DL Interoperability

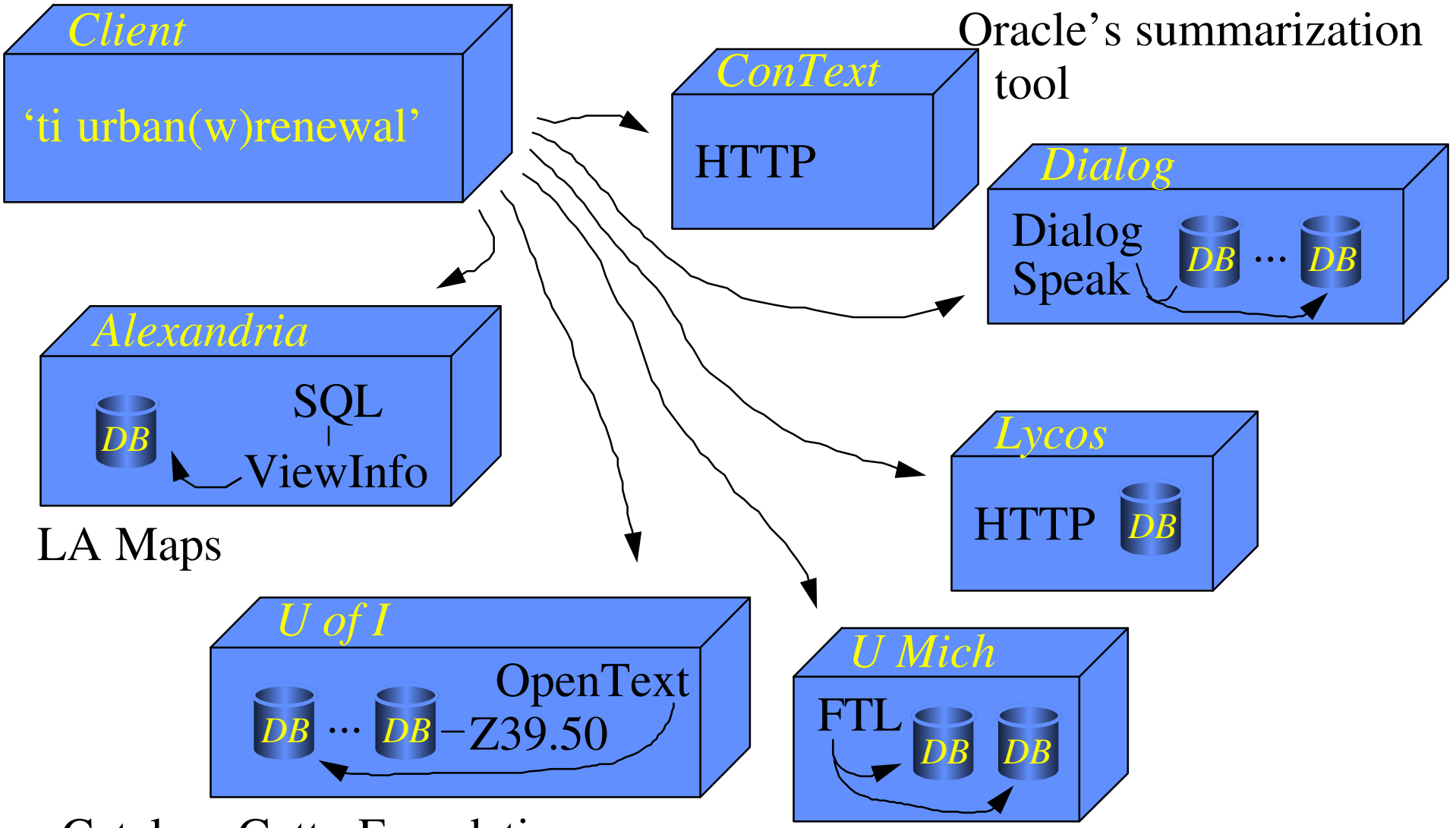
Status

A Problem

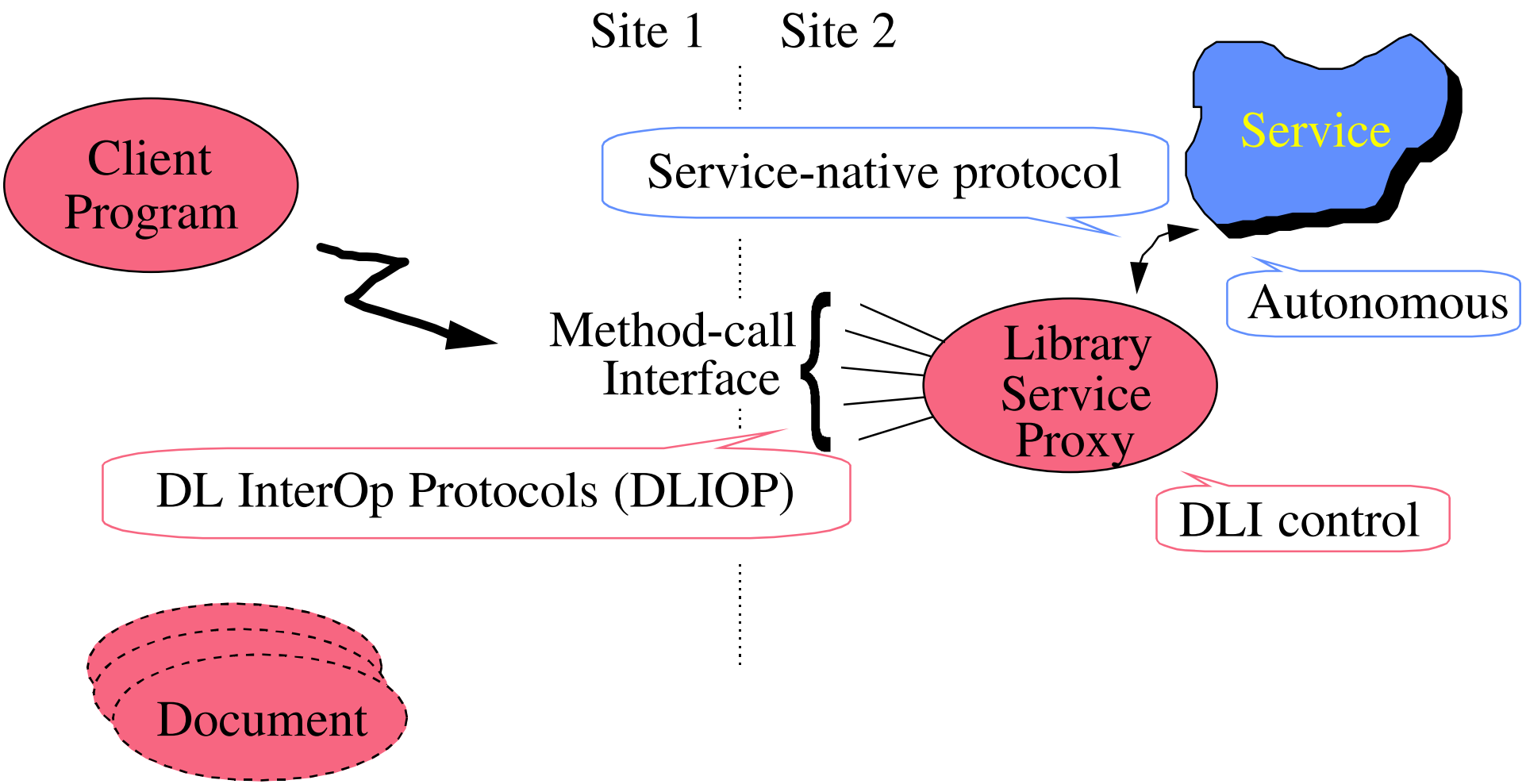
Learn about urban renewal

- Resource discovery: finding effective sources
- Formulating queries: syntax/schema/features
- Submitting queries to selected sources
- Making documents locally manipulable
- Payment/copyright protection
- Duplicate removal
- Making sense of doc structure/doc evaluation

