

PLE
Reference
Model

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The Personal Learning Environment project is ...

An exploration of issues around learner owned tool sets for formal and informal learning

Topics

- PLE concepts and project
- PLE models
- PLE prototypes: PLEX
- What have we learned?

Why a PLE?

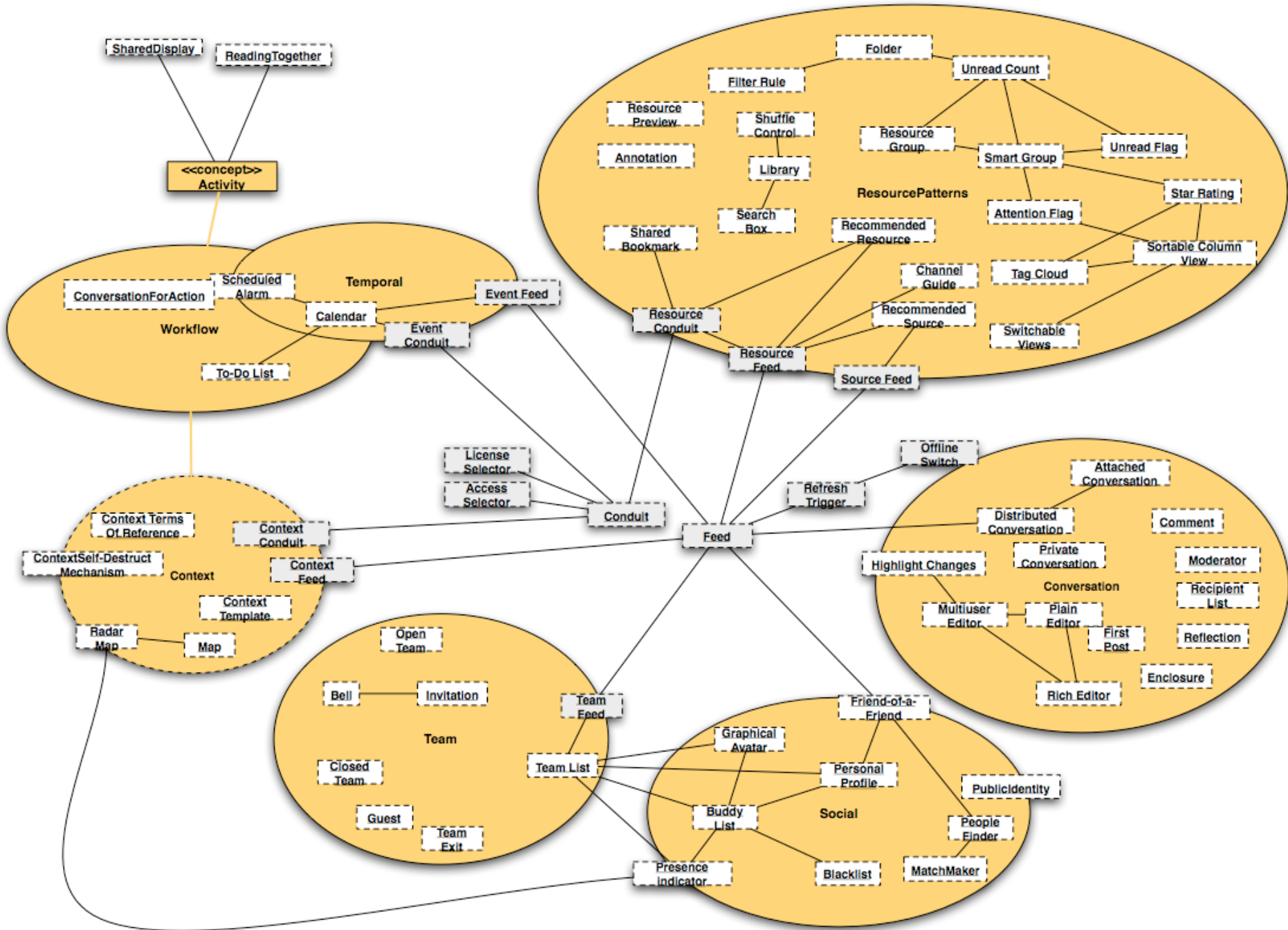
- VLEs are not easily customised to suit the needs and preferences of individuals
- As learners move between institutions, they may need to learn the interfaces to different VLEs.

The PLE Project: Concepts

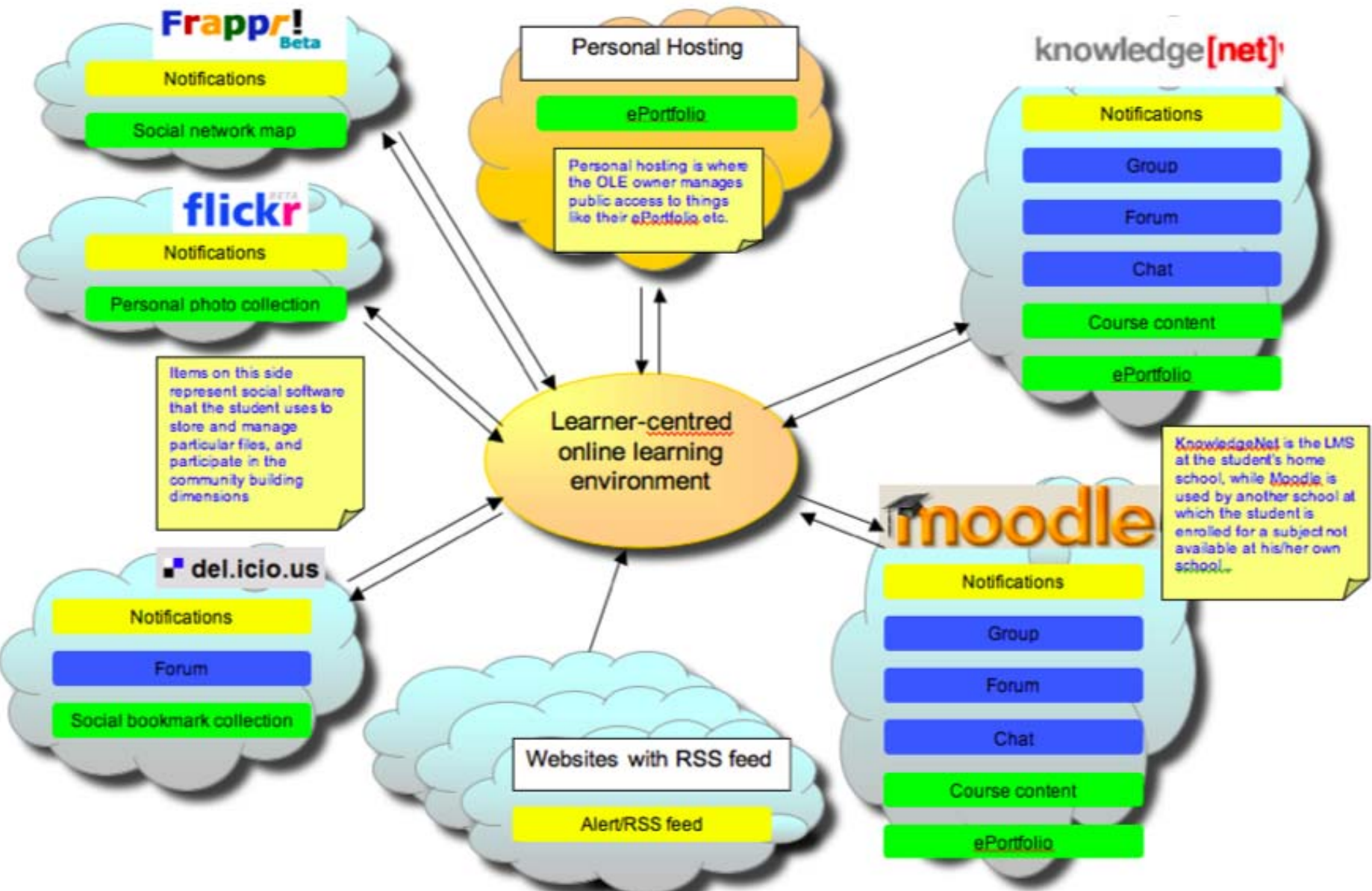
- Multiple-context learning
- Formal and informal learning networks
- Role-switching
- Asymmetric spaces
- Self-organisation
- Integrated identity

