



A global approach to digital libraries evaluation

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of Glasgow

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Summary

A global approach to digital libraries evaluation

- Key issues and definitions
- Background and related work
- Pre-existing evaluation models
- Research questions and hypotheses
- Modelling a LIS oriented framework
- Conclusions



Introducing the issue

A global approach to digital libraries evaluation

- DLs are complex entities
- DLs are synchronic entities, a longitudinal analysis is difficult and often impossible
- DL evaluation is interdisciplinary
- DL evaluation is questioned
- DL evaluation research is needed



Reference definitions of DL

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- Waters, 1998 (DLF 2002)

Digital libraries are organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities

- DELOS, 2006

A possibly virtual organization that comprehensively collects, manages, and preserves for the long term rich digital content, and offers to its user communities specialized functionality on that content, of measurable quality and according to codified policies



Reference LIS background

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*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.*

Ranganathan's Five laws of Library Science (1931)

What happens if we call the books "documents", the reader "end-user" and the library "DL"?



Related work overview (i)

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Background concepts and models sources:

- LIS studies (services, organisation, metadata creation)
- IR studies (search engines, metadata management)
- HCI studies (user interfaces)



Related work overview (ii)

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- Marchionini (2000) proposes the application of the same techniques and indicators used for traditional libraries, such as **circulation, creation and growth of collections, user data, user satisfaction, and financial stability** indicators
 - Saracevic (2000) highlights the need to focus on the DL **mission and objectives**. Considering evaluation as the **appraisal of the performance** or functioning of a system, or part thereof, in relation to some objective(s), the performance can be evaluated as to:
 1. **effectiveness** (how well does a system do what it was designed for?)
 2. **efficiency** (at what cost, in terms of money or time?)
 3. a combination of these two (i.e. **cost-effectiveness**)
- indicating two evaluation levels:
- **user-centered level** (which can be social, institutional, individual or focused on the interface)
 - **system-centered level** (which can be focused on engineering, processing or content)



Related work overview (iii)

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- Reeves, Apedoe and Woo (2003) propose some guidelines to evaluate DLs, focusing on the **decision process** that is behind any evaluation
- Chowdhury and Chowdhury (2003) highlight the need to focus on the DL **the global impact** that a DL has on its **users** and on **society**, integrating LIS, IR, and HCI criteria
- Saracevic (2004) states that **DLs are still too difficult** for the general public to use, although they can have a far-reaching impact on education, on scholarly research publishing and on society



DL evaluation within European projects

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- DELOS Evaluation Schema (2001) dimensions:
 - data/collection
 - system/technology
 - users/uses

Quality: *the parameters that can be used to characterise and evaluate the content and behavior of a DL. Some of these parameters are objective in nature and can be measured automatically, whereas others are inherently subjective and can only be measured through user evaluations (e.g. in focus groups)*

