



SDShare

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SDShare

A protocol for publishing and consuming data in an open world environment.

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12 December 2011 Last updated at 09:27 GMT

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 How League embraced revolution

Cameron to face MPs over EU veto



David Cameron will face MPs later to explain his decision to veto changes - a decision his coalition partners say was bad for Britain.
 Is the City worse off after veto? Robinson: The coalition
 Peston: Big business deeply troubled Q&A: Cameron and the

Job loss 'is fastest-rising fear'



A BBC World Service survey covering 11,000 people in 23 countries found unemployment was the world's fastest-rising worry. 55
 Eurozone unemployment rate rises

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French former prime minister and centre-right politician Dominique de Villepin announces he will


China promises to boost imports

Jailed Noriega arrives in Panama

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Europe's reluctant dance partners

Medvedev orders election investigation



Russian President Dmitry Medvedev has called for a probe into allegations of vote fraud over recent parliamentary elections, according to a message posted on his Facebook page. FULL STORY | FREE ELECTIONS, NOT REVOLUTION

TOP EUROPE STORIES

- 143 arrested in London over Congo protests
- Ex-Panama leader Noriega extradited from France
- Police: 100 snakes found in German hotel
- Golf: Donald makes history with 'double top'
- "Putin Out," chant Russian protesters
- Vettel honored to be part of F1 history


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David Cameron will face MPs later to explain his decision to veto EU treaty changes - a decision his coalition partners say was bad for Britain.

[RBS woes caused by poor decisions](#)
12 December 2011 08:43

RBS nearly collapsed in 2008 because of poor management decisions and poor regulation, a report from its regulator says.

[Four bodies are found at property](#)
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A property in Leeds is sealed off and searched for the presence of harmful gases or chemicals after four bodies are found inside.

[Uprising overshadows Syria polls](#)
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Syria holds local elections despite an opposition boycott and continuing violence between security forces and protesters.

[Bahraini king visits UK for talks](#)
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The king of Bahrain makes a visit to the UK for talks with Prime Minister David Cameron, in an effort to improve relations following the Arab Spring.

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[Medvedev orders election investigation](#)
11 December 2011 17:17

Russian President Dmitry Medvedev has called for a probe into allegations of vote fraud over recent parliamentary elections, according to a message posted on his Facebook page.

[143 arrested in London over Congo protests](#)
11 December 2011 17:59

At least 143 people were arrested in London following protests over elections in the Democratic Republic of the Congo, British authorities said.

[Ex-Panama leader Noriega extradited from France](#)
11 December 2011 15:33

Former dictator Manuel Noriega left France for Panama on Sunday, nearly 22 years after U.S. forces forcibly removed him from office, a CNN affiliate reported.

[Police: 100 snakes found in German hotel](#)
11 December 2011 00:15

Police arrested three Chinese nationals after authorities uncovered about 100 snakes, 70 tortoises and 20 neon-colored frogs in their hotel room in western Germany, according to a police spokesman.

[Golf: Donald makes history with 'double top'](#)
11 December 2011 14:59



Making Data Free

Options*

1. EU 'lacks decisive policy plans'

Moody's says it will review the ratings of all EU countries because of the lack of decisive policy measures coming from last week's summit.

2. Cameron to face MPs over EU veto

David Cameron will face MPs later to explain his decision to veto EU treaty changes - a decision his coalition partners say was bad for Britain.

Sage Options*

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1. EU 'lacks decisive policy plans'

2. Cameron to face MPs over EU veto

3. Chelsea agree Anelka China move

4. Mourinho hopes to be Special One

5. VIDEO: Riot police protect Paris theatre

6. RBS woes caused by poor decisions

7. VIDEO: Job struggle facing young Italians

8. Medvedev Facebook post draws ire

9. Villepin to stand for president

10. Big business deeply troubled by Cameron's veto

11. MP sorry for 'Nazi' guest photos

12. France's Aréva to 'make big loss'

13. Donald seals US & European double

14. Khan stunned by Peterson defeat

15. VIDEO: Russia rallies put pressure on Putin

16. Rattling the political establishment

17. Russian protests biggest in years

BBC News - Europe

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1. EU 'lacks decisive policy plans'

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CNN.com - Europe

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1. 143 arrested in London over Congo protests

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Sunday, December 11, 2011 5:59 PM

2. Medvedev orders election investigation

Russian President Dmitry Medvedev has called for a probe into allegations of vote fraud over recent parliamentary elections, according to a message posted on his Facebook page.

Sunday, December 11, 2011 5:17 PM

3. Ex-Panama leader Noriega extradited from France

Former dictator Manuel Noriega left France for Panama on Sunday, nearly 22 years after U.S. forces forcibly removed him from office, a CNN affiliate reported.

Sunday, December 11, 2011 3:33 PM

4. Golf: Donald makes history with 'double top'

Luke Donald has won the 2011 Race to Dubai title to become the first golfer in history to top the money list in both Europe and the United States in the same calendar year.

Sunday, December 11, 2011 2:59 PM

5. Police: 100 snakes found in German hotel

Police arrested three Chinese nationals after authorities uncovered about 100 snakes, 70 tortoises and 20 neon-colored frogs in their hotel room in western Germany, according to a police spokesman.

Sunday, December 11, 2011 12:15 AM

6. "Putin Out," chant Russian protesters

Tens of thousands of Russians turned out in central Moscow and across the country on Saturday for a peaceful protest against what many believe were rigged parliamentary elections.

Saturday, December 10, 2011 8:35 PM

7. Vettel honored to be part of F1 history

Sebastian Vettel has saluted his Red Bull team after making Formula One history in 2011.