PLE Project: Approach

- Top-down: Scenario development, theory-driven analysis (Heidegger, Winograd & Flores, Beer)
- Bottom-up: Pattern analysis grounded in current and emerging applications and services, examination of existing models
- Exploratory: Prototype development, service specification and development

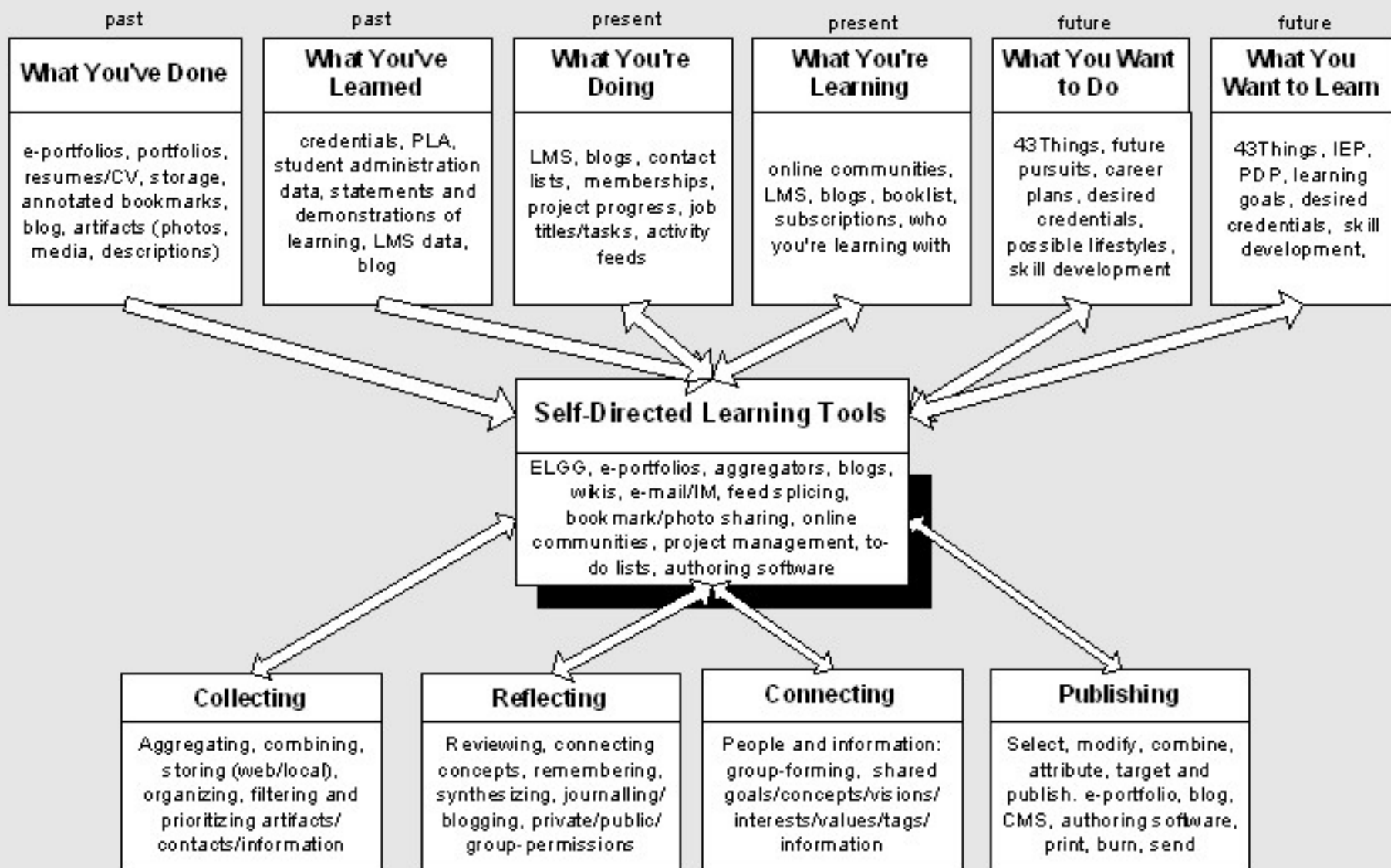


Models

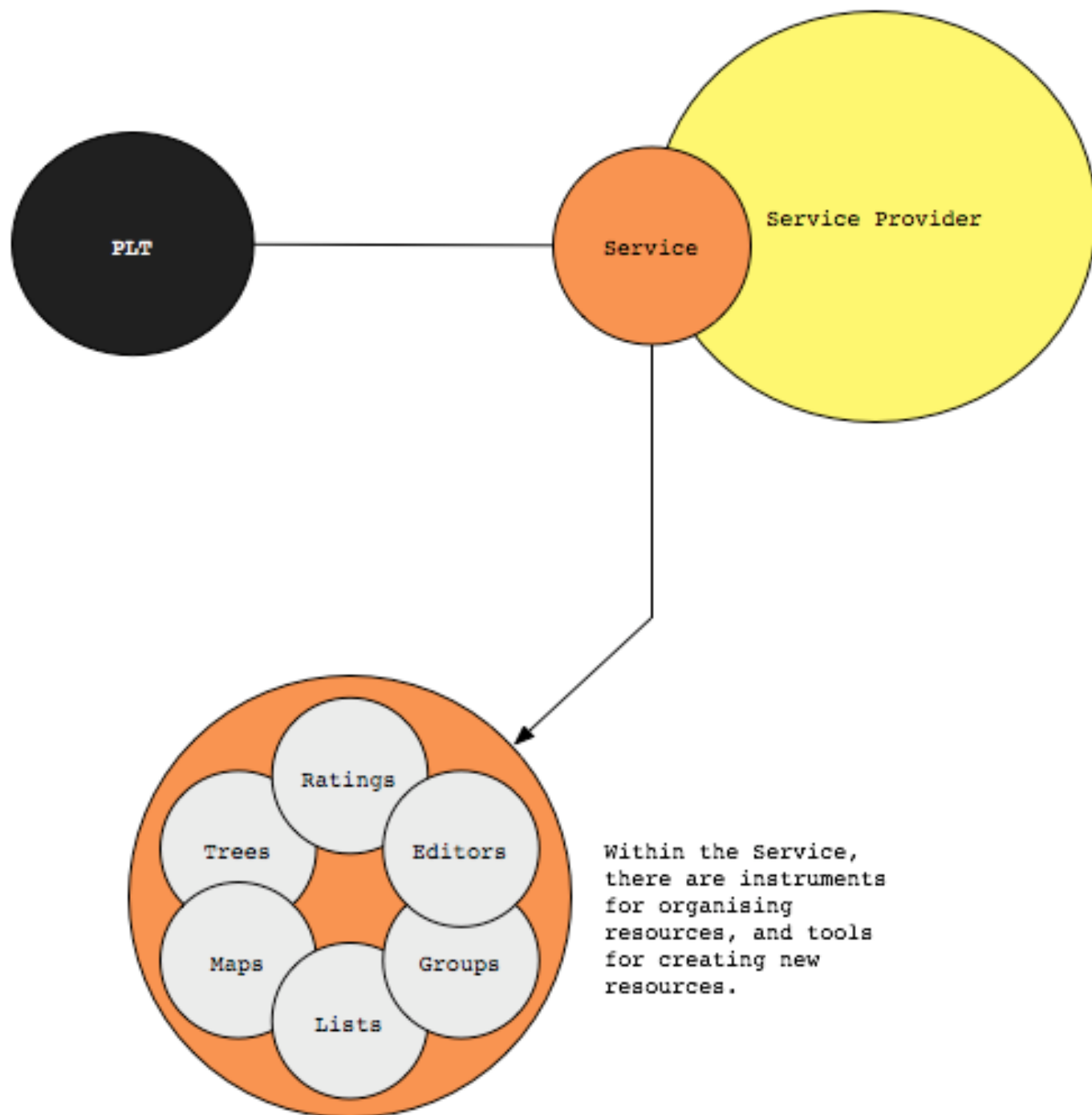


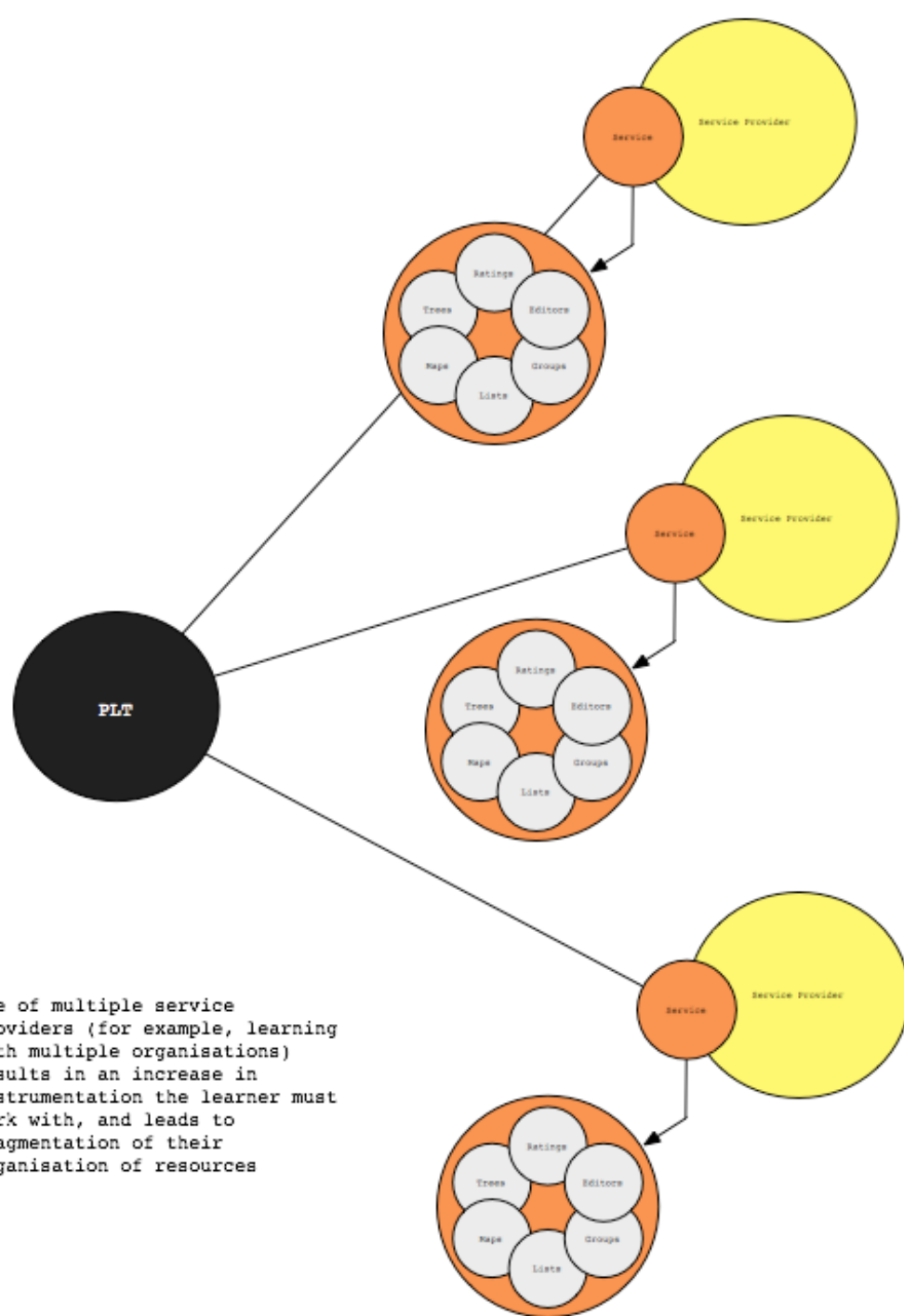
Your identity: contact info, interests, values, reputation

