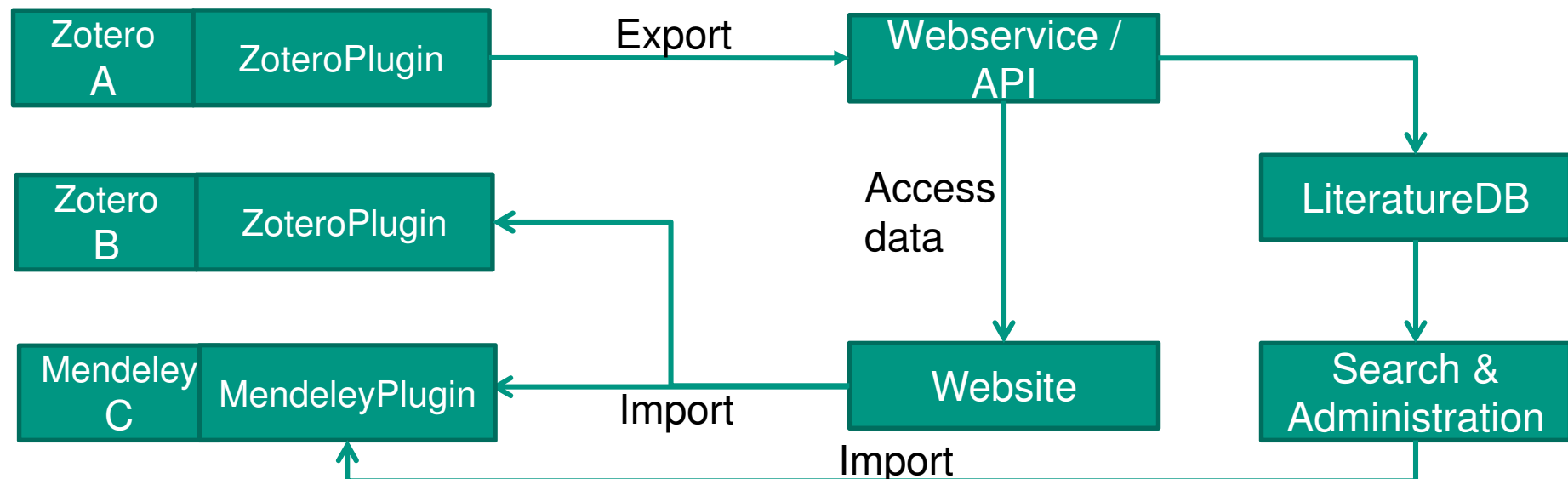
Requirements for the LitObject Middleware

- Save **literature objects**
 - Reference in a data format, e.g. BibTeX
 - One or many attachments
 - Notes & Annotations to the literature object
- Save **links** between literature objects
 - Literature object a references b,c,d
- Save **collections** of literature objects
 - All literature to a sub-topic



Requirements for the LitObject Middleware

- Save **literature objects**
- Save **links** between literature objects
- Save **collections** of literature objects



Why not use one of the integrated solutions?

- Commercial services = Limited research possibilities
 - Closed source, difficult to extend for new applications
 - Often too expensive for intensive collaborative literature work
- Vendor Lock-In
 - No literature object sharing, interoperability nearly non-existent
- Extensibility very limited
 - No further services like citation graph generation or recommendation services
 - No seamless integration in publication processes
- We need a solid basis for further development projects in the field of open library and information services

Pro
Our most popular plan

€ **9.99** /month

Or €110 /year — One month free

10^{GB}
Personal library space

Create plan
For education & non-profit use

€ **49** /month
(including VAT)

5
Group collaborators

Demo Part 2

- Save **literature objects**
- Save **links** between literature objects
- Save **collections** of literature objects



■ LitObject Middleware

- Developed as a Mozilla Firefox extension
- Extends the literature management software Zotero
 - Provides the export process step to the LitObject Middleware Service

The screenshot shows the Zotero interface. On the left, a table lists literature entries with columns for 'Ersteller' and a status icon. On the right, a dropdown menu for 'LitObject Middleware' is open, showing options: 'Export to the middleware', 'Preferences' (highlighted), 'Your literature in the middleware', 'Search in LitDB', and 'About'.

Ersteller	
Geyer-Schulz et al.	•
for dynamic dat... Franke und Geyer-Schulz	•
he Bystander Ef... Geyer-Schulz et al.	•
out	•

- Export to the middleware
- Preferences
- Your literature in the middleware
- Search in LitDB
- About

LitObject Preferences

Please enter the URL to the LitObject middleware service and a username, e.g. your student account. At current development status no password is required.

LitObject Server Preferences

Server

Username

Synchronisation Preferences

Please select all literature collections that should be pushed to the LitObject service:

demo1 demo2 demo3

▼ Alle Felder und Tags

LitObject Middleware ▼ ➔ ▼

Ersteller	
Geyer-Schulz et al.	•
for dynamic dat... Franke und Geyer-Schulz	•
he Bystander Ef... Geyer-Schulz et al.	•
out	•

- Export to the middleware
- Preferences
- Your literature in the middleware
- Search in LitDB
- About

Titel	Ersteller		
▶ An APL-tutoring Adventure Game	Geyer-Schulz et al.		○
▶ An update algorithm for restricted random walk clustering for dynamic dat...	Franke und Geyer-Schulz		○
▶ A Social Location-Based Emergency Service to Eliminate the Bystander Ef...	Geyer-Schulz et al.		○
▶ GfK-Konsumklima: Deutsche in Kaufstimmung, Sparen ist out			○