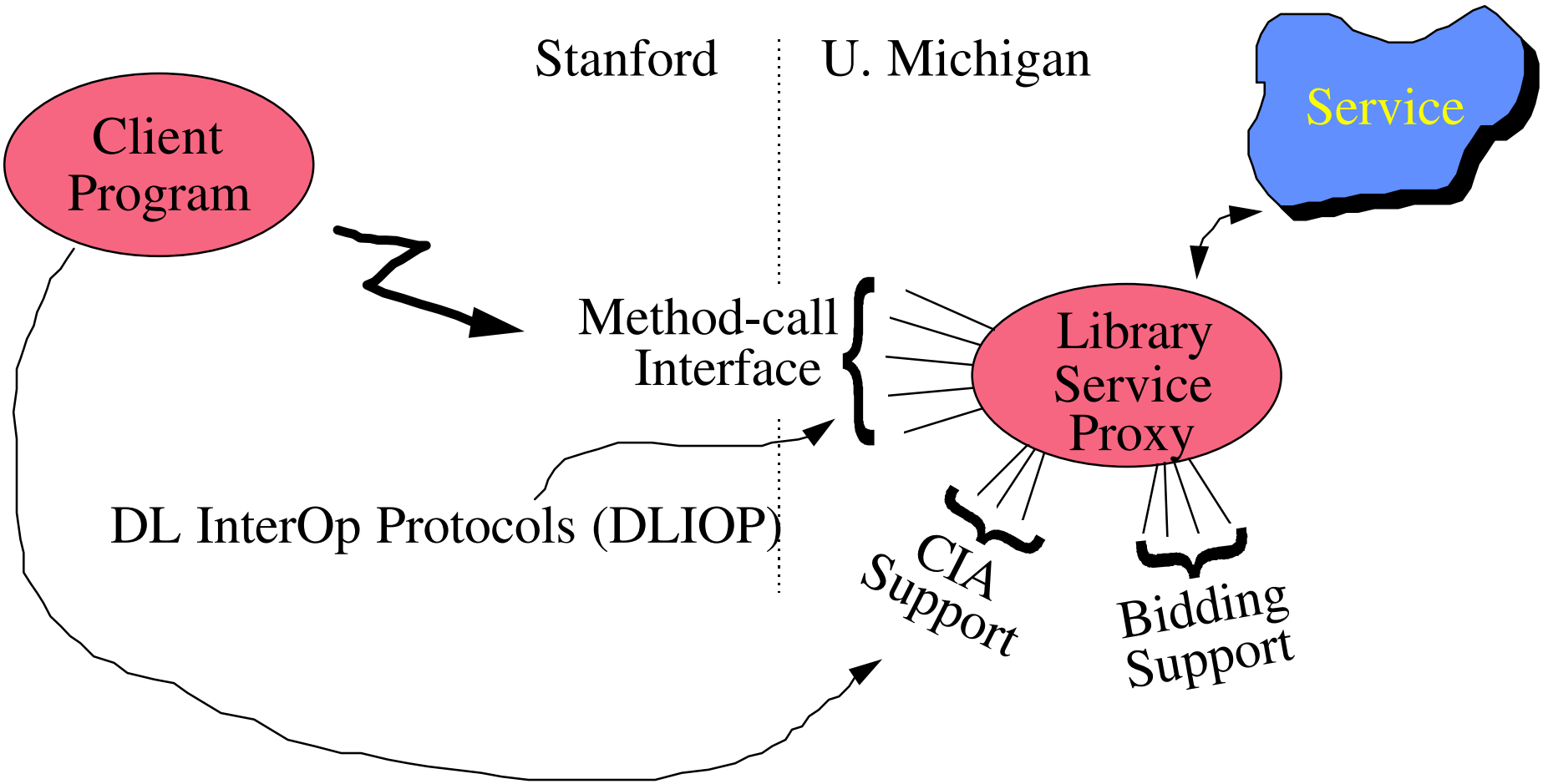
An Ugly Scene



Technology: CORBA Distributed Objects



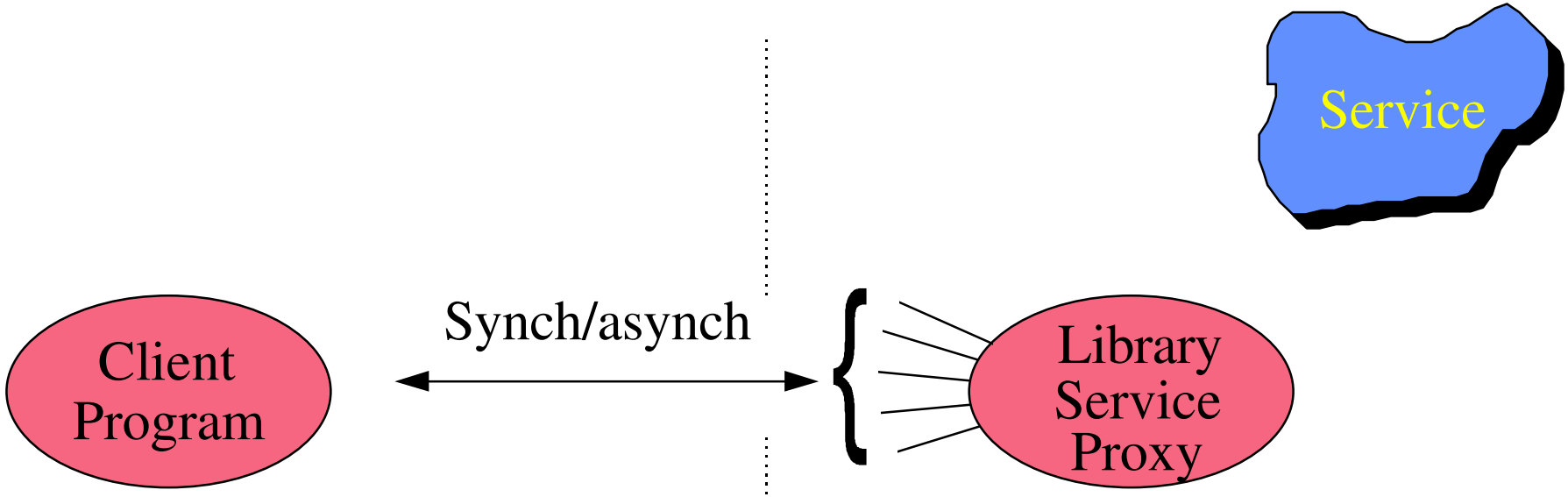
Preserve Local Research Flexibility



DLIOP Goal: Flexibility

System Behavior	HTTP	Z39.50
State maintenance	client	server
Sessions	no	yes
Policies sensitive to link speed	no	no
Synch/asynch	synch	both
Fixed/negotiated protocol	fixed	neg
Fixed/negotiated doc formats	none	neg

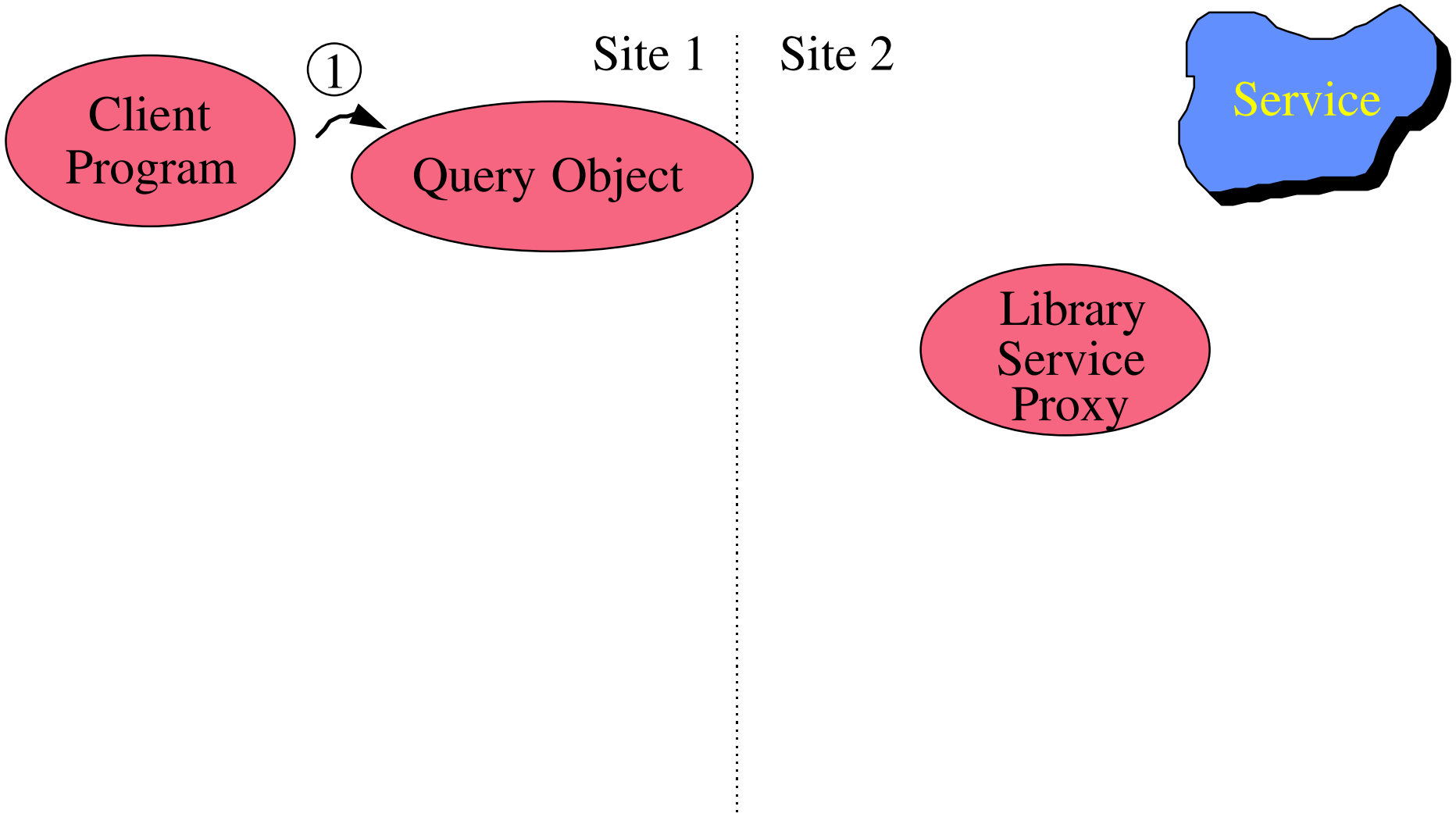
DLIOP Flex Points
Preserving Implementation Discretion