Saturday, December 10, 2011 7:10 PM

8. Eurozone leaders reach deal without UK

A majority of European leaders agreed early Friday on a new deal to try to resolve the continent's debt crisis, but Britain refuses to back a broader treaty change.

Friday, December 9, 2011 10:40 PM

9. Study: Germans downbeat on euro

Almost half of German people believe that their country's economy would be in a better position today if it hadn't joined

10. Romanians 'hijacked' U.S. credit card machines'

Four Romanian nationals allegedly remotely hacked into credit card machines at 150 Subway restaurants and 50 other retail

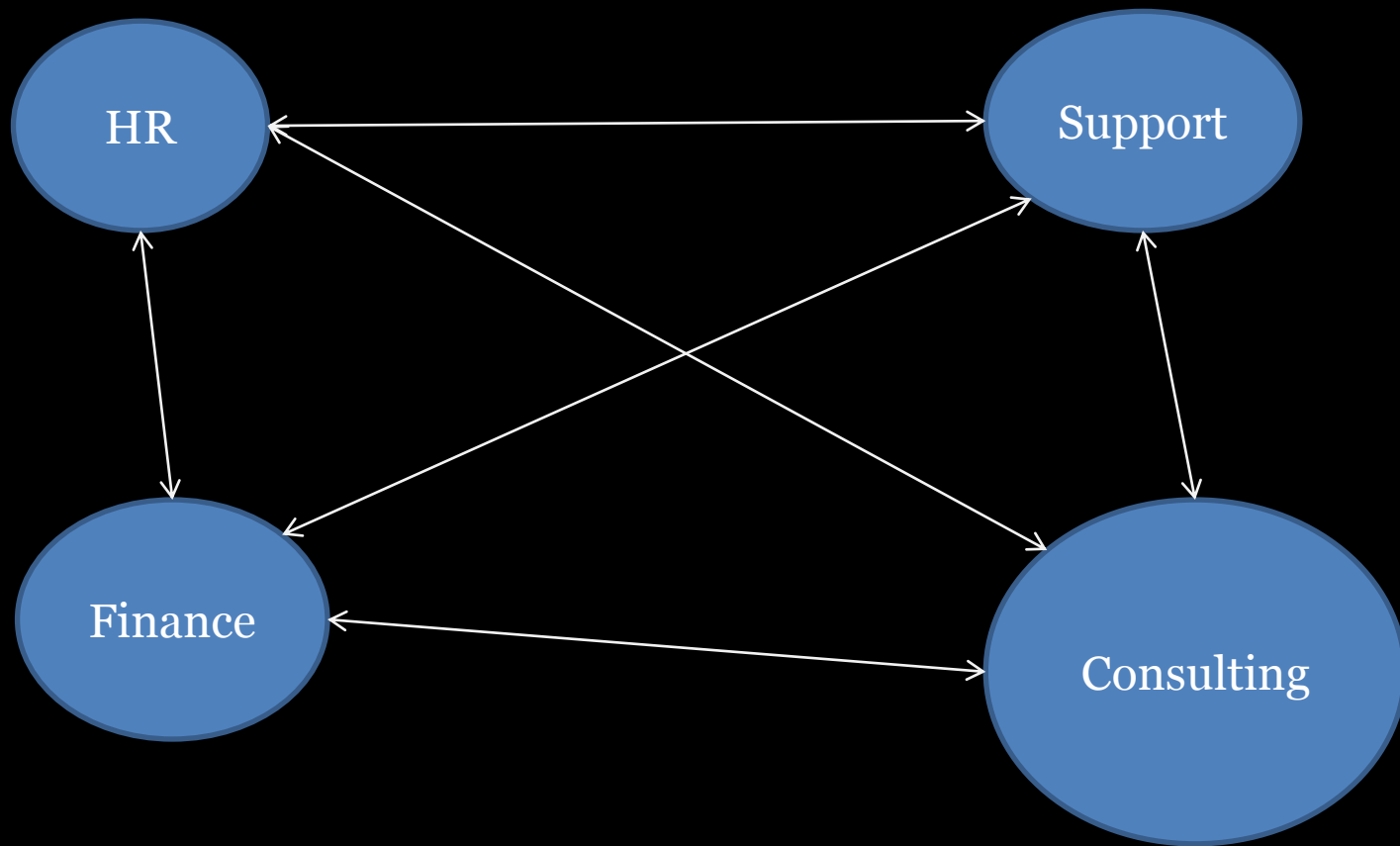


SDShare

Aims to change the way data integration and sharing occurs.

How can we apply these web concepts about human content to data?

Web Services Integration





Web Services Integration

Point to Point with little consideration for other requirements

Data structure is fixed using XML Schema

Resources are not addressable, thus no URIs for fetching the information.