Exporting your collections

4 Einträge in dieser Ansicht

▼ Alle Felder und Tags

LitObject Middleware ▼ ➡ ▼

Ersteller	
Geyer-Schulz et al.	ⓘ
for dynamic dat... Franke und Geyer-Schulz	ⓘ
he Bystander Ef... Geyer-Schulz et al.	ⓘ
out	ⓘ

- Export to the middleware
- Preferences
- Your literature in the middleware
- Search in LitDB
- About

Hi demo1

Select one of your exported collections:

- [demo1](#)
- [demo3](#)



- Workshop/zotero/storage/SC5P9W2N/content.pdf:application/pdf
- **year:** 2009
- **urldate:** 2014-06-25
- **title:** An update algorithm for restricted random walk clustering for dynamic data sets
- **pages:** 63-92
- incollection: **A Social Location-Based Emergency Service to Eliminate the Bystander Effect**
 - **publisher:** Springer Berlin Heidelberg
 - **isbn:** 978-3-642-25205-1, 978-3-642-25206-8
 - **language:** en
 - **copyright:** ©2012 Springer-Verlag {GmbH} Berlin Heidelberg
 - **author:** Geyer-Schulz, Andreas and Ovelgönne, Michael and Sonnenbichler, Andreas C.
 - **url:** http://link.springer.com/chapter/10.1007/978-3-642-25206-8_7
 - **series:** Communications in Computer and Information Science
 - **abstract:** The availability of inexpensive smartphones with {GPS} units and the ability to run 3rd party software facilitated the rapid emergence and navigation related application scenarios, in this contribution we want to motivate the use of mobile devices for personal safety services. The Obstacles in the social help process have been summarized in the concept of the bystander effect. This contribution aims to show how a {LBS} can service that notifies nearby contacts of a victim of the incident and guides them to the victim so that they can provide help. Furthermore, we will closeness of service participants from different sources of data. Also, we will discuss and compare approaches for the system design we consider benefits in practice.
 - **title:** A Social Location-Based Emergency Service to Eliminate the Bystander Effect
 - **number:** 222
 - **pages:** 112-130
 - **keywords:** Algorithm Analysis and Problem Complexity, Bystander effect, Coding and Information Theory, Computer Communication Networks, Multimedia Information Systems, Privacy, Social network analysis
 - **editor:** Obaidat, Mohammad S. and Tsihrintzis, George A. and Filipe, Joaquim
 - **file:** A Social Location-Based Emergency Service to Eliminate the Bystander Effect - Springer:/home/leon/.mozilla/firefox/atcxfiq7.Demo_LIS Workshop/zotero/storage/BR22HKVW/content.pdf:application/pdf
 - **year:** 2012
 - **urldate:** 2014-06-25
 - **month:** #jan#
 - **booktitle:** e-Business and Telecommunications
- inproceedings: **An {APL}-tutoring Adventure Game**
 - **publisher:** {ACM}
 - **doi:** 10.1145/75144.75165
 - **isbn:** 0-89791-327-2
 - **author:** Geyer-Schulz, A. and Taudes, A. and Mitlöhner, J.
 - **url:** <http://doi.acm.org/10.1145/75144.75165>
 - **series:** {APL} '89
 - **abstract:** This paper is concerned with the development of a program system that assists the teaching of {APL}2. Rather than presenting the tea oriented adventure game environment written itself in {APL}2. The game's actors, objects and places, which are implemented as hierarchical cla by a game simulator.The teaching aspect is integrated as follows: The adventurer/student is a specific actor who is presented with a number of ex obtained by the student so far. The solutions entered into the system are analysed by the teachers, who use an {LR}(1)-parser generator and "cri
 - **title:** An {APL}-tutoring Adventure Game
 - **year:** 1989
 - **pages:** 148-157
 - **file:** content:/home/leon/.mozilla/firefox/atcxfiq7.Demo_LIS Workshop/zotero/storage/NB5DZ666/content.pdf:application/pdf
 - **address:** New York, {NY}, {USA}
 - **urldate:** 2014-06-25
 - **booktitle:** Conference Proceedings on {APL} As a Tool of Thought
- article: **{GfK}-Konsumklima: Deutsche in Kaufstimmung, Sparen ist out**
 - **shorttitle:** {GfK}-Konsumklima
 - **title:** {GfK}-Konsumklima: Deutsche in Kaufstimmung, Sparen ist out
 - **url:** <http://www.spiegel.de/wirtschaft/unternehmen/gfk-konsumklima-deutsche-in-kaufstimmung-sparen-ist-out-a-977318.html>

The screenshot shows a web browser window with the address bar displaying 'localhost:5050/demo1/demo1'. The main content area shows the details of a PDF document from the Zotero collection 'Workshop/zotero/storage/SC5P9W2N/content.pdf:application/pdf'. The document metadata includes:

- year: 2009
- urldate: 2014-06-25
- title: An update algorithm for restricted random walk clustering for dynamic data sets
- pages: 63-92

The collection is 'A Social Location-Based Emergency Service to Eliminate the Bystander Effect'. Other metadata includes publisher (Springer Berlin Heidelberg), isbn (978-3-642-25205-1, 978-3-642-25206-8), language (en), copyright (©2012 Springer-Verlag {GmbH} Berlin Heidelberg), author (Geyer-Schulz, Andreas and Ovelgönne, Michael and Sonnenbichler), url (http://link.springer.com/chapter/10.1007/978-3-642-25206-8_7), series (Communications in Computer and Information Science), and an abstract starting with 'The availability of inexpensive smartphones with {GPS} units and navigation related application scenarios, in this contribution we want to...'. A red circle highlights the folder icon in the browser's address bar.