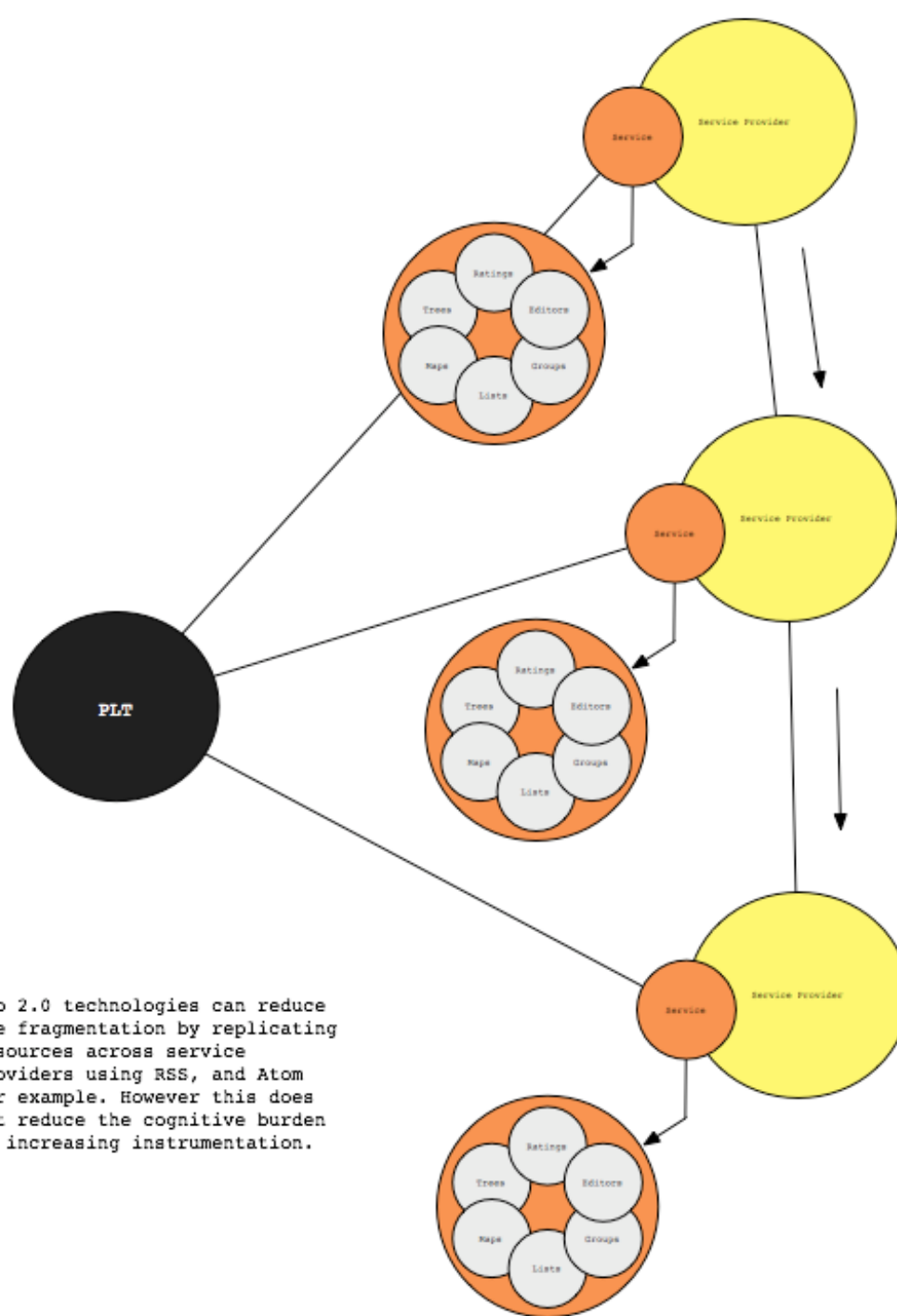
Your network: contacts, collaborators, teams, teachers, mentors, colleagues, organizations, authors, friends, family, information, sources



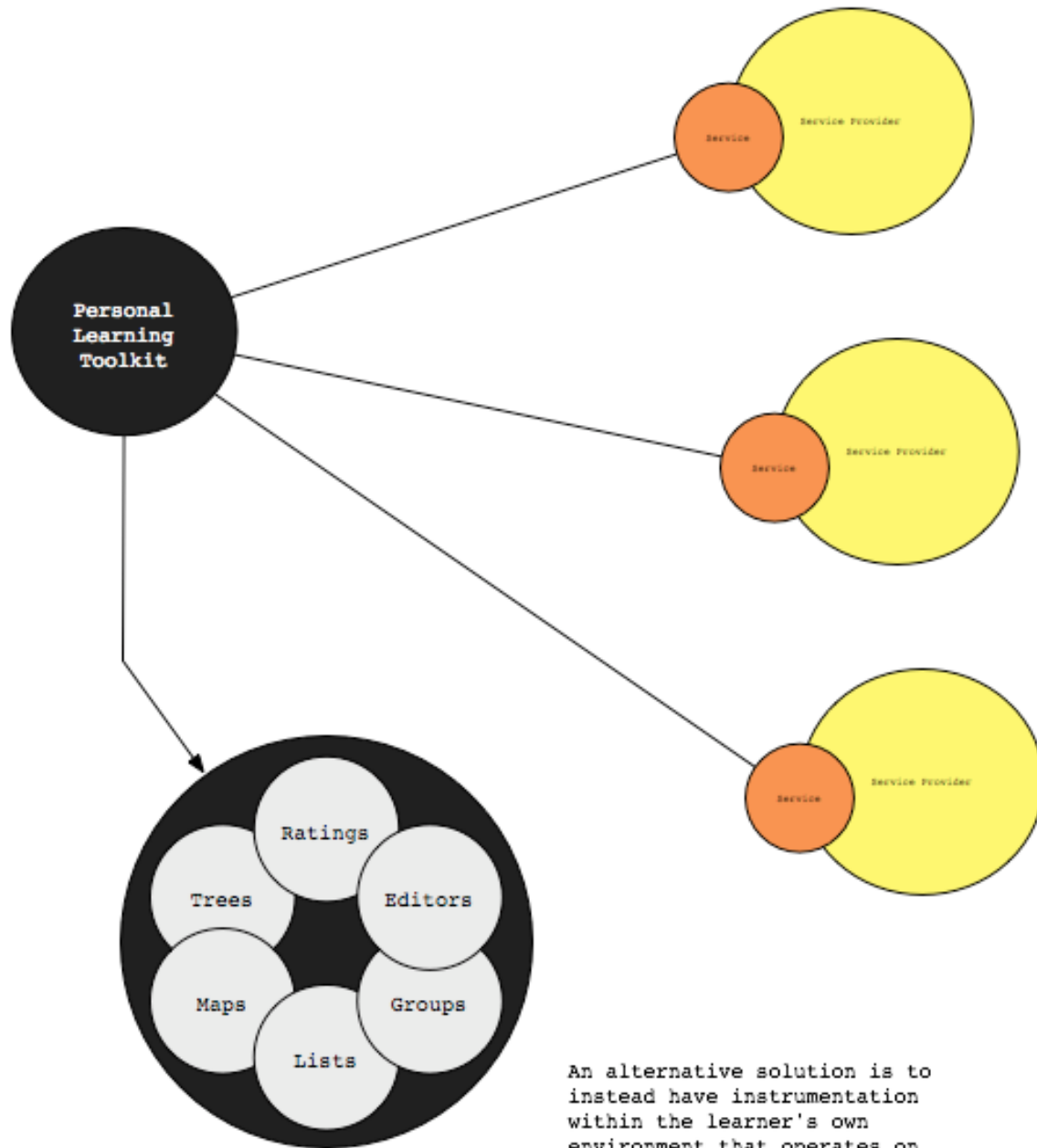
Constructing a model





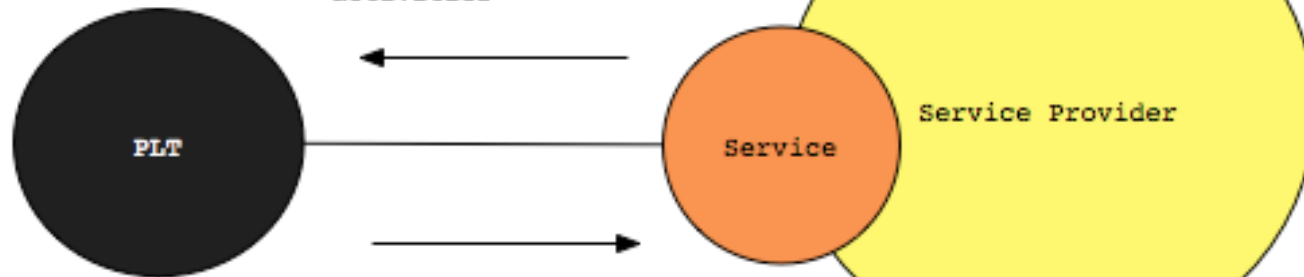


Web 2.0 technologies can reduce the fragmentation by replicating resources across service providers using RSS, and Atom for example. However this does not reduce the cognitive burden of increasing instrumentation.