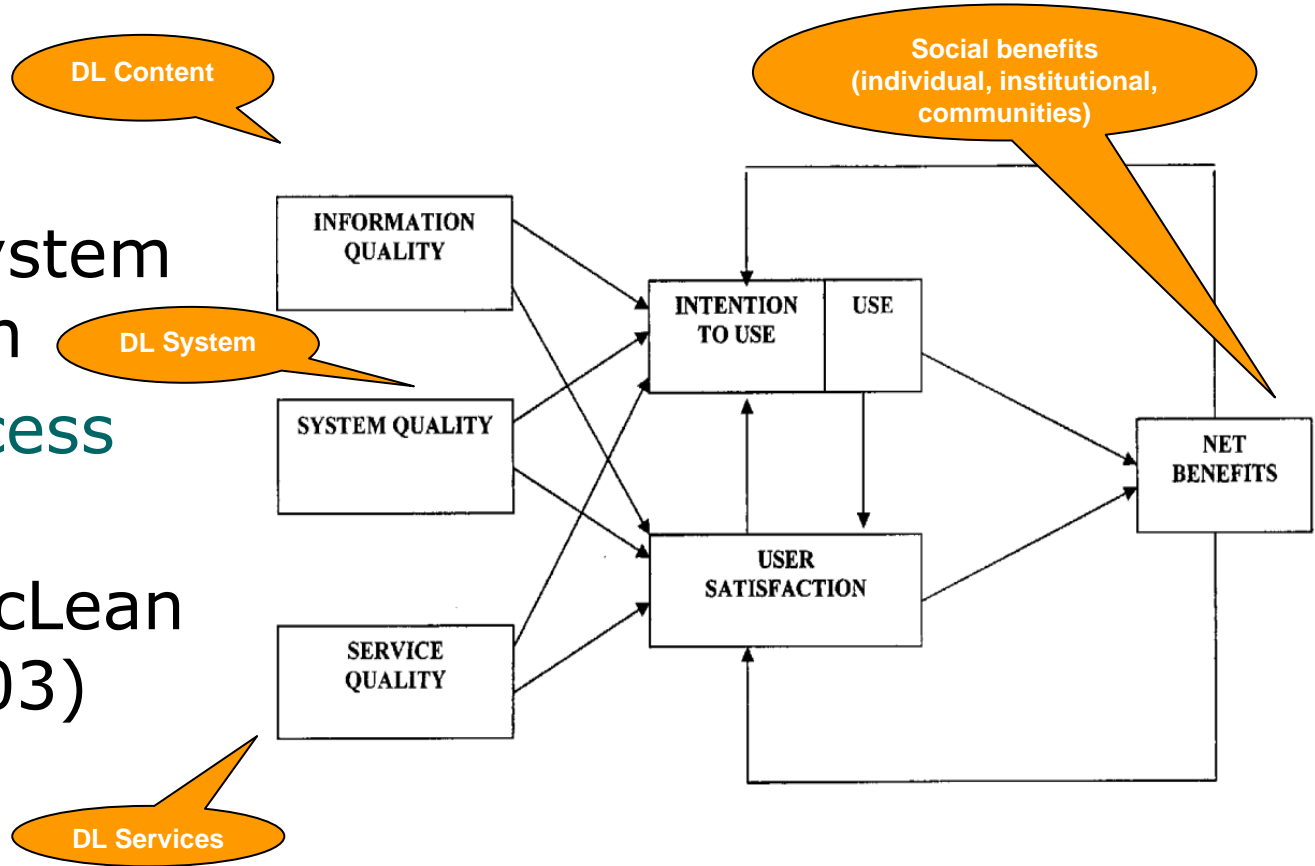
- DL.org (2009-2010)

Investigation of interoperability solutions, considering the DELOS DL six domains (Architecture, User, Content, Functionality, Policy and Quality)

Integrated evaluation models (i)

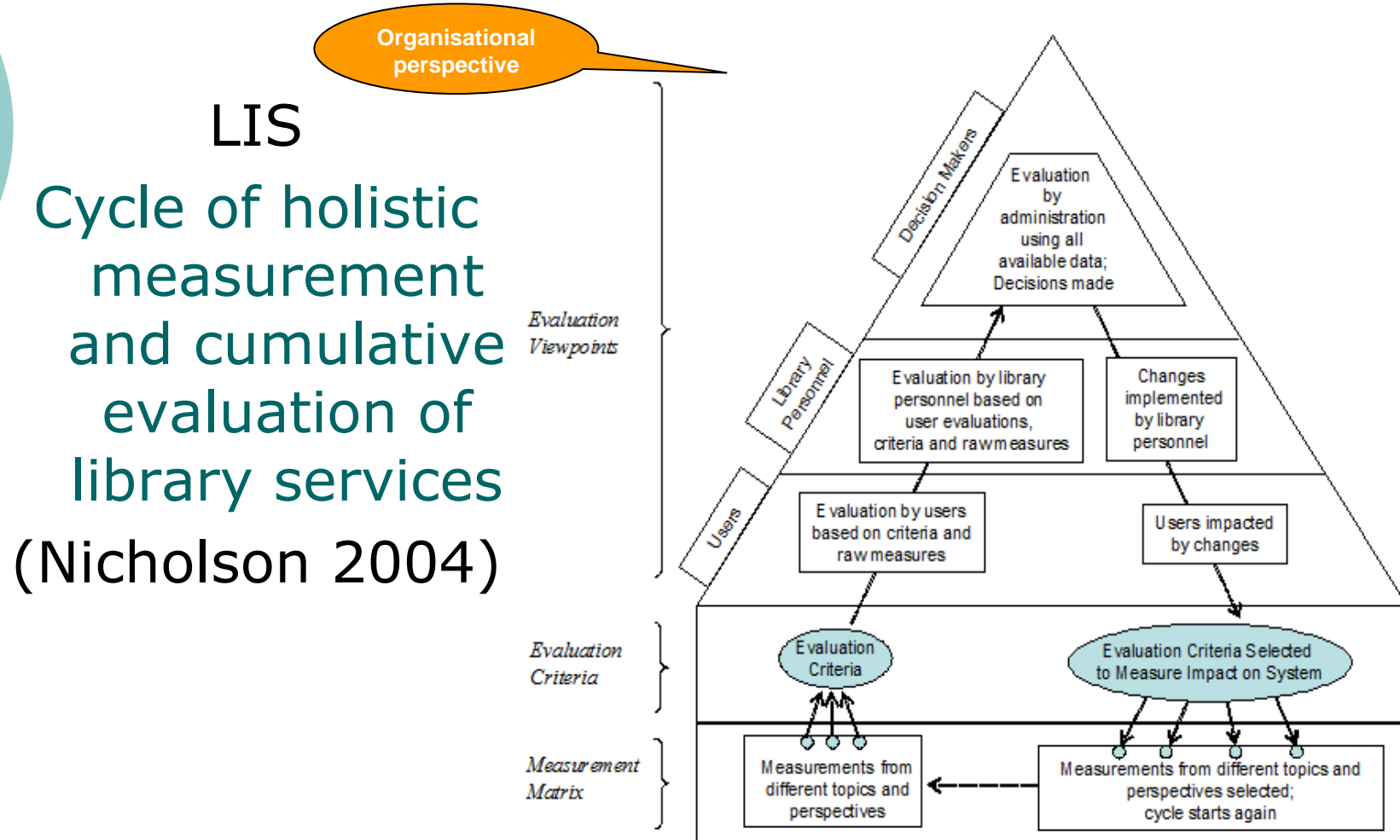
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Information system
research
D&M IS Success
Model
(Delone and McLean
1992, 2003)