On the left side, a sidebar titled 'Meine Bibliothek' (My Library) lists several collections: demo1, demo2, demo3, test-import (highlighted with a red circle), Eintragsdublet..., Einträge ohne ..., and Papierkorb. Below the sidebar, it says 'ne Tags vorhanden' (no tags available).

A dialog box titled 'Einträge auswählen' (Select entries) is open in the foreground. It contains the text 'Auswählen, welche Artikel zu Ihrer Bibliothek hinzugefügt werden sollen' (Select which articles to be added to your library). The dialog lists four articles, all of which are checked:

- GfK-Konsumklima: Deutsche in Kaufstimmung, Sparen ist out
- An APL-tutoring Adventure Game
- A Social Location-Based Emergency Service to Eliminate the Bystand...
- An update algorithm for restricted random walk clustering for dynam...

At the bottom of the dialog, there are buttons for 'Select All', 'Deselect All', 'Abbrechen' (Cancel), and 'OK'.

ance of a large number of location-based services ({LBS}). While {LBSs} are mostly developed for supporting travel
he problem of getting help in a crowd has been addressed by
can overcome these obstacles by activating the social group
will discuss several ways to develop an emergency alert servi
dered while implementing a prototype. A feasibility assessme

▼ Alle Felder und Tags LitObject Middlev

Infos Notizen Ta

ulz et al.
Geyer-Schulz
ulz et al.

Ei

(...) Zusammen
Pu

Speichern nach 📁 test-import...

- 📄 GfK-Konsumklima: Deutsche in Kaufstimmung, Sparen ist out
- 📎 Anhang
- 👤 An APL-tutoring Adventure Game
- 📎 Anhang
- 📖 A Social Location-Based Emergency Service to Eliminate the Bystander Effect
- 📎 Anhang
- 📎 Anhang
- 📄 An update algorithm for restricted random walk clustering for dynamic data sets
- 📎 Anhang
- 📎 Anhang

Ausgabe: 1

▼ Alle Felder und Tags

Titel	Ersteller	
▼ An APL-tutoring Adventure Game	Geyer-Schulz et al.	•
📄 Geyer-Schulz et al. - 1989 - An APL-tutoring Adventure Game.pdf		•
▼ An update algorithm for restricted random walk clustering for dynamic dat...	Franke und Geyer-Schulz	•
📄 An update algorithm for restricted random walk clustering for dynamic ...		•
📄 Franke und Geyer-Schulz - 2009 - An update algorithm for restricted r...		•
▼ A Social Location-Based Emergency Service to Eliminate the Bystander Ef...	Geyer-Schulz et al.	•
📄 A Social Location-Based Emergency Service to Eliminate the Bystander...		•
📄 Geyer-Schulz et al. - 2012 - A Social Location-Based Emergency Servi...		•
▼ GfK-Konsumklima: Deutsche in Kaufstimmung, Sparen ist out		•
📄 GfK-Konsumklima: Deutsche in Kaufstimmung, Sparen ist out - SPIEGE...		•