An alternative solution is to instead have instrumentation within the learner's own environment that operates on resources provided by multiple service providers. This simultaneously reduced instrumentation and fragmentation.

A feed is a mechanism for enabling a PLT to aggregate the objects managed by services, such as resources and activities

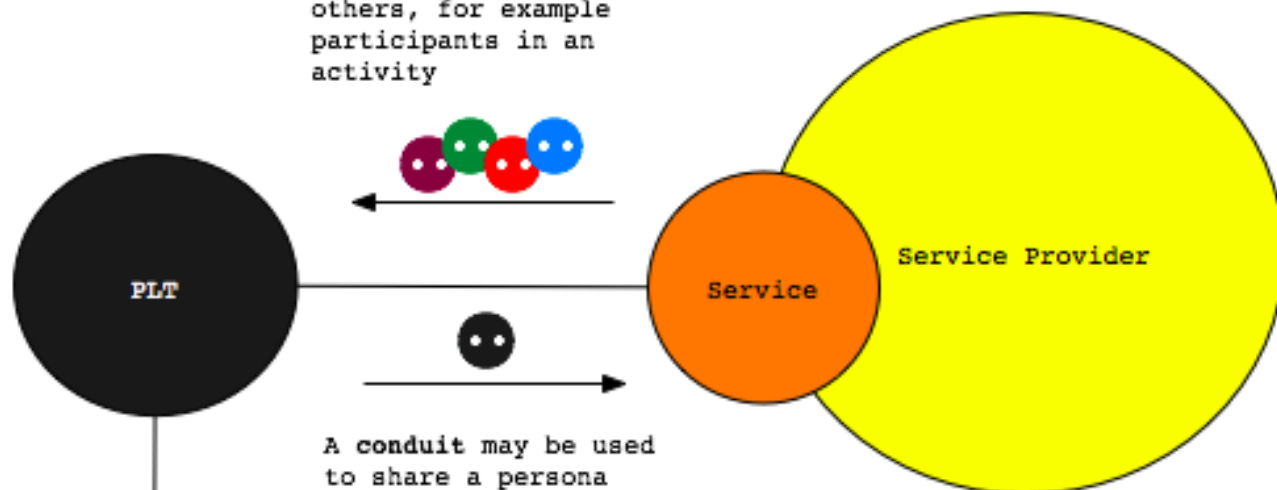


A conduit is a mechanism for enabling a PLT to share, create and affect objects managed by services, such as resources and activities

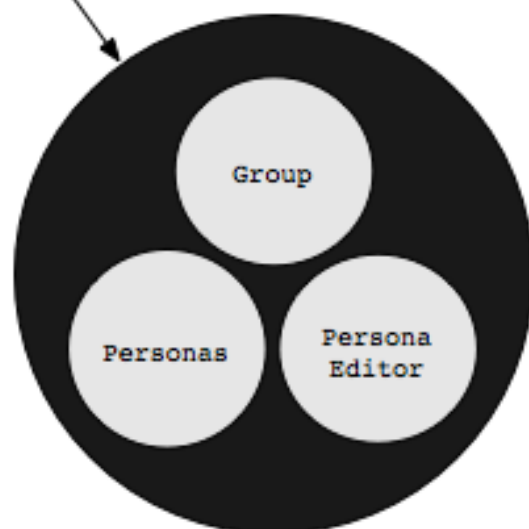


Within the PLT, there are instruments for organising resources, and tools for creating new resources

A feed can be used to collect personas of others, for example participants in an activity

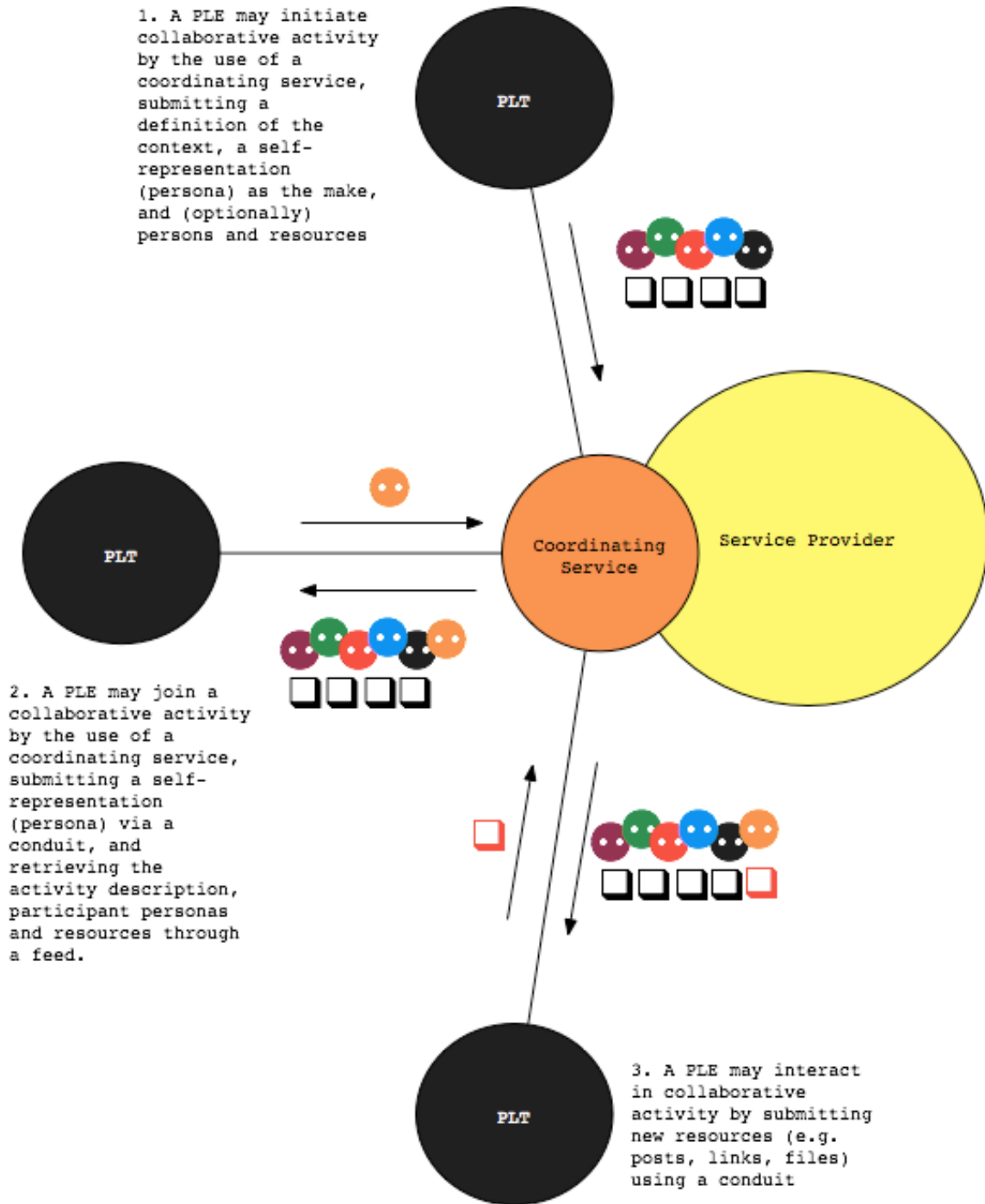


A conduit may be used to share a persona with a service. This could be a dedicated Persona Service, a Coordinating Service, or as part of a process of self-registration for a Resource Service