Integrated evaluation models (ii)

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Integrated evaluation models (iii)

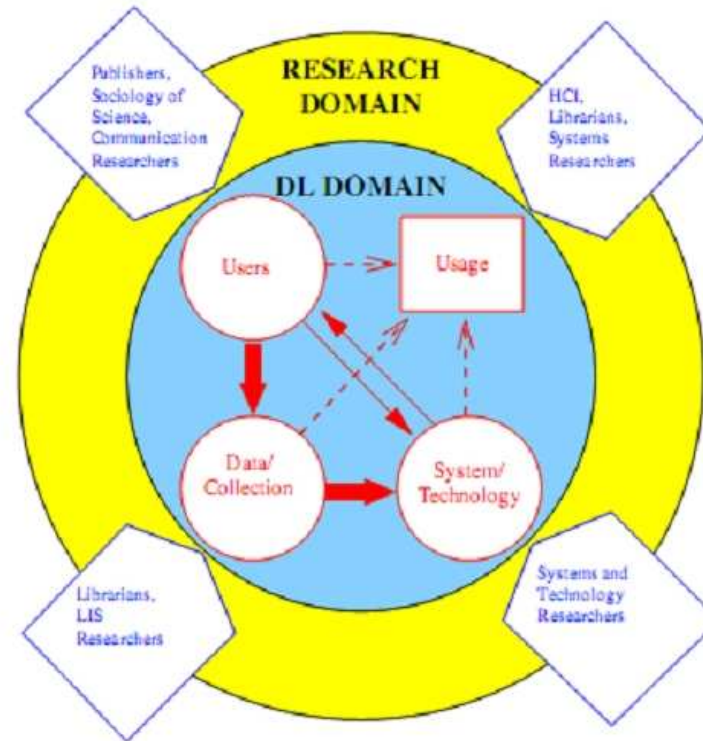
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Where are the library managers and the policy-makers?

Computer science

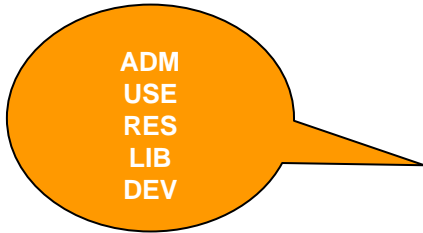
A generalised schema for a digital library

(Fuhr et al., 2001)