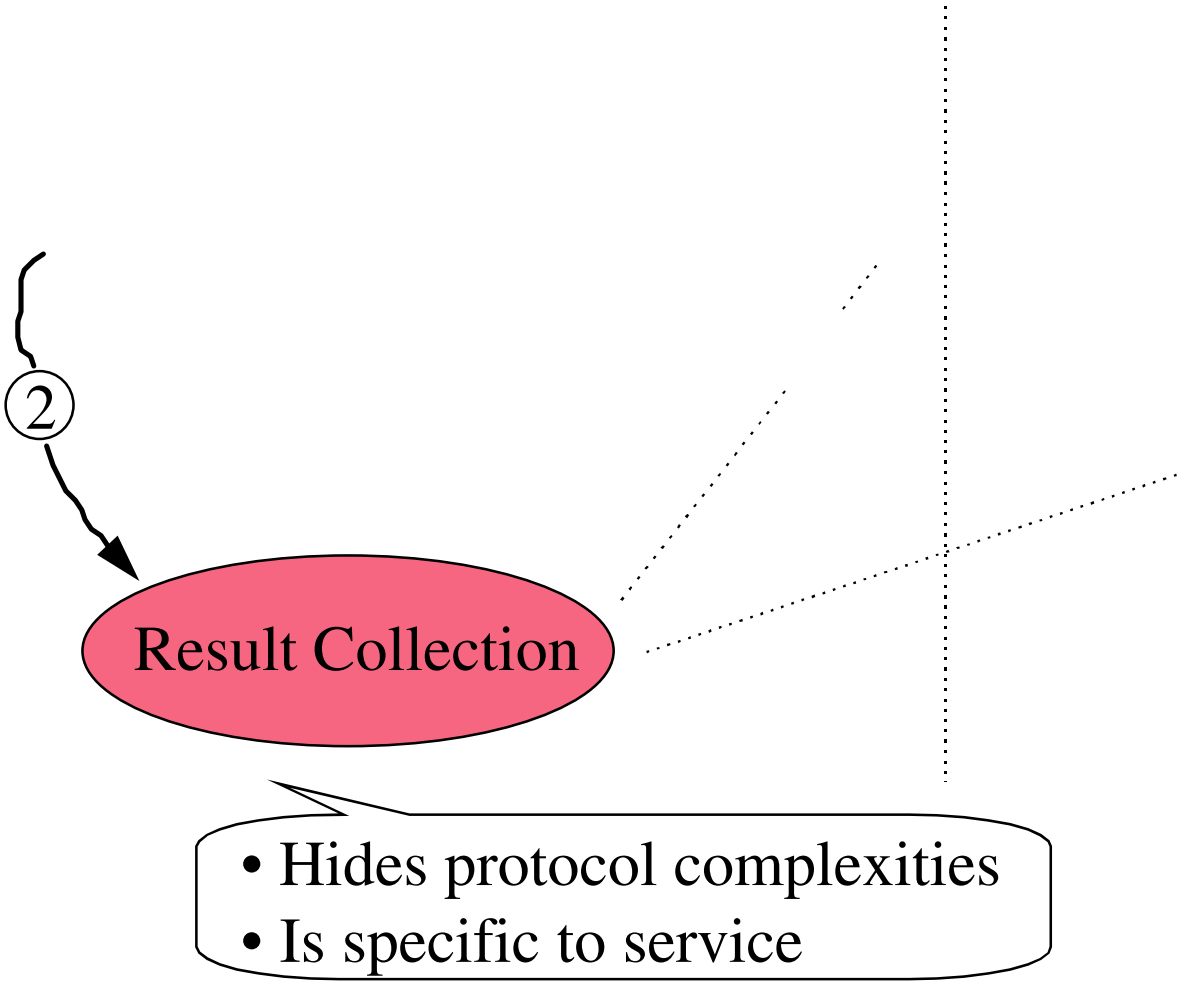


- Lazy instantiation/materializaton
- Short vs. long-term doc access
- Simple client program interface

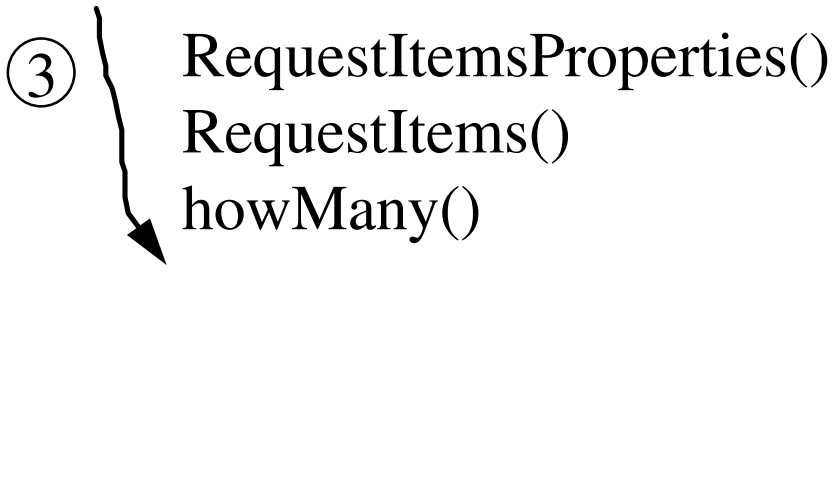
- Optional server result cache
- Discretionary cache discard
- Dynamic load balancing
- Minimization of long-haul xfers
- Server-side trust/accounting
- Interface augmentable