Within the PLE, there are instruments for organising the personas of the PLE owner, and tools for creating new personas. There are also instruments for organising personas of others

1. A PLE may initiate collaborative activity by the use of a coordinating service, submitting a definition of the context, a self-representation (persona) as the make, and (optionally) persons and resources



PLT



PLT



Coordinating Service

Service Provider

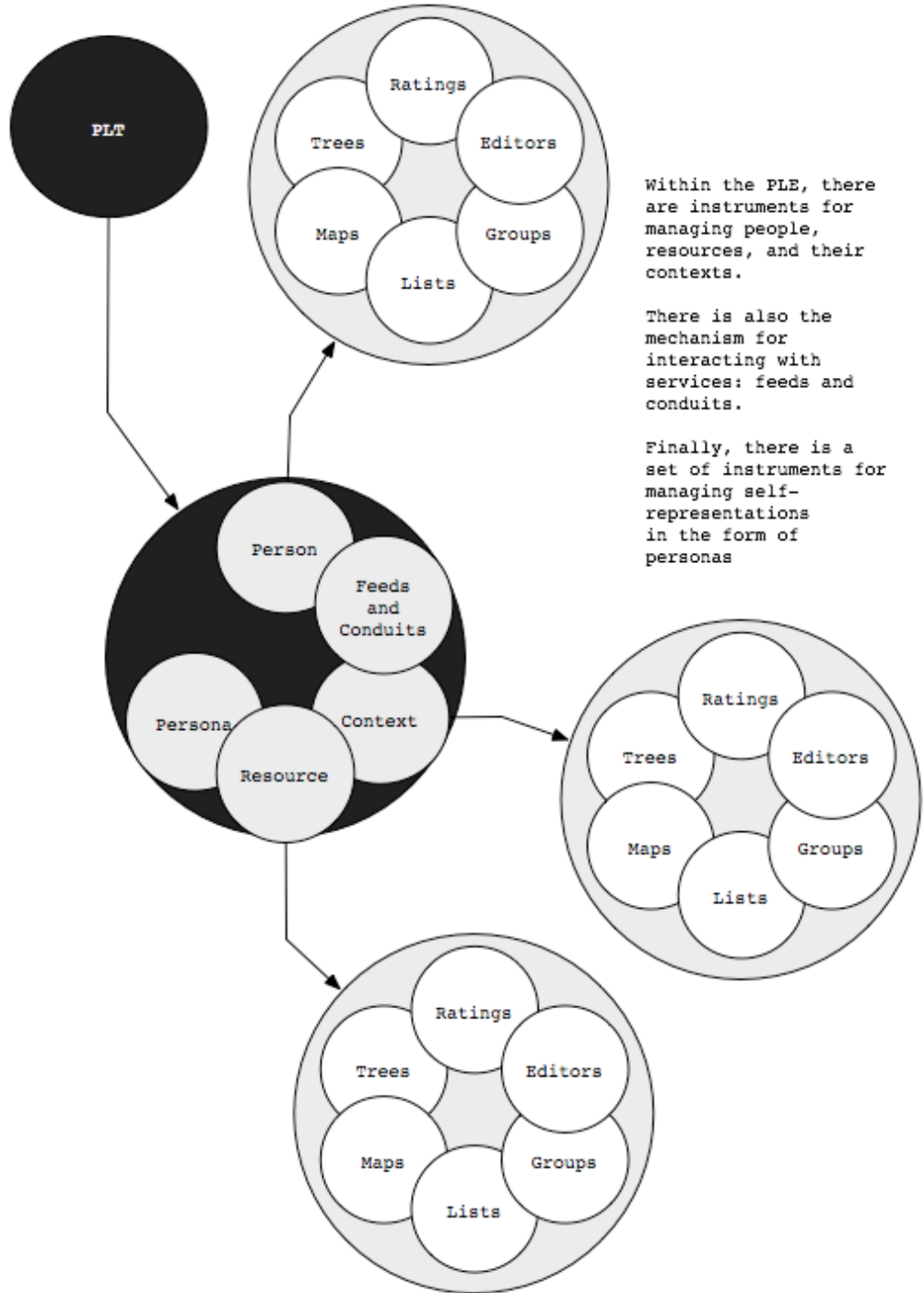


2. A PLE may join a collaborative activity by the use of a coordinating service, submitting a self-representation (persona) via a conduit, and retrieving the activity description, participant personas and resources through a feed.



PLT

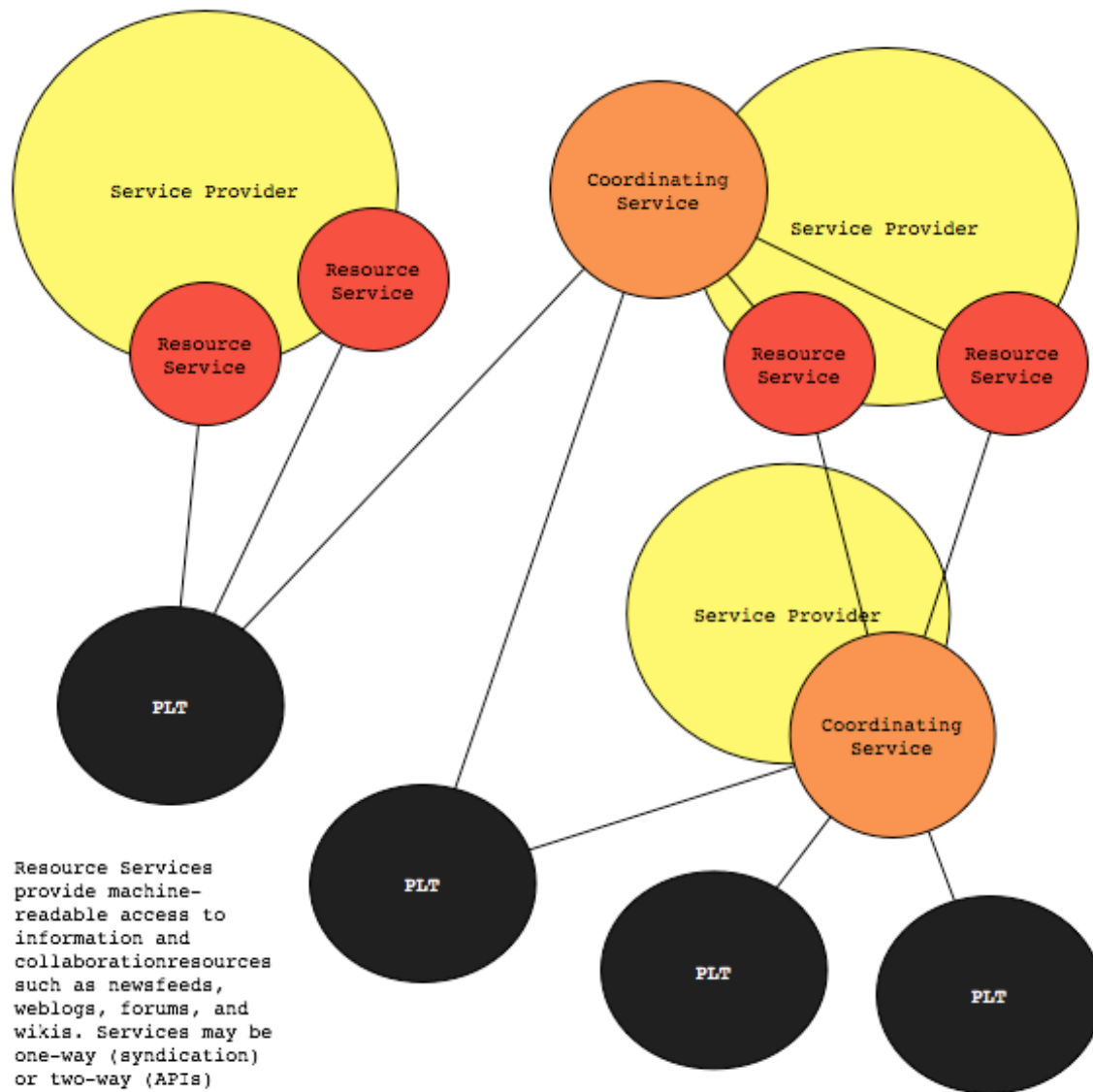
3. A PLE may interact in collaborative activity by submitting new resources (e.g. posts, links, files) using a conduit