Functional rather than data integration

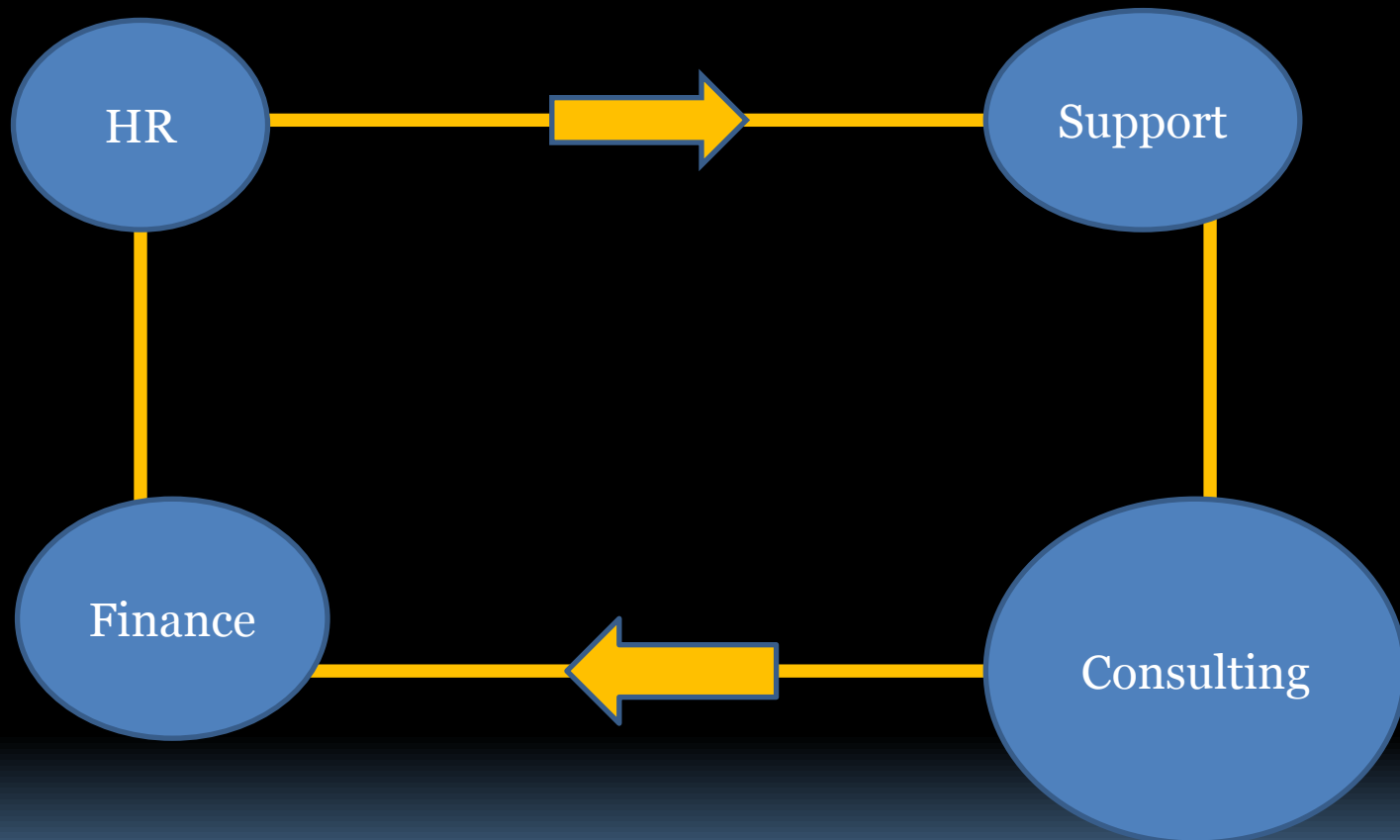


Web Services Integration

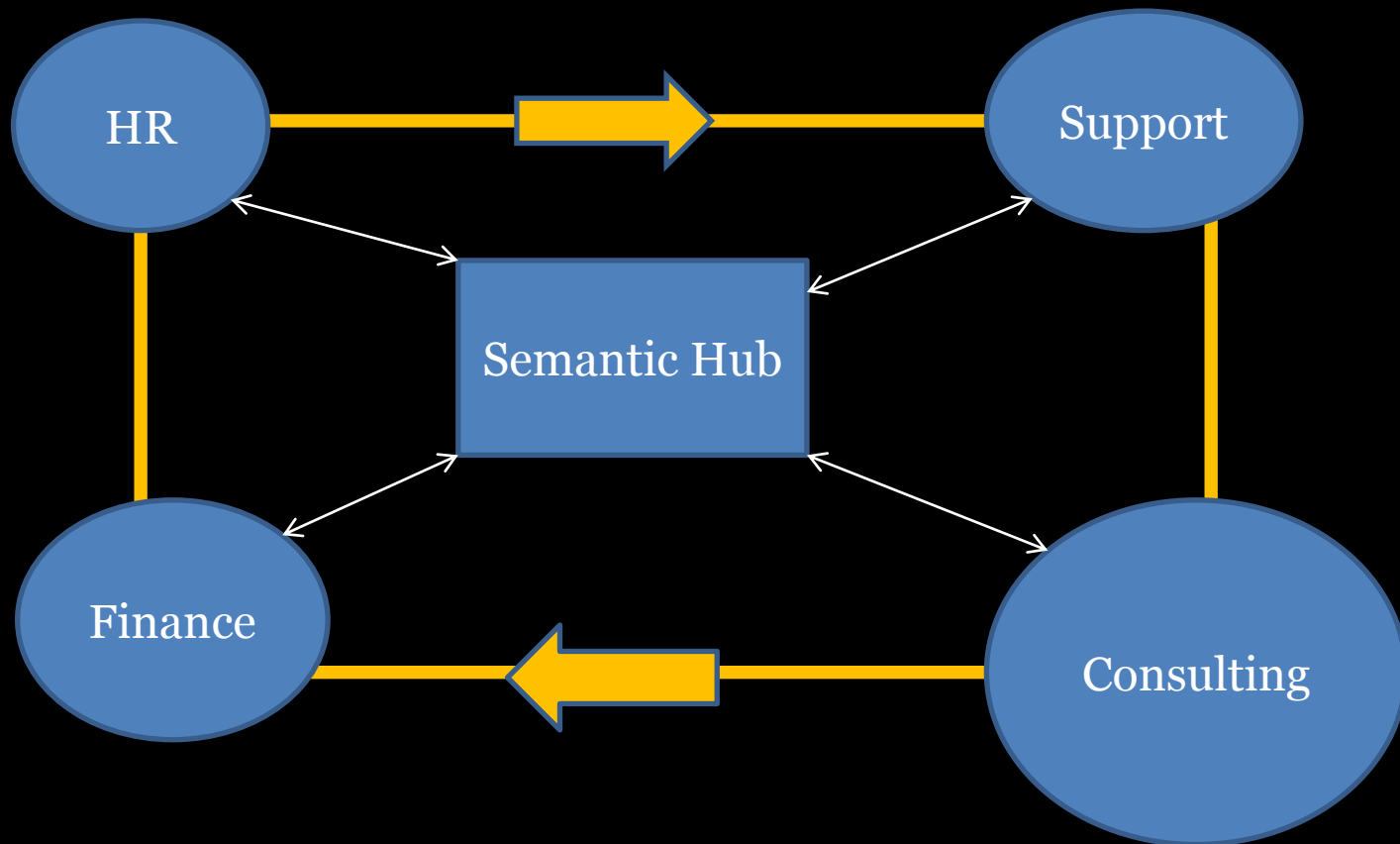
Change is Expensive

Data cannot be merged without special case code

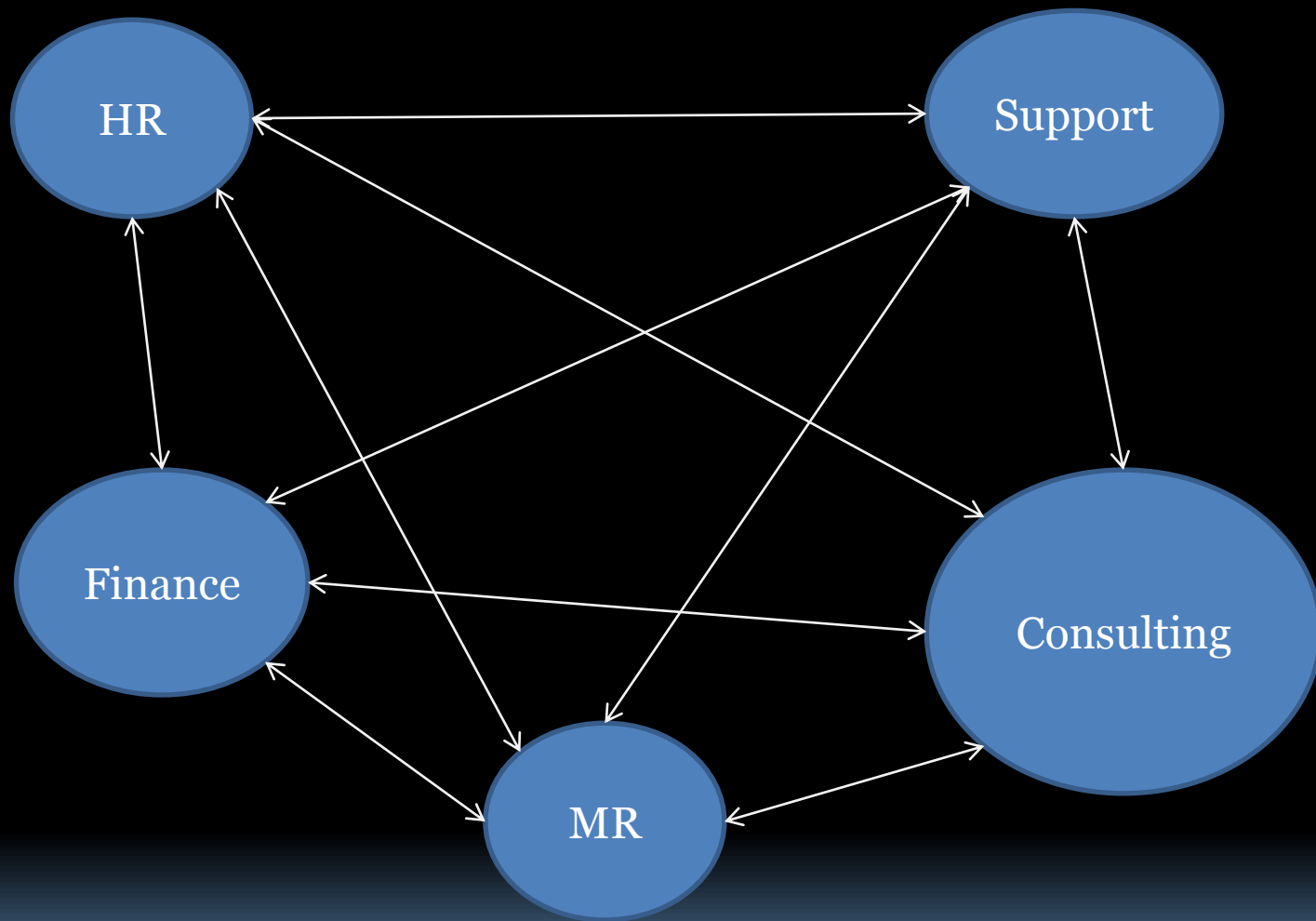
SDShare Integration and Data Flow



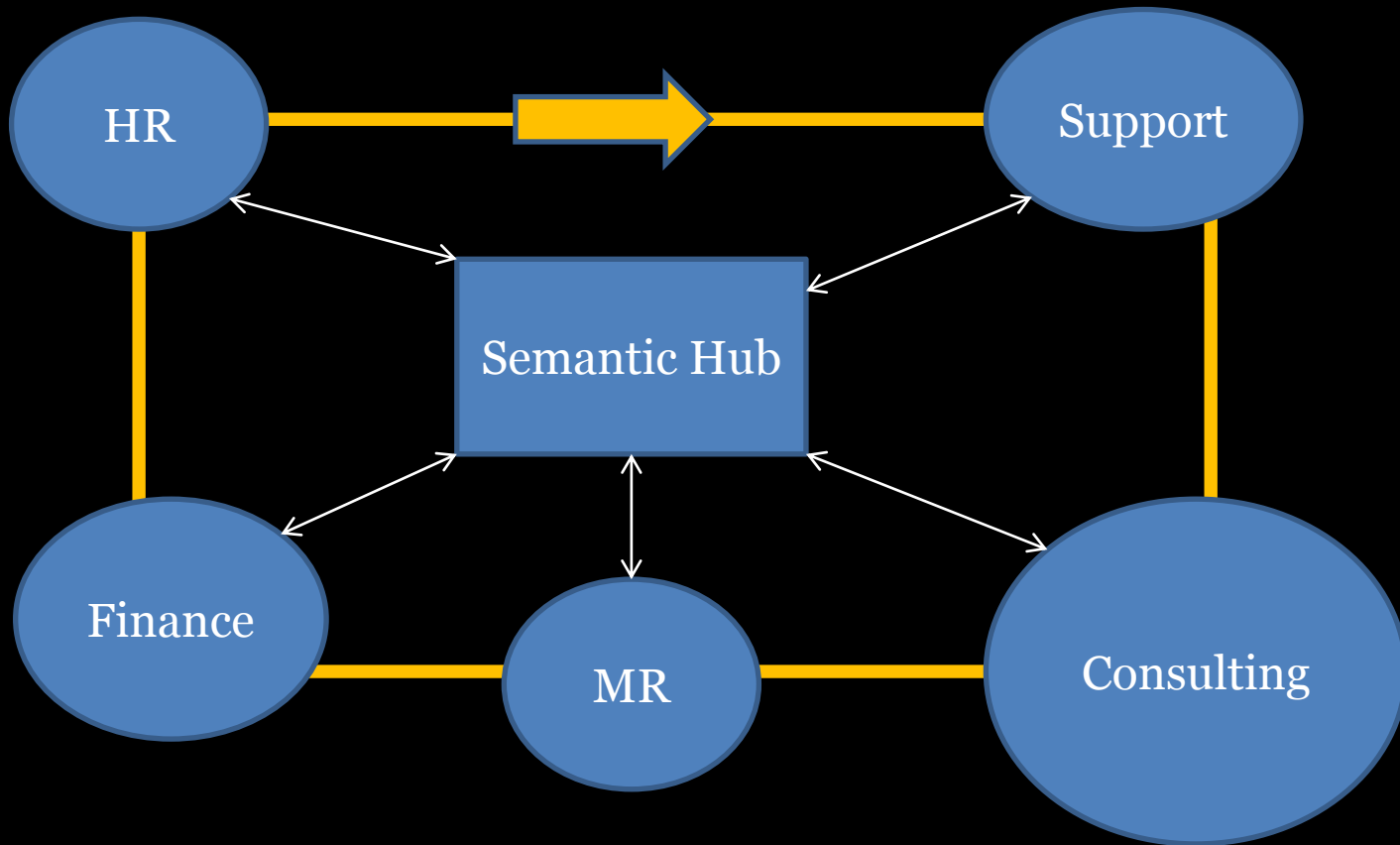
SDShare Integration and Flow



Change is not simple



SDShare Change is Simple





Goals of SD-Share

- Expose data for consumption by multiple clients
- Utilise open standards
- Be agnostic to data structure and format, schema-less on client and server
- Support peer-to-peer sharing not just client server
- Remember where data came from
- Support scalable data synchronisation
- Support bootstrapping of new 'client' nodes
- Low barrier to entry



SD-Share Protocol

Originally developed as part of the CEN eGovernment Workshop. Published as a CEN Workshop Agreement (CWA).

<http://www.egovpt.org/fg/CWA> Part 1b



SDShare Protocol

Plan is to make SDShare an ISO standard.