Client View of Querying

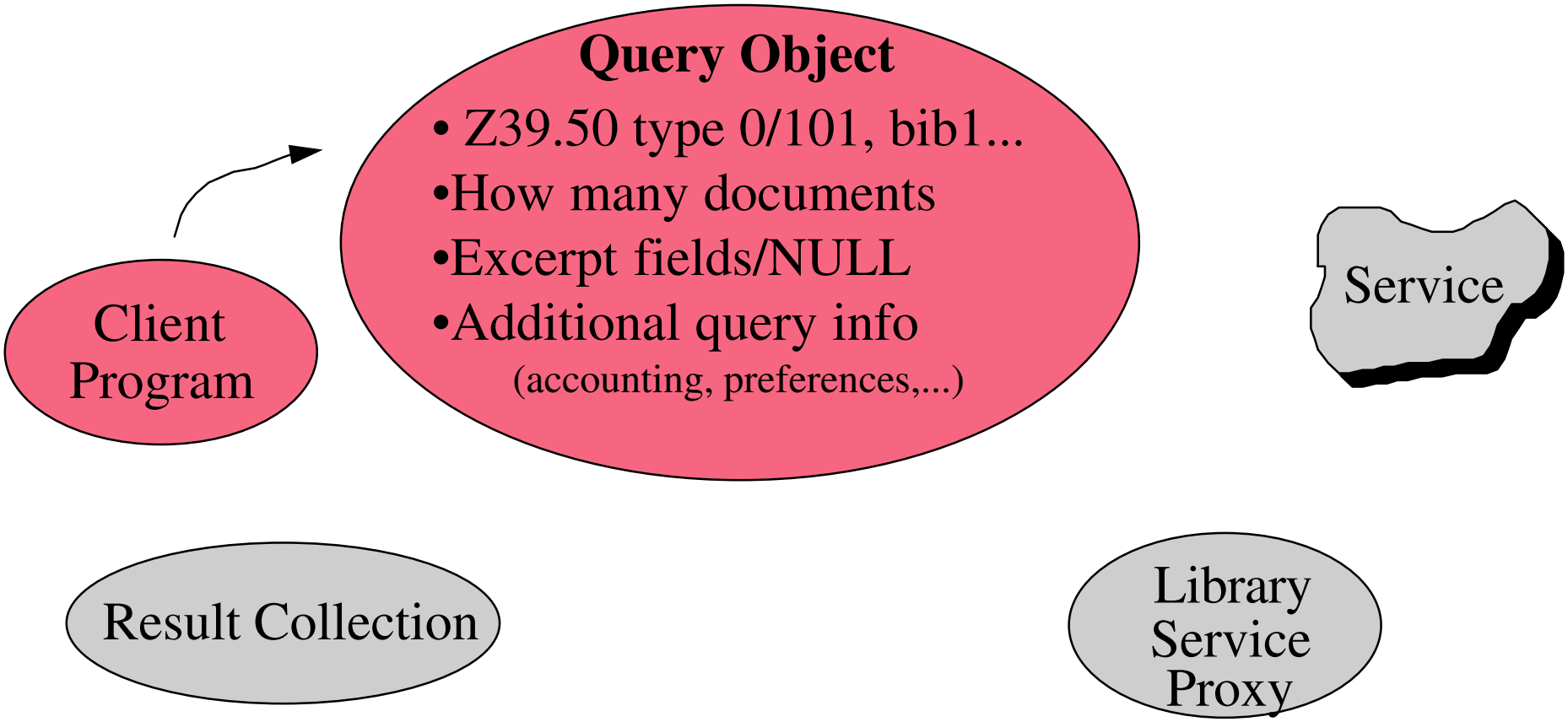



2
Result Collection
• Hides protocol complexities
• Is specific to service

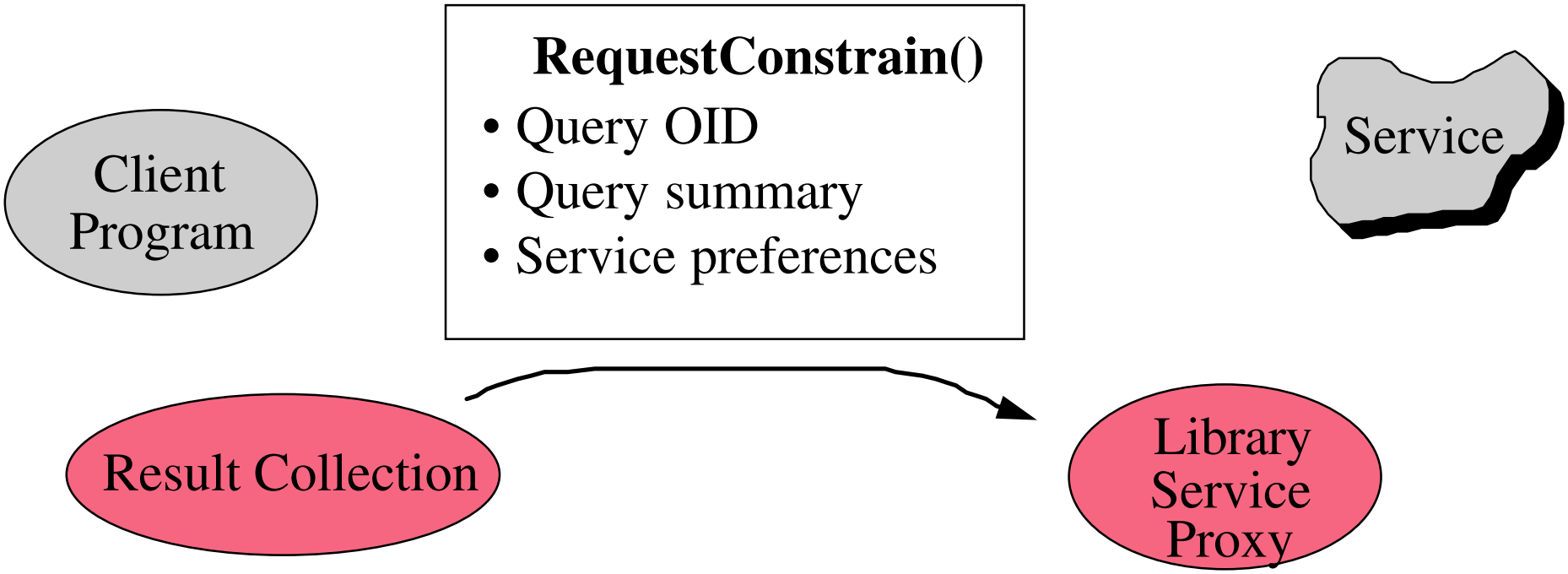
Querying: Continued



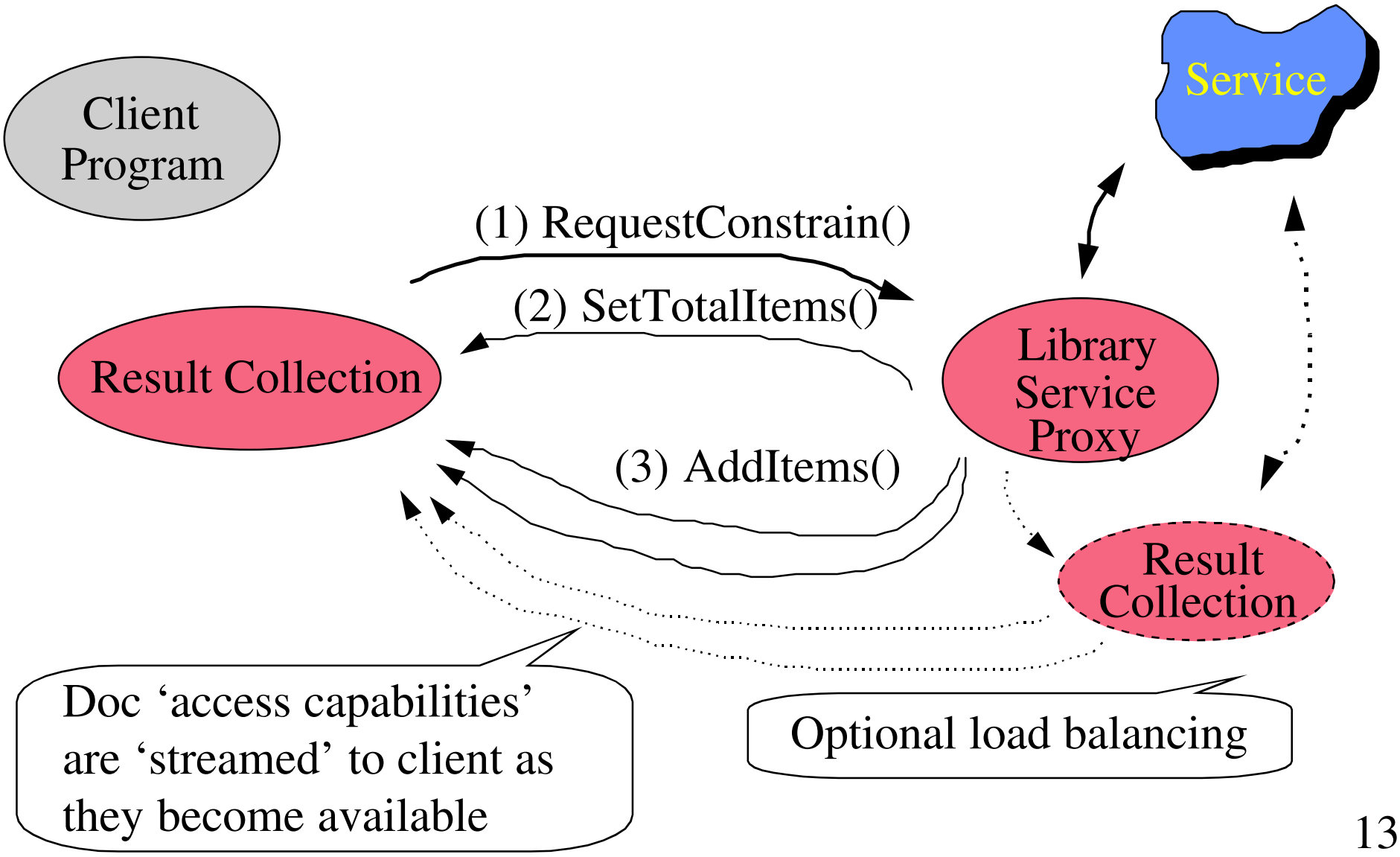
A Query


Query Object
• Z39.50 type 0/101, bib1...
•How many documents
•Excerpt fields/NULL
•Additional query info
(accounting, preferences,...)
Client Program
Service
Result Collection
Library Service Proxy

Getting the Results (1/3)



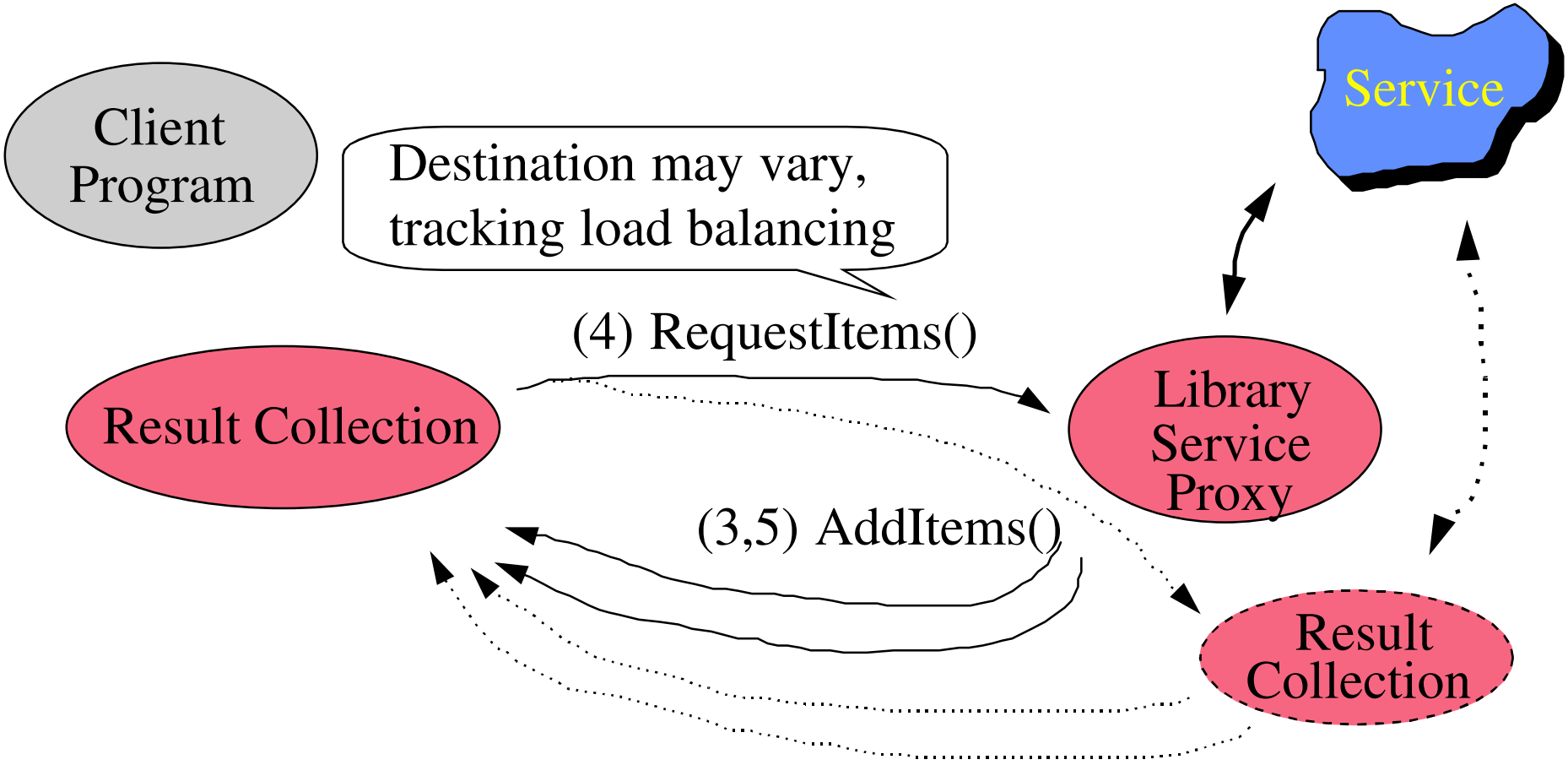
Getting the Results (2/3)