60J20 62H30

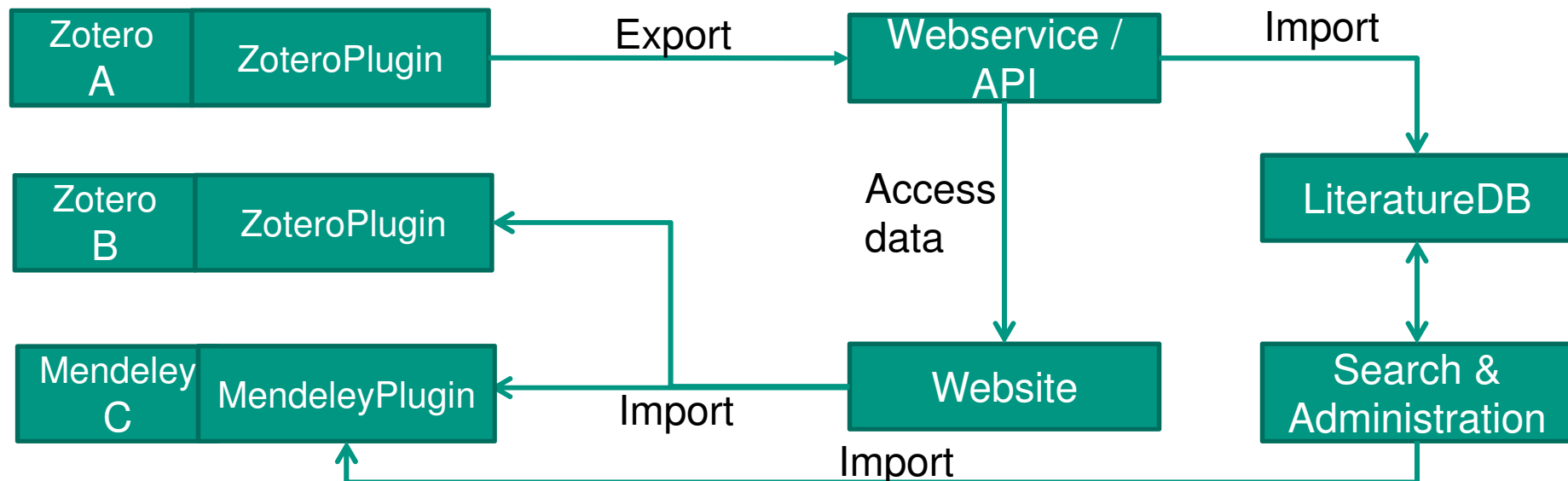
Challenges

Creation

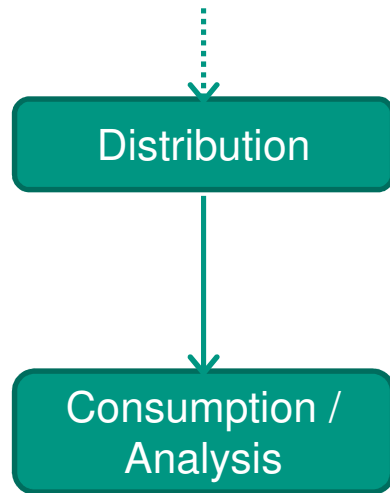
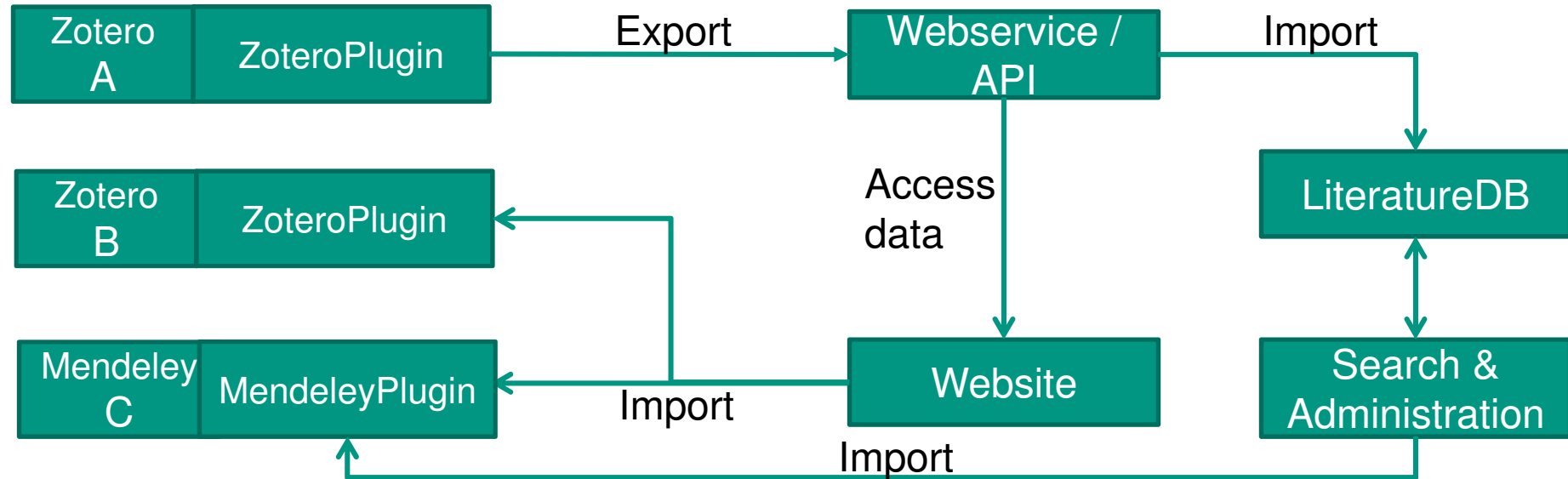
Scientific Quality Management

- How to **rediscover** past literature searches?
- How to **share** and **persist** literature searches?
- How to **work together** with regard to literature?

- Do the work of the author(s) again for reviews?
- Time-consuming **reference and content checks**
- What about **interoperability** between various software tools?
- How to **store cited literature** permanently?

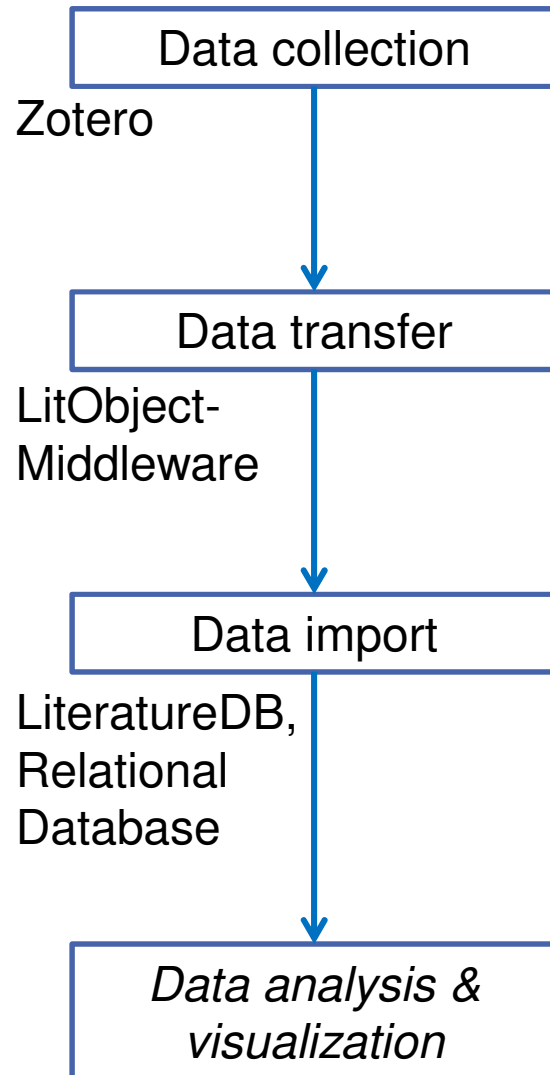


Challenges



- How to provide “good” **reference metadata and links to attachments**?
- How to collect and use collected metadata for further usage e.g. **citation networks**?
- How to consume “good” **reference metadata and links to attachments** with various literature management approaches?