Within the PLE, there are instruments for managing people, resources, and their contexts.

There is also the mechanism for interacting with services: feeds and conduits.

Finally, there is a set of instruments for managing self-representations in the form of personas

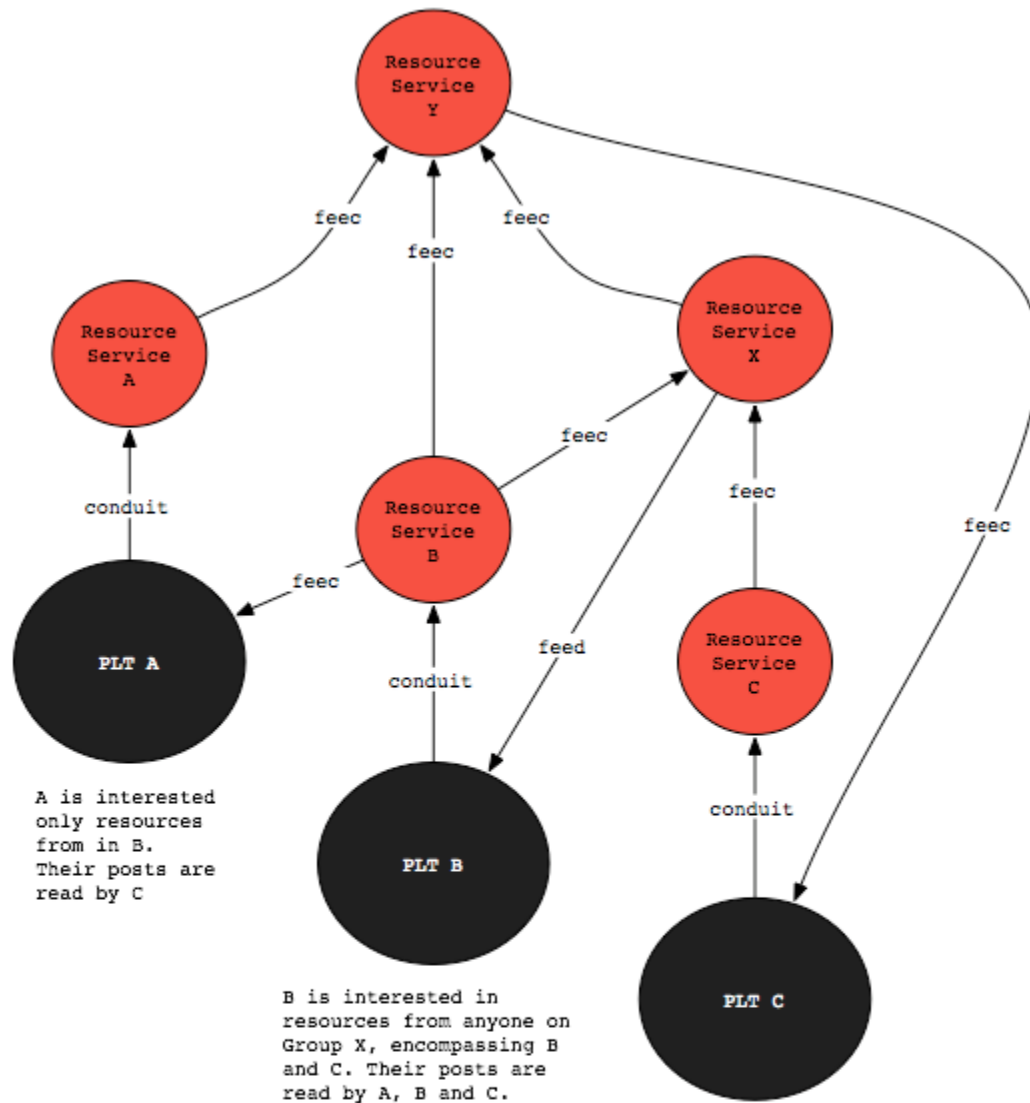


Resource Services provide machine-readable access to information and collaboration resources such as newsfeeds, weblogs, forums, and wikis. Services may be one-way (syndication) or two-way (APIs)

Coordinating Services provide contextualization of sets of resource services, and enabling the sharing of personas (personal information profiles) amongst participants

Service providers can be institutional, commercial, or personal hosting services. For example, the shared bookmarking service del.icio.us, the blog hosting service [edublogs](http://edublogs.org), and the institutional system Sakai are all examples of service providers in this context

A PLE may connect directly to resource services (for example, a newsreader), use only coordinating services, or a combination of both approaches.



A is interested only resources from in B. Their posts are read by C

B is interested in resources from anyone on Group X, encompassing B and C. Their posts are read by A, B and C.

C is interested in resources from anyone in Group Y, encompassing Group Y, A, B, and C. Their posts are read by B

An example of distributed collaboration without coordinating services. Based on a diagram by James Farmer (2005).

See http://incsub.org/blogtalk/?page_id=54

Prototypes

- PLEX (Eclipse RCP)
- PLEWeb (Liferay)
- HOWEVER, the PLT solution is not necessarily “a solution”:
 - Interrelated desktop tools (e.g. Thunderbird+OpenOffice+NetNewsWire+Trillian)
 - Network of interrelated online personal tools (e.g. del.icio.us+MySpace+Flickr+GMail (etc))