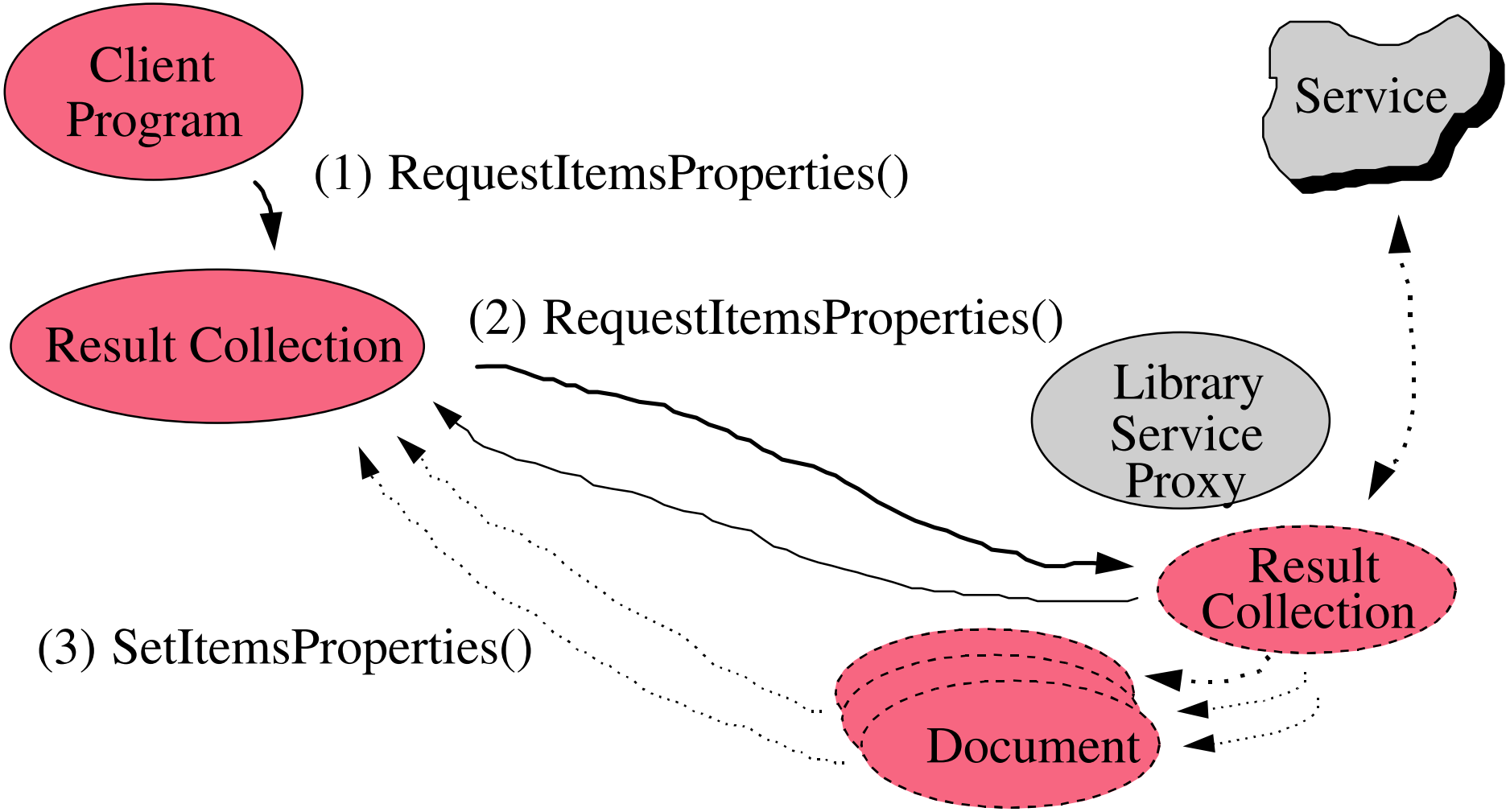
Key Concepts for Load Balancing

- Each asynchronous response passes contact info for further interaction (usually an OID and a cookie)
- A document access capability is a *set* of access options, each consisting of:
  - Contact address to get document content
  - Cookie to use when requesting content

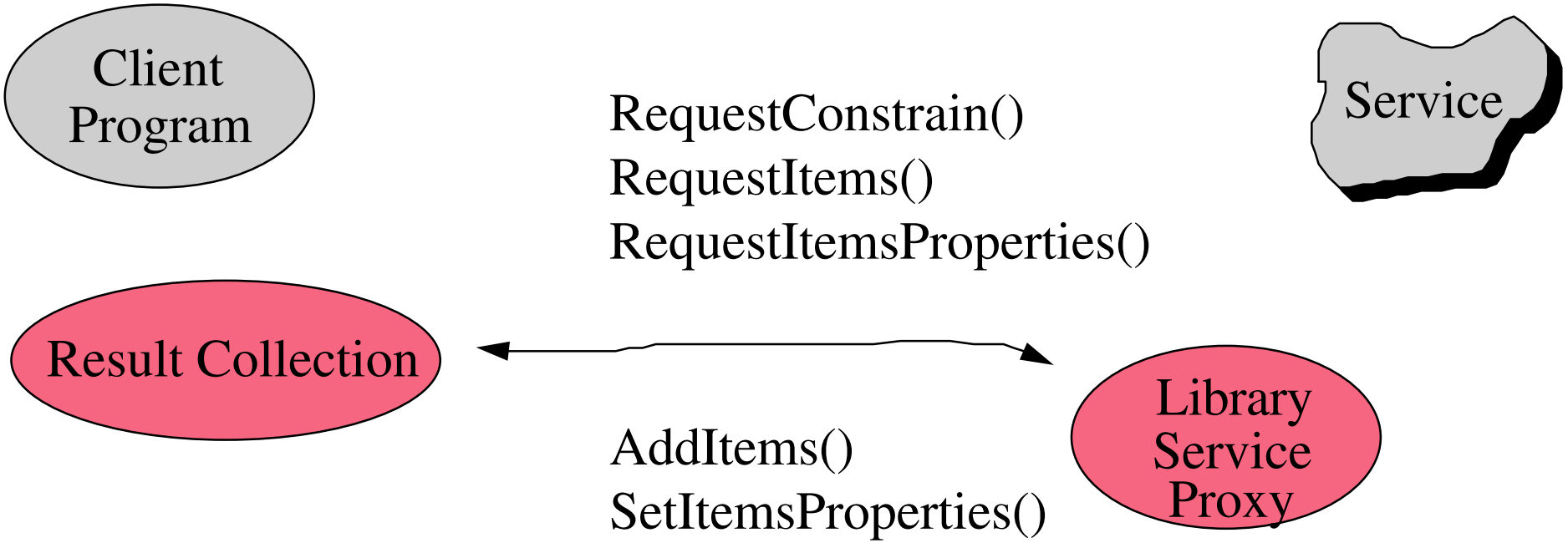
Getting the Results (3/3)