Cogeneration of citation networks – Generic process



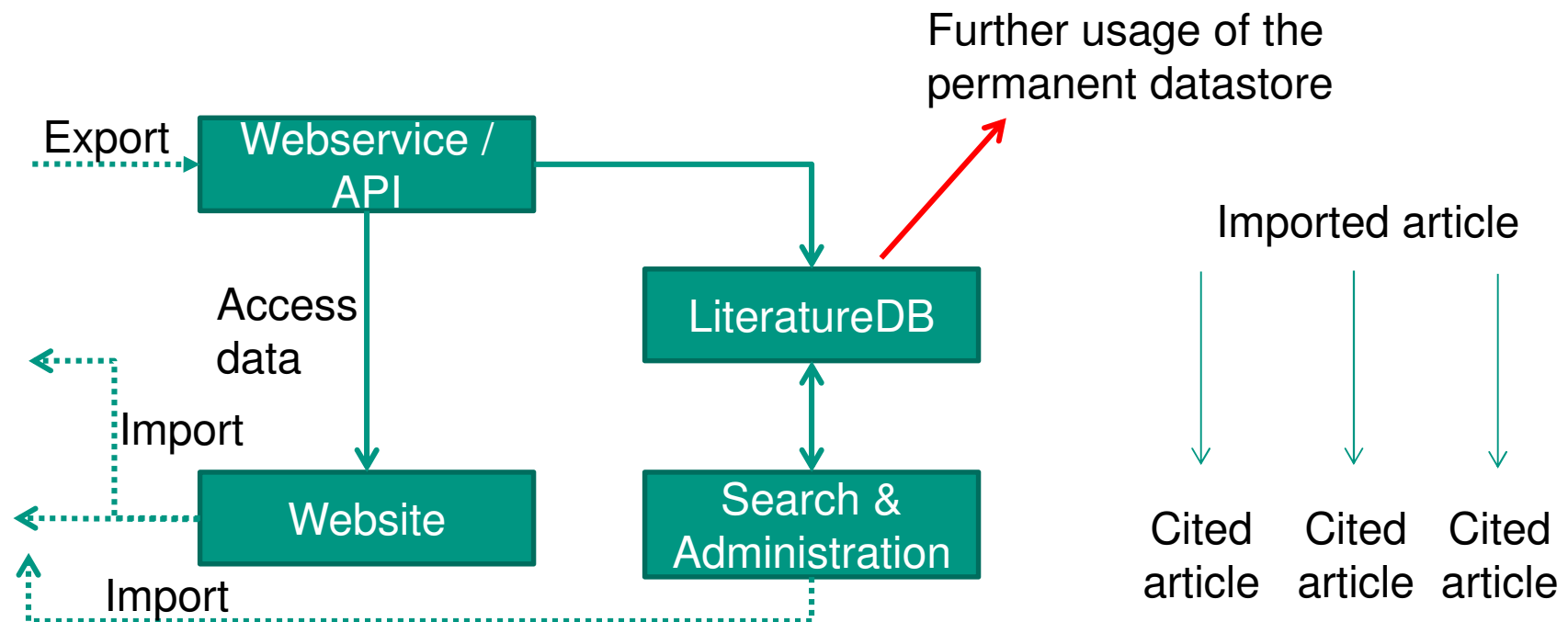
Authors/Users: Search, retrieve, check and organize literature
→ **Quality management shifted to the individual**

Client-side software: Export references and attachments to a web-service for further use
→ **Software supported transfer of structured data (links)**

Server-side software: Import to link tables as data basis for citation graph analysis and algorithms
→ **Using the LitObject Middleware for a growing data basis with individuals' support in checking and organizing**

Using a co-generated growing data basis for analysis, visualization
→ *Not covered today*