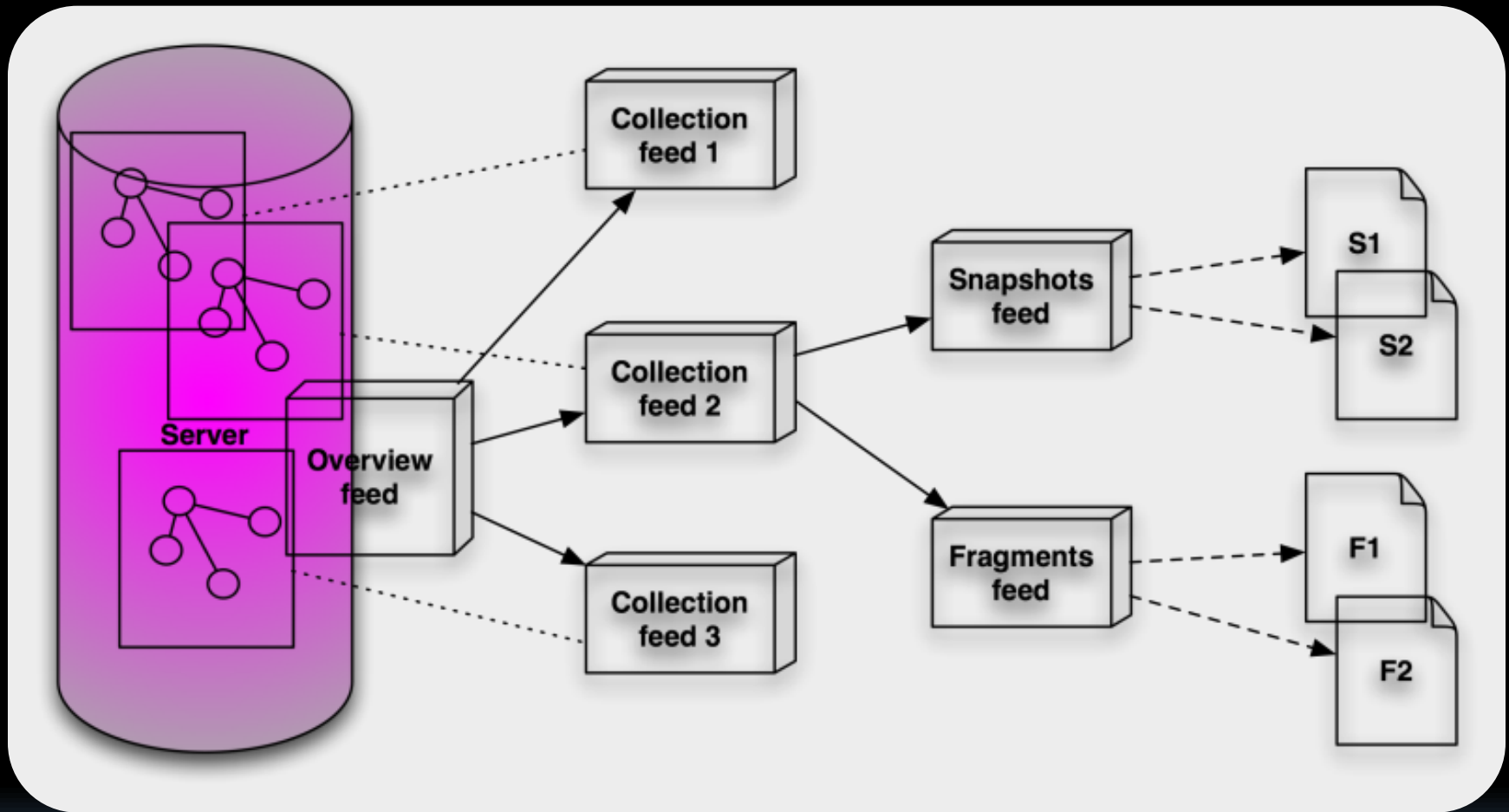
SDShare Protocol Overview

The protocol uses ATOM feeds as a way to expose dataset snapshots and data entities from a source system.

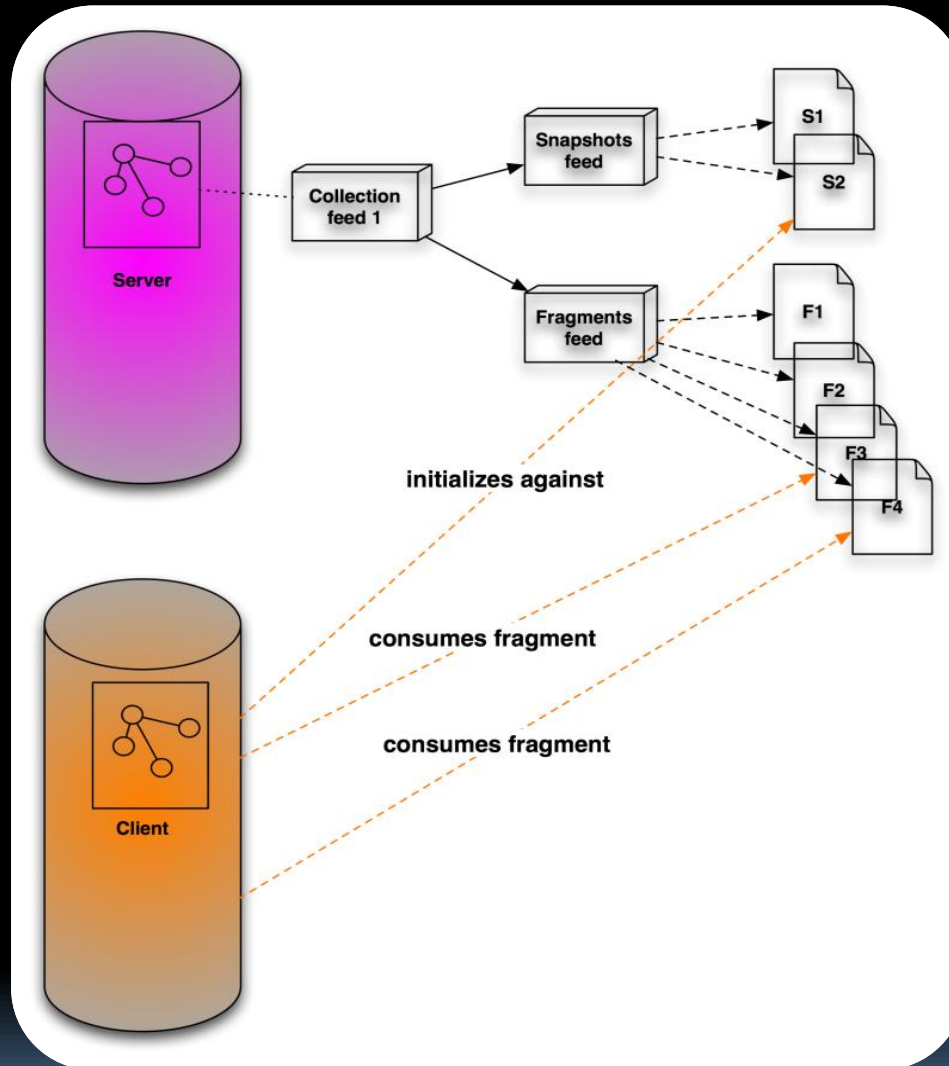
A client processes the ATOM feed and for each entity entry updates it's local store. Entities are published as RDF or XTM.