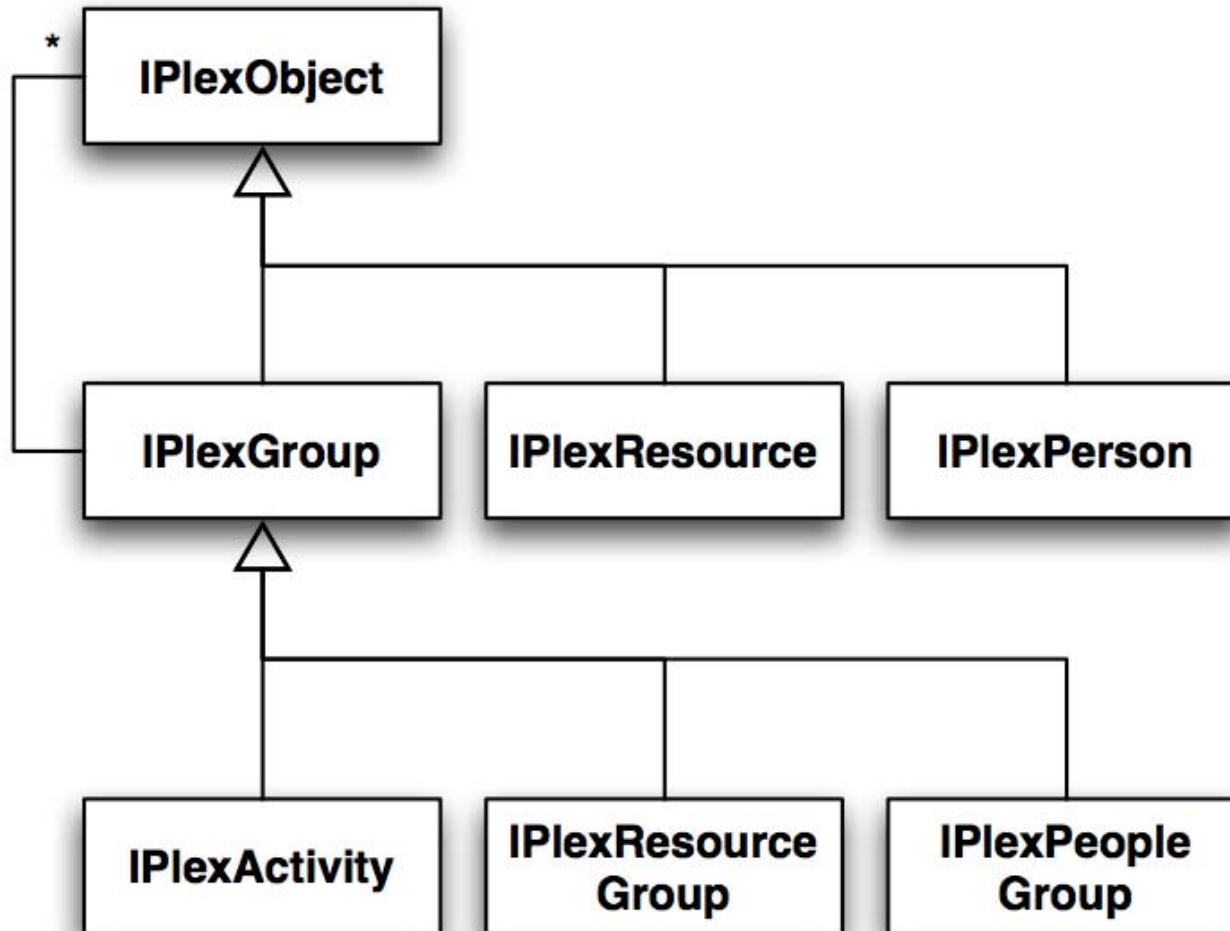
Plex

- Some basic design concepts:
 - Feeds aggregate information from services
 - Conduits publish information to services
 - Views and Groups manage information
 - People, Resources, Activities as the building blocks

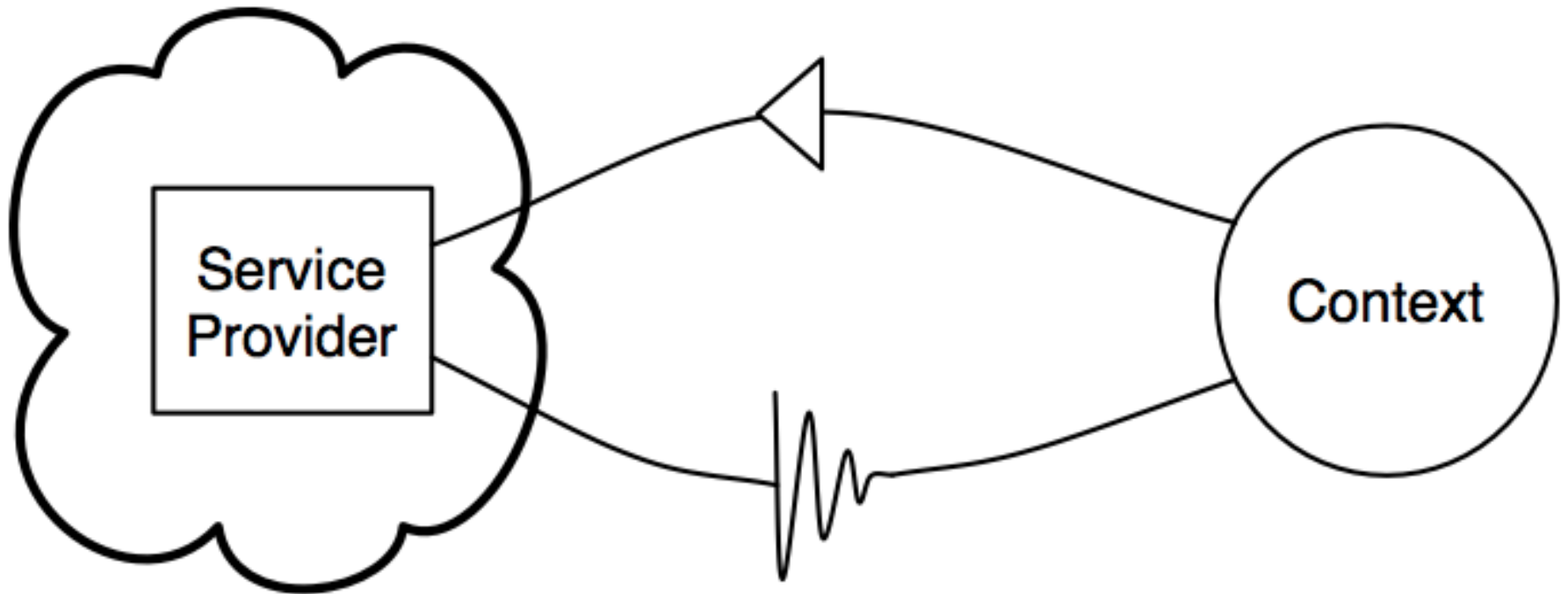
Lets take a look...

- *Here, Wilbert tries to demo Plex and suffers the usual unfortunate mishaps with networks, proxies, server failures, firewalls, etc.*

Data Model



Feed/Conduit



Lessons Learned

- ReST APIs are a lot faster to implement than SOAP
- It is possible to generalize across a wide range of protocols within a service genre (e.g. del.icio.us, 43Things, Atom, OPML, RSS)
- Good conceptual product design is very hard even for an experienced team

More Lessons

- The link from discovery of opportunities (e.g. via XCRI) to realization is missing - needs a subscription/application API and process
- No standard API available for generic coordination of activity
- Generalization across services tends to reduce the metadata relied upon to a bare minimum

And More

- Portal technologies are really unsuitable for building this type of composite application - they are really not designed for inter-portlet communication
- RCP is a good platform, and is developing nicely. BUT you have to learn *its* ways to get the best from your code. However, you can only really do this by reading the JavaDoc!
- PlexMonkey - adding user Javascript capability is cool!

Three key outputs

- Theoretic and empirically validated model of Personal Learning Environments (vs. PLTs and VLEs)
- Set of PLE implementation patterns
- PLEX software

That's All Folks!

<http://www.cetis.ac.uk/members/ple>