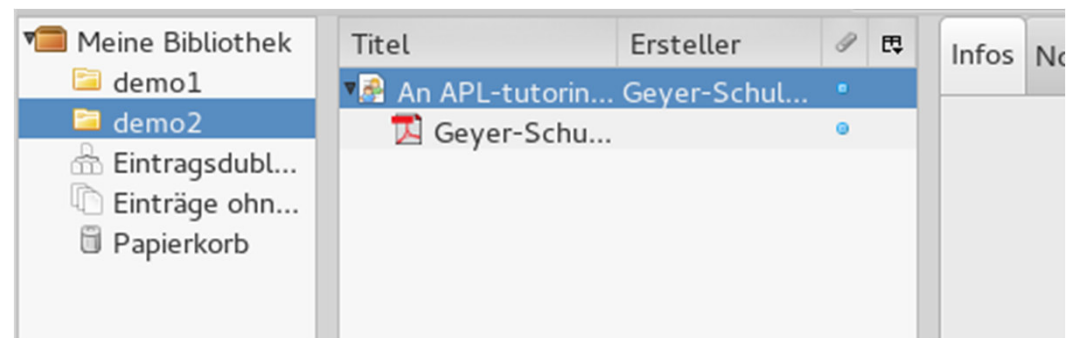
Cogeneration of citation networks



Step-by-Step co-generation

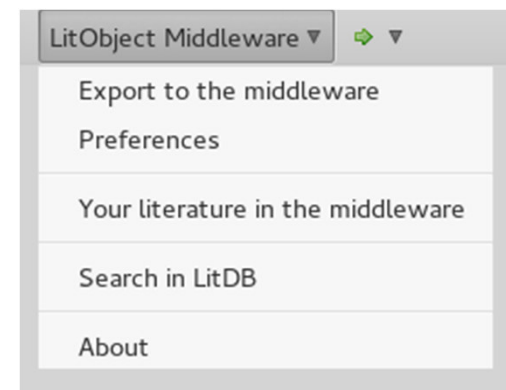
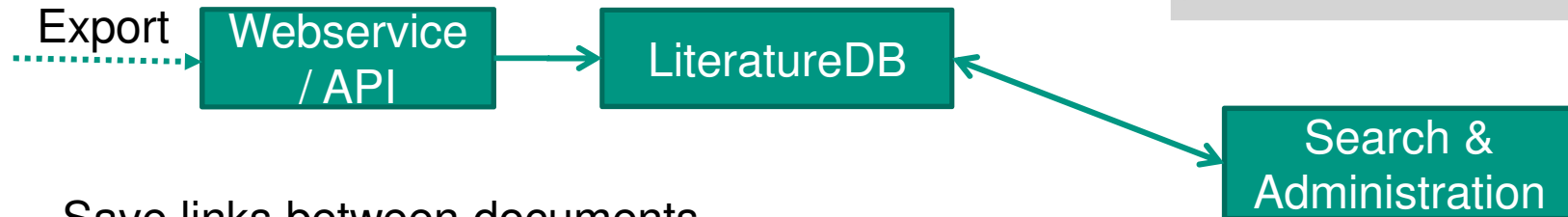


2. - Save all cited literature in one collection
- Save all collected literature for the topic in another collection



Step-by-Step co-generation

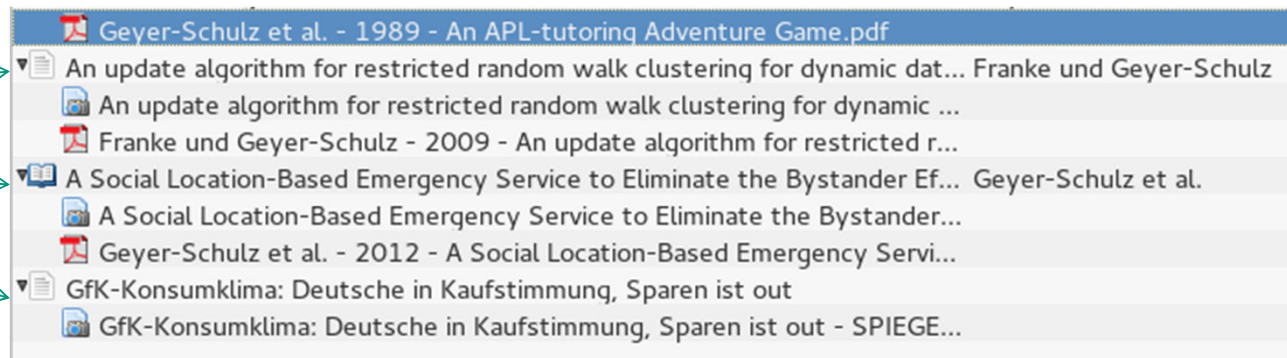
3. - Export both collections to the webservice



4. - Save links between documents
- During the import in the LiteratureDB save additionally a new document - that is the article newly written.
 - Save additionally a link from the newly written document (the additional document) to each document in both collections