This is a simple pull system where all entities are addressable as web resources.

SDShare Server Organization



SDShare Client Interaction



SDShare Collections Feed



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Published Collections

[Simple Test Collection](#)

14 December 2011 09:27

Collection for testing clients.

[Employee Data](#)

14 December 2011 09:27

Data from HR system (odbc data source)

SDShare Collection Feed



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Employee Data Feed

[Snapshot feed for Employee Data](#)

14 December 2011 09:28

[Fragments feed for Employee Data](#)

14 December 2011 09:28

SDShare Snapshots Feed



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Employee Data Snapshots

[Complete View \(snapshot\)](#)

14 December 2011 09:30

SD-Share Fragments Feed



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Employee Data Fragments

[Kal \(Person\)](#)

29 November 2011 00:00

[Axel \(Person\)](#)

29 November 2011 00:00

[Lars \(Person\)](#)

29 November 2011 00:00

[bob \(Person\)](#)

29 November 2011 00:00

[fred \(Person\)](#)

29 November 2011 00:00

[jill \(Person\)](#)

29 November 2011 00:00

[bernard \(Person\)](#)

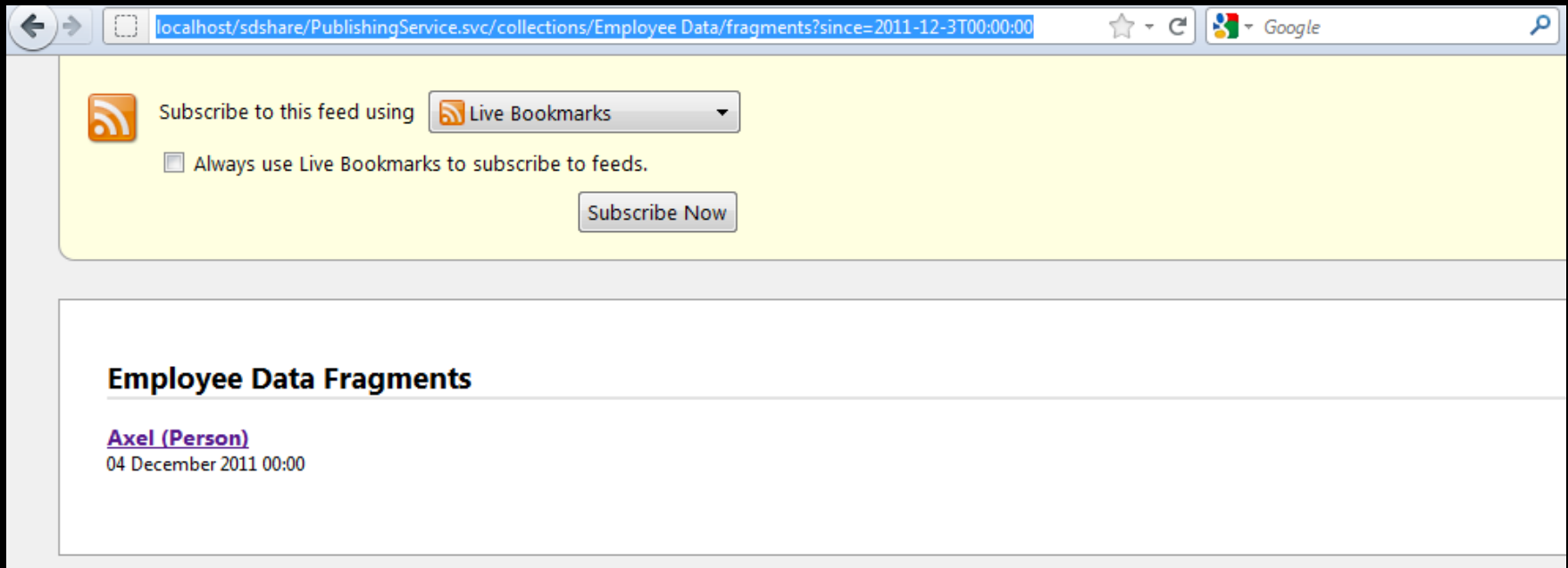
29 November 2011 00:00

[gra1 \(Person\)](#)


29 November 2011 00:00

Fragments Since

<http://localhost/sdshare/PublishingService.svc/collections/Employee%20Data/fragments?since=2011-12-3T00:00:00>



The screenshot shows a web browser window with the address bar containing the URL: `localhost/sdshare/PublishingService.svc/collections/Employee Data/fragments?since=2011-12-3T00:00:00`. The browser's search bar shows 'Google'. Below the address bar, there is a yellow banner with a feed icon and the text 'Subscribe to this feed using Live Bookmarks'. A checkbox labeled 'Always use Live Bookmarks to subscribe to feeds.' is present, and a 'Subscribe Now' button is at the bottom right of the banner. Below the banner, the page title 'Employee Data Fragments' is displayed. Underneath the title, the text 'Axel (Person)' is shown in purple, followed by the date '04 December 2011 00:00'.