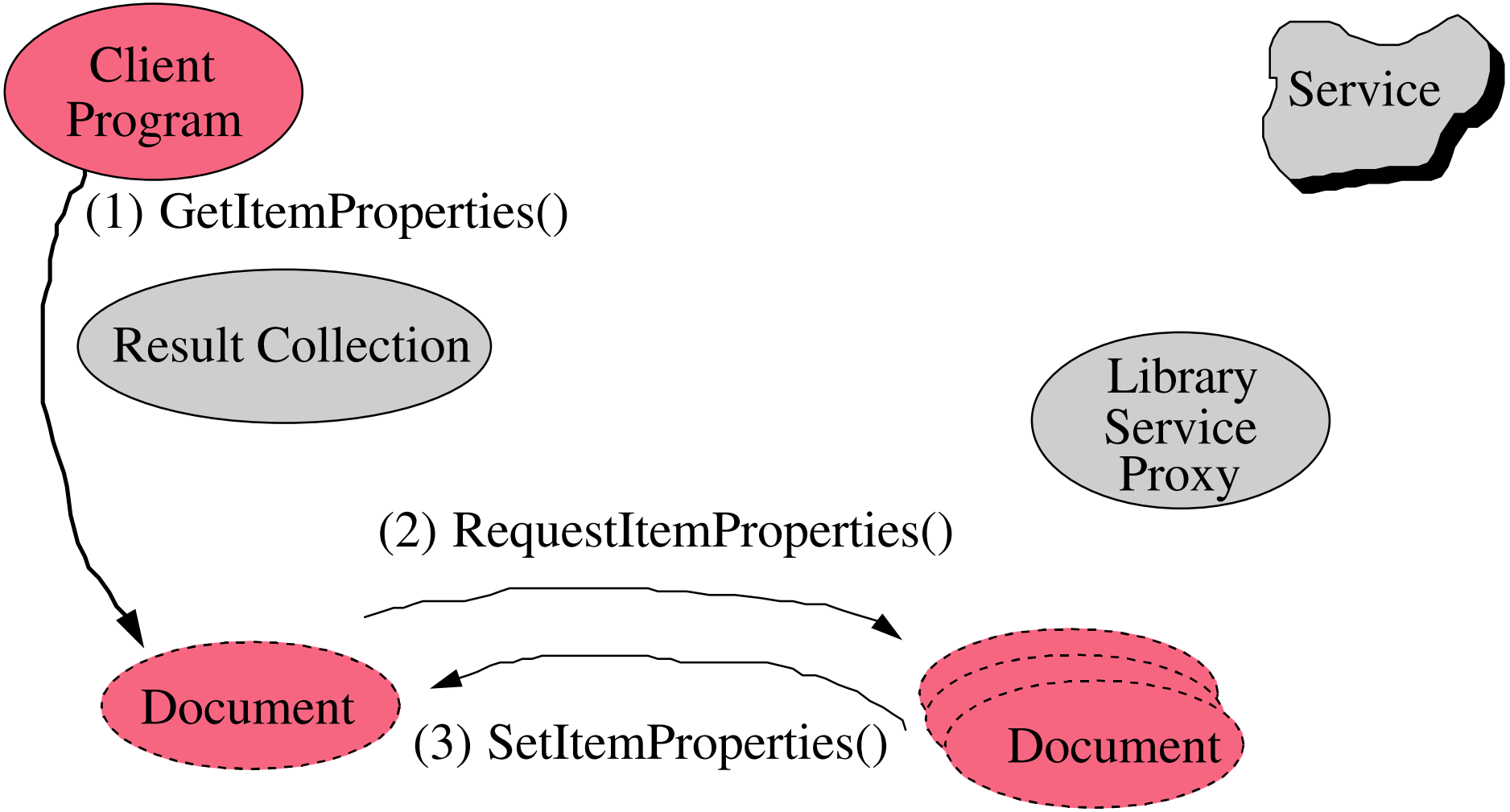
Getting Pieces of Documents: Properties



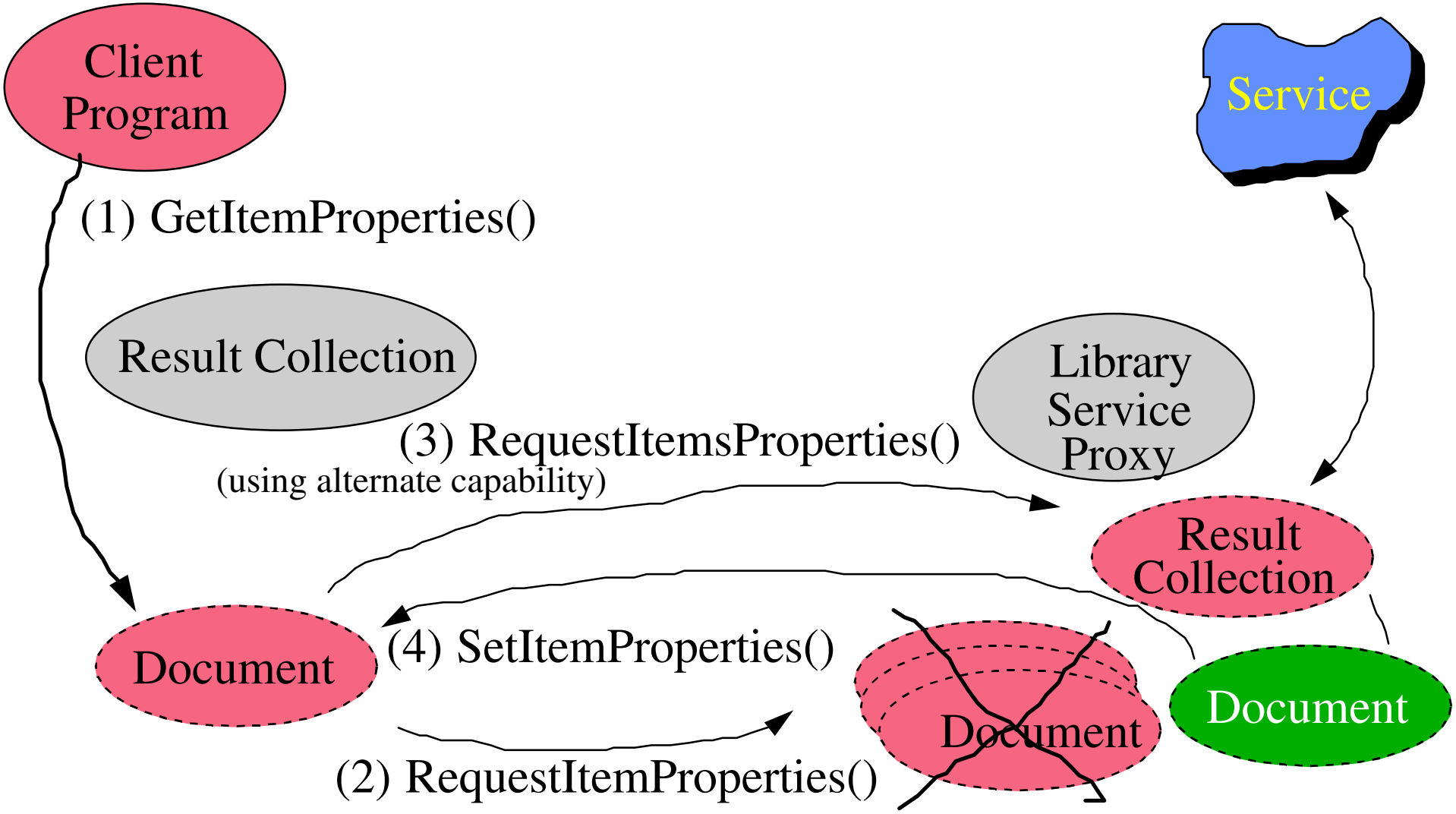
Variation: RSP Does It All



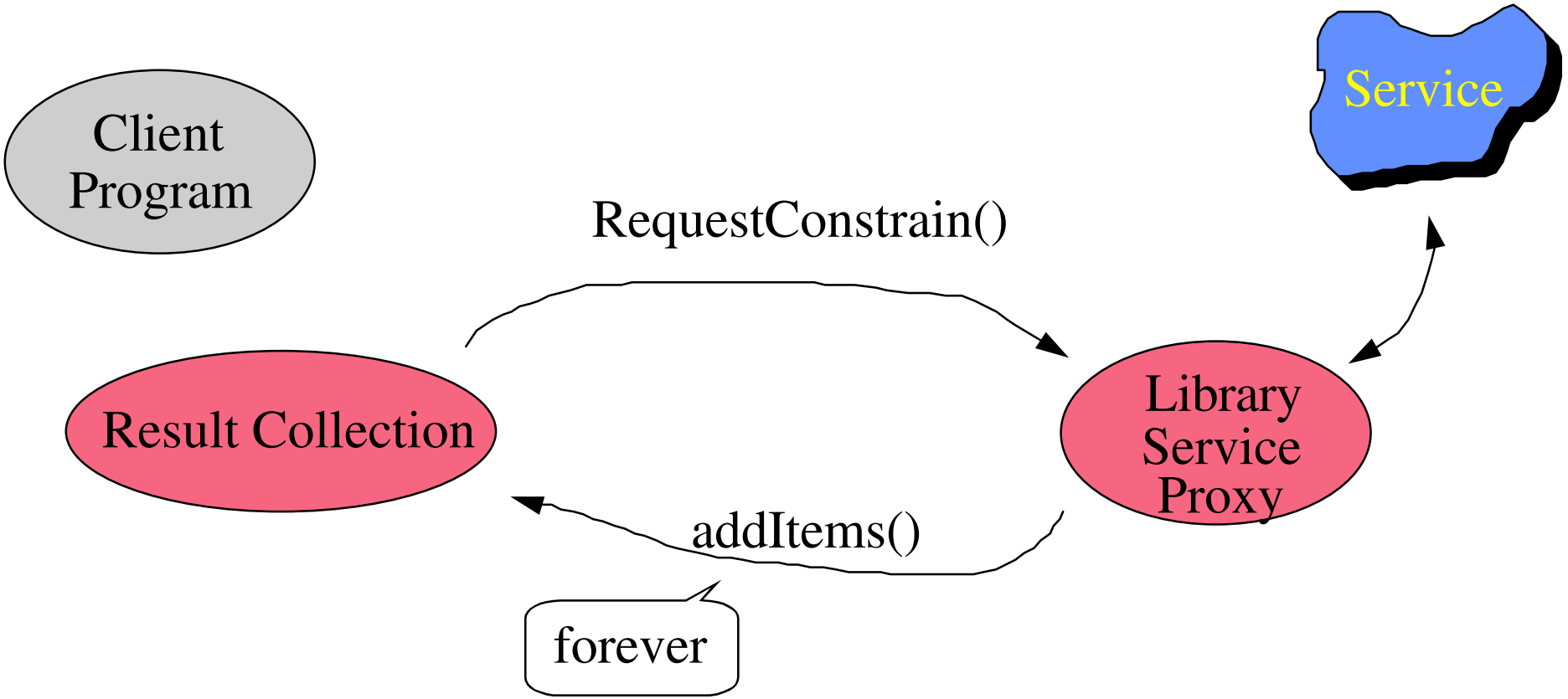
Variation: Client Partially Shadows Documents