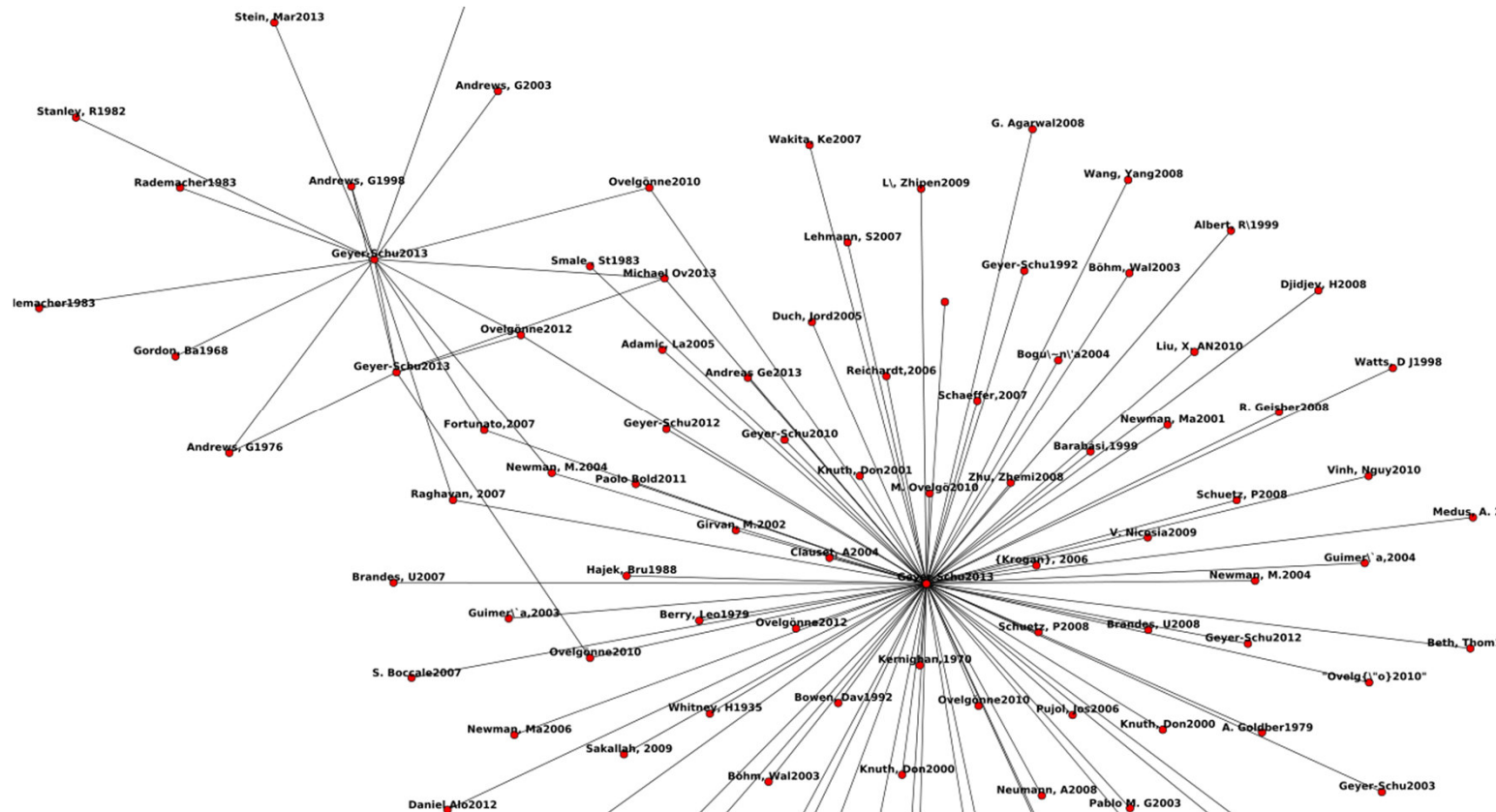


New article



Step-by-Step co-generation

5. - Use the growing, cogenerated link database for further applications and visualizations
6. - Work in progress:
 - Provide an API for automatic graph generation
 - Provide an API for automatic citation data export in various formats



Future Work

- Imported references are not validated
 - E.g. how to detect/solve misspelled author names?
 - Sometimes reference and attachment do not match

- Duplicates detection is future work
 - Currently limited to a single user duplicates detection on client-side

- User Management exists only on an elementary level

- Process improvements using the LitObject middleware
 - Use the LitObject middleware for advanced publication and review processes.
 - Use the LitObject middleware for private institutional repositories
 - Provide an automated citation network graph generation and structured linked data export.

Future Work

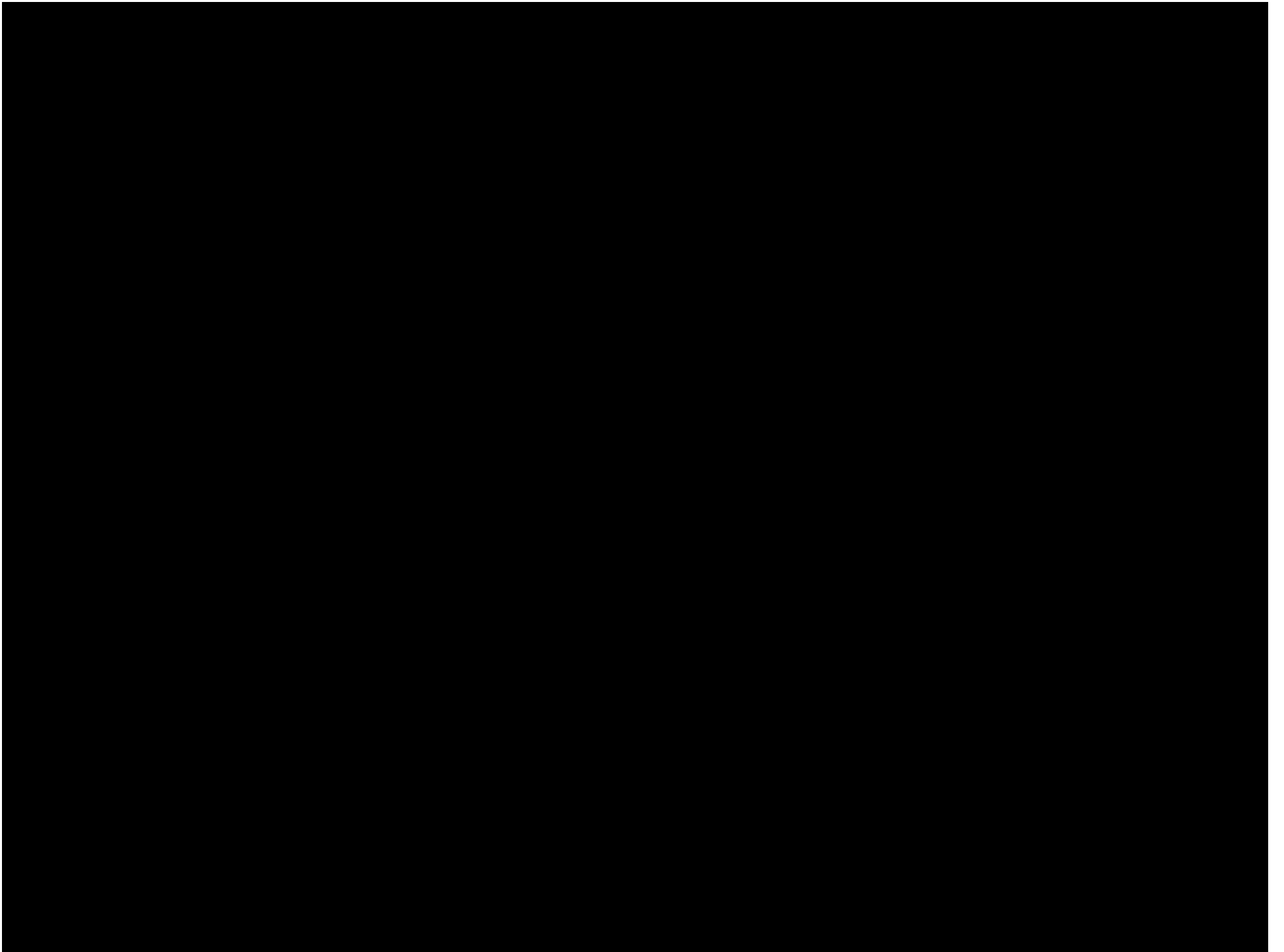
- Support more literature management tools
 - Mendeley is on top of the agenda.
 - An HTML5 online interface for organizing literature is planned.
- Developing new services on top of the LitObject middleware
 - Implement classification algorithms that use the LitObject middleware objects (reference and fulltext document)
 - Implement and test recommendation algorithms.
- Discuss/implement how to provide references and links to fulltext documents for common literature management software
- Publish a small open-source literature database as organization internal persistence unit.