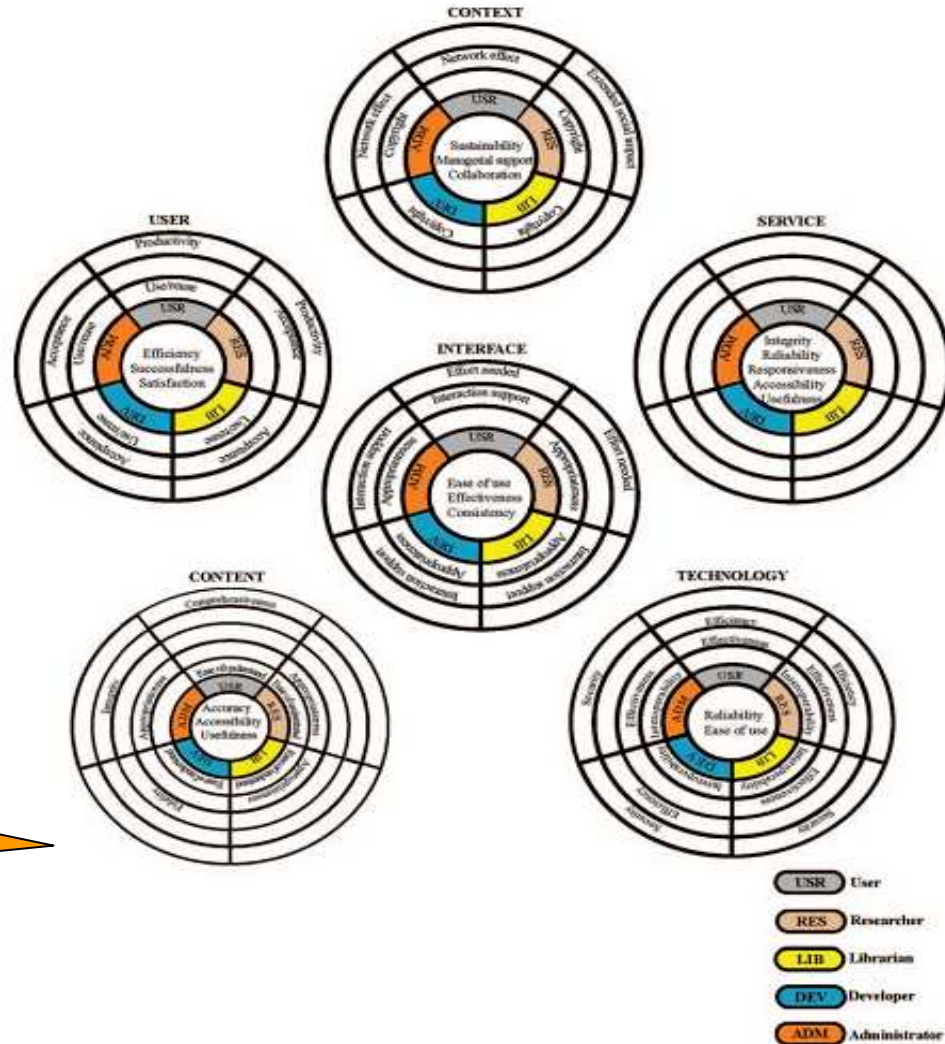
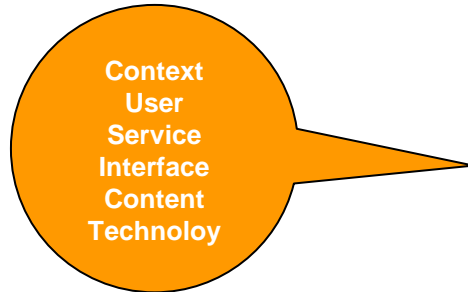
Integrated evaluation models (iv)

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LIS

Holistic DL
Evaluation Model
(Zhang, 2010)





Research questions (i)

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- Need to look at DL evaluation models and to compare them with an integrated approach
- Need of a feasible (and simple) qualitative framework to allow comparisons and cooperation
- Need to link the theoretical models to reality

considering

- DL as a unique entity
- DL qualitative evaluation
- Holistic models of DL evaluation
- System vs user perspectives



Research questions (ii)

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- Is a global approach to DL evaluation possible?
- Who are the actors that are involved in DL evaluation?
- Who needs the results from DL evaluations?
- How should we make quality procedures routine?
- How should we enable interoperability between qualitative DL evaluations?