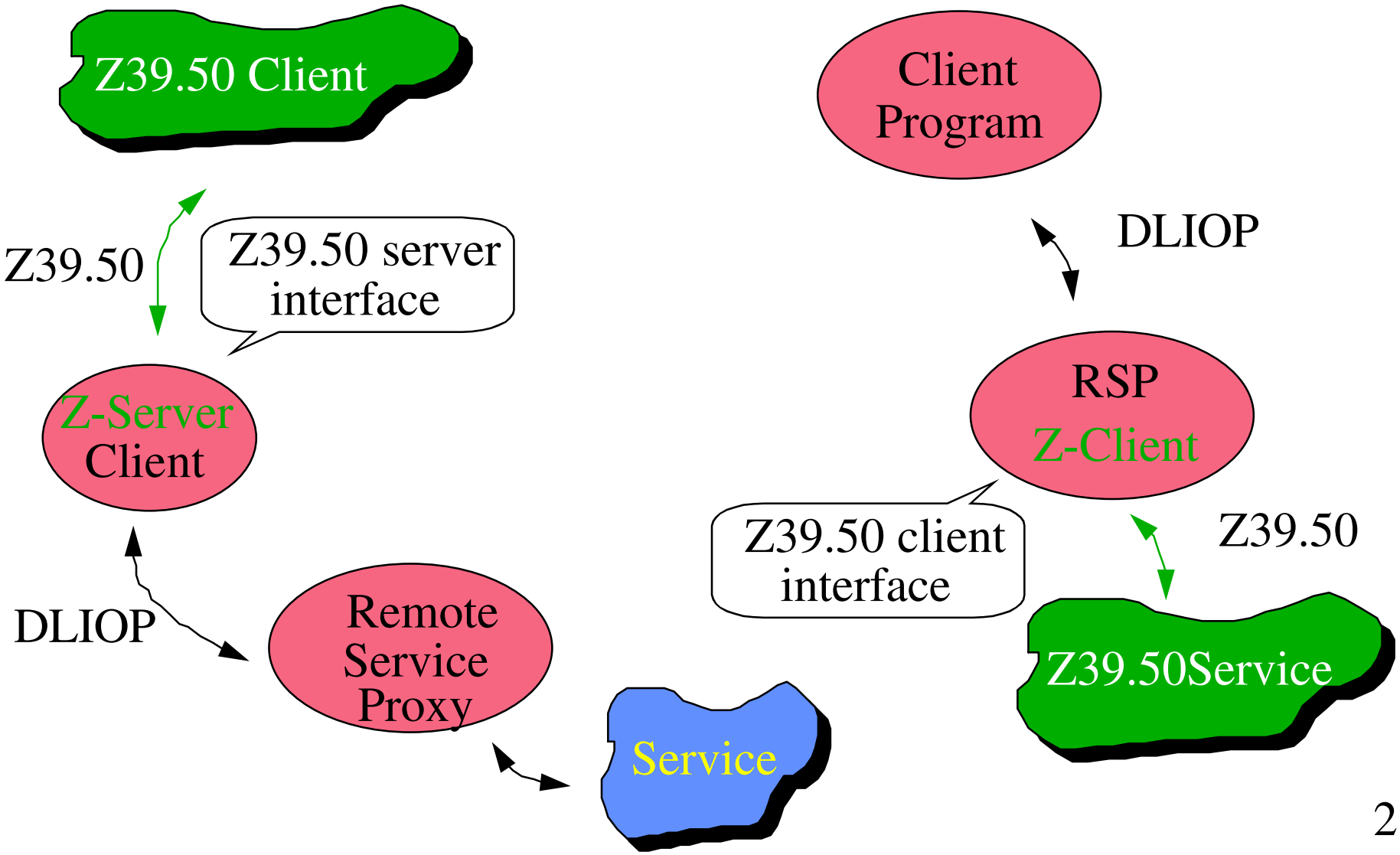
Variation: Access Option Goes Stale



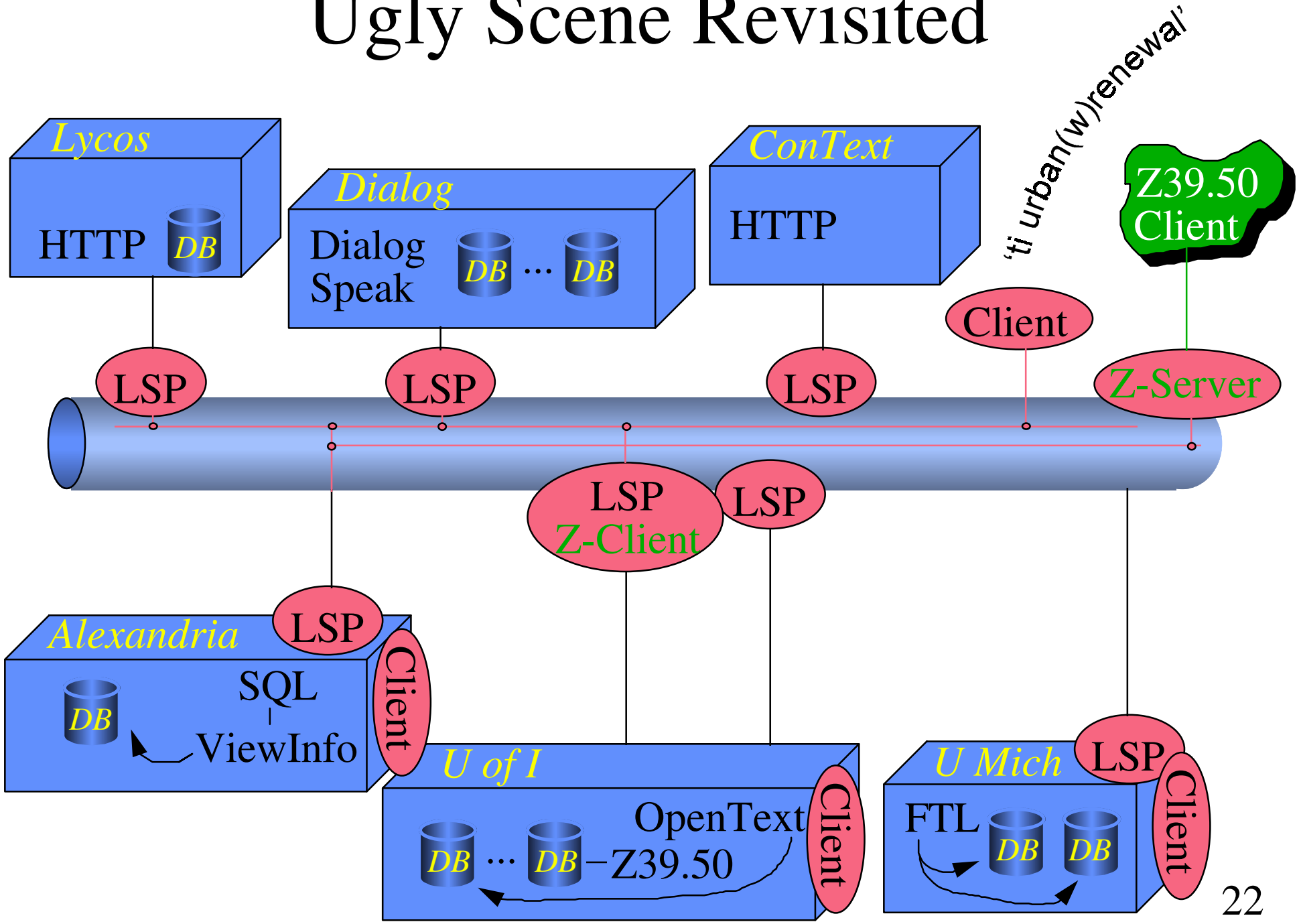
Variation: SDI is Just a Special Case

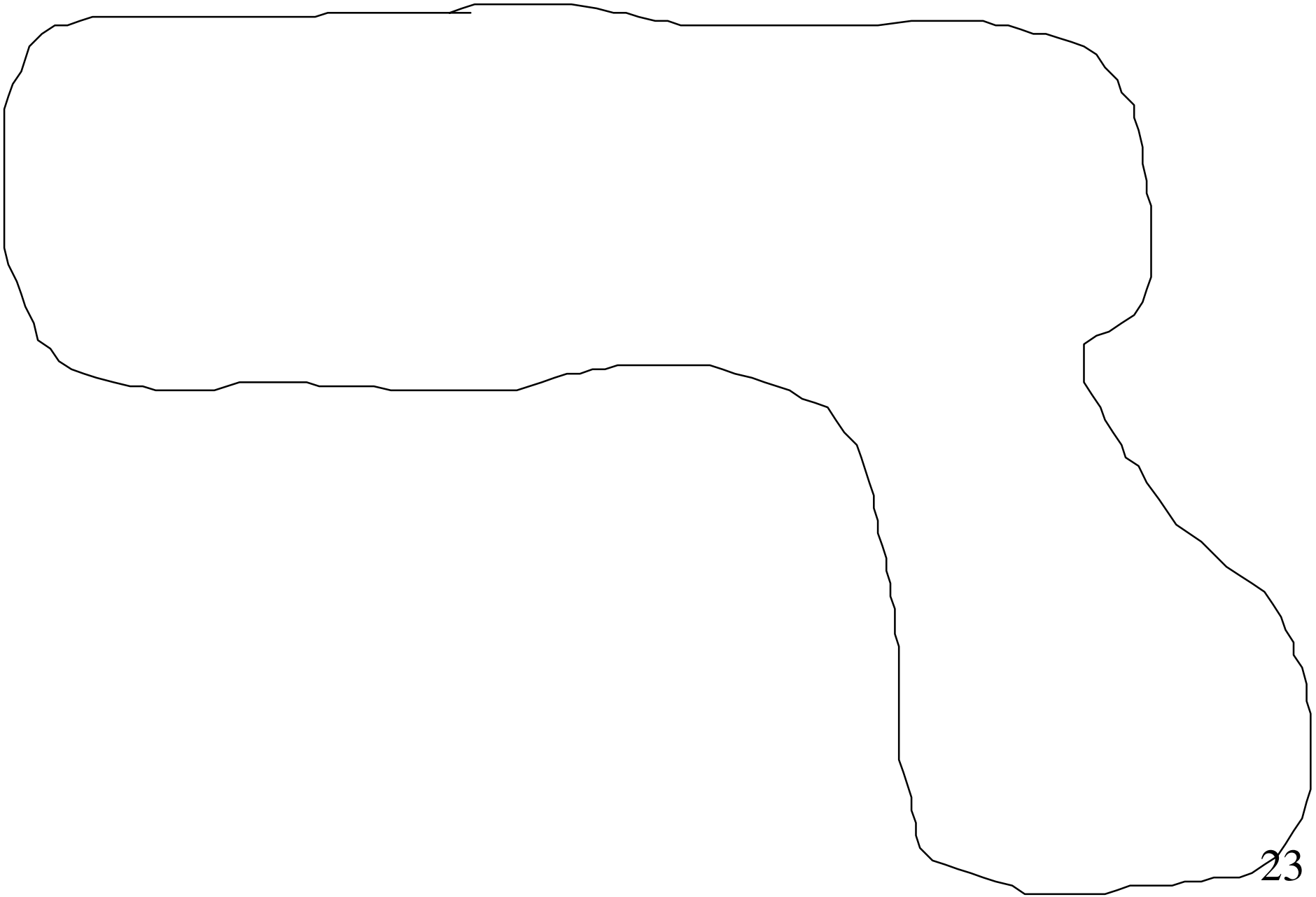


What About the Z39.50 World?



Ugly Scene Revisited



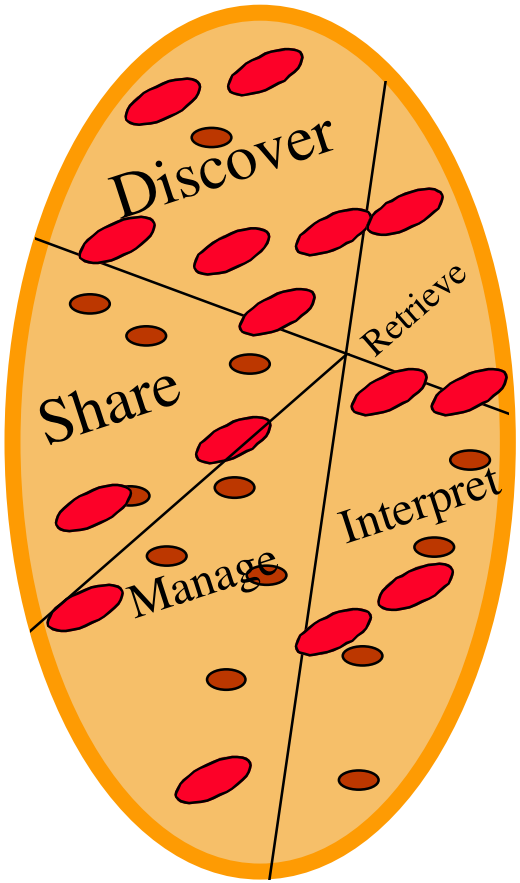
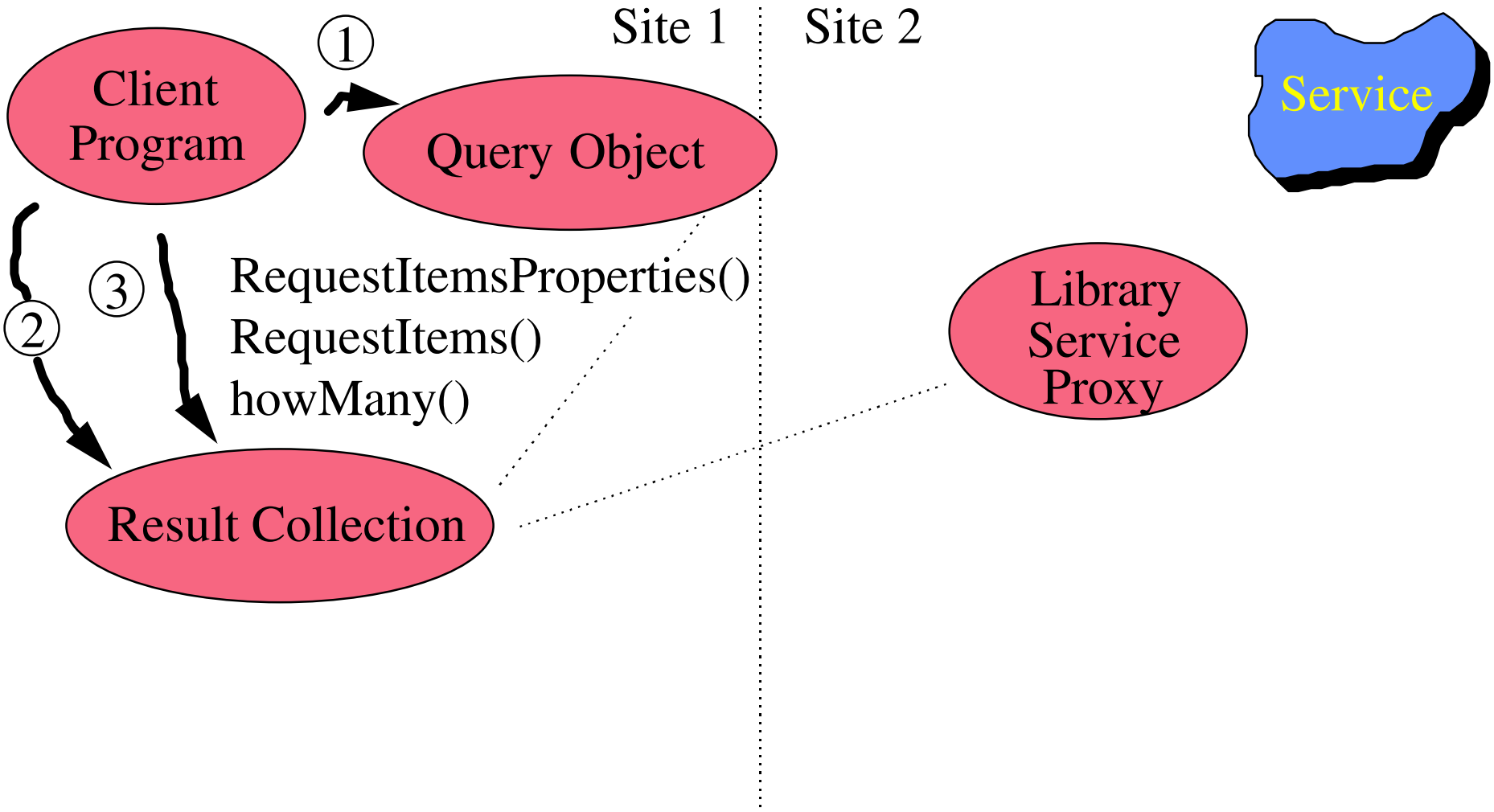


Interop Status and Plans

- Status:
  - First cut DLIOP complete
  - U. Michigan queries Dialog through proxies
  - Stanford queries U. Michigan catalog
  - Using Xerox PARC's CORBA implementation ILU
- Plans:
  - Add services: summarization, agents, etc.
  - Add Z-server
  - Wrap OpenText (collections at U of I.)
  - Wrap Alexandria collections
  - Object services
  - Work on schema problems

Some Schema Problems

- How to make sense of multiple schemas without imposing a global schema
- How does schema translation depend on the use of the documents
- When should translation be done: early/late?
- How to organize value conversion?


Discover
Retrieve
Share
Interpret
Manage

Client View of Querying