Summary

- The LitObject middleware helps to share literature objects consisting of references and attachments
 - Basis tool for developing advanced processes that include literature
 - Basis tool for developing new applications that use the structured literature data in the webservice

- Possibility to shift workload to authors/literature organizers and reduce duplicate work
 - No manual reference transfer throughout the publication process chain.
 - Chance to build up a database of checked, correct references that can be used from authors again.

- Import step for literature management software through websites needs further development instead of new web translators every time.
 - Maybe unAPI v2



Backup

How to import LitObjects

- There exist various metadata formats for exposing metadata to literature management tools through websites:
 - CoIns (ContextObjects in Spans)
 - DublinCore Metadata tags: dc.*
 - Eprints tags: eprints.*, PRISM tags: prism.*, etc.
 - MODS XML, Marc21, MAB, etc.
 - BibTex, RIS

- Highwire Press Keys: citation_*
 - Field for linking to the fulltext attachment: [citation_pdf_url](#)

- **Lesson learnt:** Either good metadata and no link to literature attachments or bad metadata and links to literature attachments

Good = Export a BibTeX reference to another format, import and convert it back to BibTeX without too much information loss.

A small extension for unAPI

- unAPI by Daniel Chudnow, 2006
 - Link to common reference formats instead of translating to other microformats before

1. Embed a resolver service

```
<html lang="en">
  <head>
    [...]
    <link rel="unapi-server" type="application/xml" title="unAPI"
      href="http://localhost:5050/unapi/demo1" />
  </head>
  [...]
```

2. Link by using identifiers to the service

```
<abbr class="unapi-id" title="UP9MJ5F6">
  <a href="http://localhost:9000/demo1/[...]/content_one"></a>
  <a href="http://localhost:9000/demo1/[...]/content_two"></a>
</abbr>
```

New: Add links to documents/fulltext attachments

Zotero's priority order for choosing importers

Embedded Metadata	400
DOI	300
Colns	250
unAPI / Highwire	200

Specific Web Translator (individual simple crawler for each specific site)



Embedded Metadata (<meta> keys in <head> section)



Resolve DOI



Colns



unAPI

Example for ContextObjects in spans

```
<span class='Z3988' title='url_ver=Z39.88-2004&
  ctx_ver=Z39.88-2004&
  rfr_id=info%3Asid%2Fzotero.org%3A2&
  rft_id=urn%3Aisbn%3A978-3-642-25205-1%2C%20978-3-642-25206-8&
  rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Abook&
  rft.genre=bookitem&
  rft.atitle=A%20Social%20Location-
Based%20Emergency%20Service%20to%20Eliminate%20the%20By [...] ct&
  rft.btitle=e-Business%20and%20Telecommunications&
  rft.publisher=Springer%20Berlin%20Heidelberg&
  rft.series=Communications%20in%20Computer%20and%20I [...] &
  rft.aufirst=Andreas&
  rft.aulast=Geyer-Schulz&
  rft.au=Andreas%20Geyer-Schulz&
  rft.au=Michael%20Ovelg%C3%B6nne&
  rft.au=Andreas%20C.%20Sonnenbichler&
  rft.au=Mohammad%20S.%20Obaidat&
  rft.au=George%20A.%20Tsihrintzis&
  rft.au=Joaquim%20Filipe&
  rft.date=2012-01&
  rft.pages=112%E2%80%93130&
  rft.isbn=978-3-642-25205-1%2C%20978-3-642-25206-8&
  rft.language=en'>
</span>
```

unAPI Details

```
<link rel="unapi-server" type="application/xml" title="unAPI"
href="http://localhost:5050/unapi/demo1" />
```

■ Get the available formats

```
<abbr class="unapi-id" title="UP9MJ5F6">
  <a href="http://localhost:9000/demo1/[...]/content"></a>
  <a href="http://localhost:9000/demo1/[...]/content"></a>
</abbr>
```

```
GET http://localhost:5050/unapi/demo1?id=7QZM2MXJ
```

```
<formats>
  <format name="bibtex" type="text/plain"/>
</formats>
```

■ Get the metadata in one of the available formats

➔ `http://localhost:5050/unapi/demo1?id=7QZM2MXJ&format=bibtex`

A full graph of our private link database