Further hypotheses

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- A common evaluation framework would avoid duplication of efforts and facilitate the exchange of materials under a comprehensive background
- Librarians, researchers and society need DL evaluation as a fundamental part of any DL project
- Qualitative DL evaluations would be more effective as regular activities
- There's a need to make evaluation experiences comparable and interoperable



Perspectives and proposed methodology

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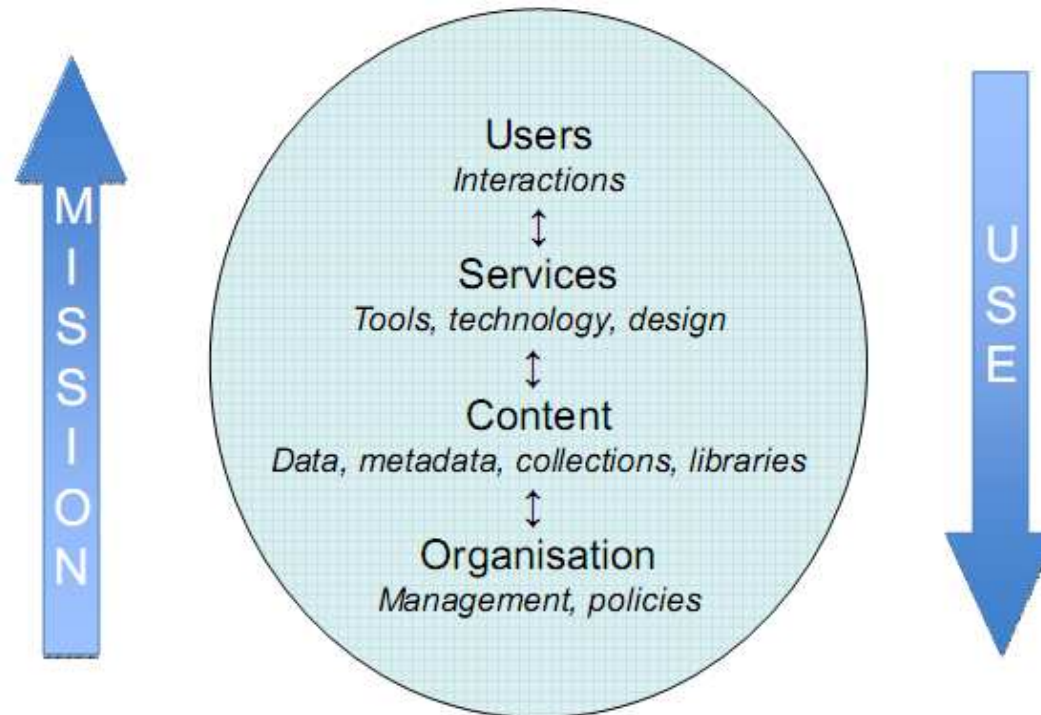
In any information system, quality can be measured from a

System perspective (internal view), focused on design and operation

User perspective (external view), focused on use and value (Wand & Wang, 1996)

Modelling a LIS conceptual framework

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Users' evaluation criteria (Xie 2006, 2008): ease of use, collection quality, service quality, system performance, usability; ARL's DigiQUAL
System perspective: guidelines, best practices, certifications,
for the digital repositories and digital preservation worlds: DRIVER, DINI, TRAC, DRAMBORA



Digital libraries metrics tools

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- **EQUINOX** - Library Performance Measurement and Quality Management System (<http://equinox.dcu.ie>): set of specific performance indicators (2000) to enhance the traditional library services ones presented in ISO 11620. 14 performance indicators, a consolidated list of datasets, a glossary and a list of collection methodologies (<http://equinox.dcu.ie/reports/pilist.html>)
- **D-Lib Working Group on Digital Library Metrics** (<http://www.dlib.org/metrics/public/metrics-home.html>): “The DLib Test Suite”, a standard sets of data for quantitative and comparative research + DL performance indicators
- Within ARL, **DigiQUAL** (<http://www.digiqua.org/digiqua/index.cfm>) is a standard methodology to measure DL service quality, and is grounded on LibQUAL protocol (<http://www.libqual.org/home>), which is used to measure service quality by traditional libraries



Conclusions

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- No common agreement on how to globally evaluate DLs
- DL evaluation generally unfunded, quality is a low-prioritized issue
- No general models embraced yet
- Researchers vs professionals, librarians vs ITs
- Small fraction of works dedicated to DL evaluation
- Several assessment methodologies, different aims
- Qualitative frameworks needed



Many thanks

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THANK YOU 😊

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