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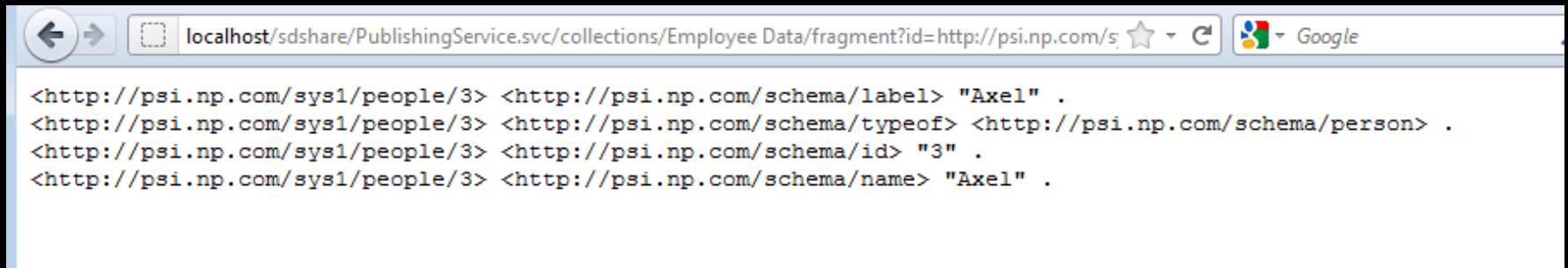
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Employee Data Fragments

[Axel \(Person\)](#)
04 December 2011 00:00

SD-Share Fragment

<http://localhost/sdshare/PublishingService.svc/collections/Employee%20Data/fragment?id=http://psi.np.com/sys1/people/3>



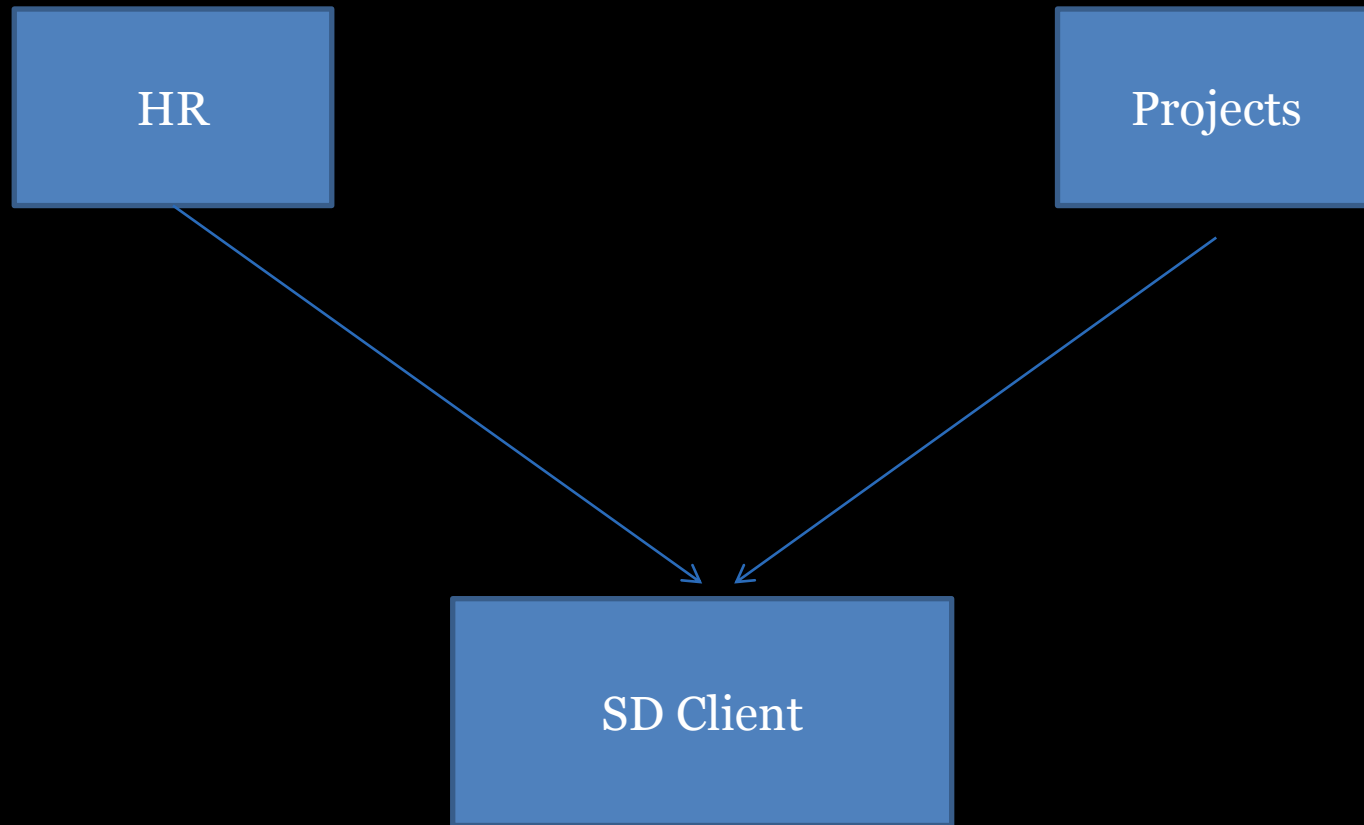


SDShare Simple

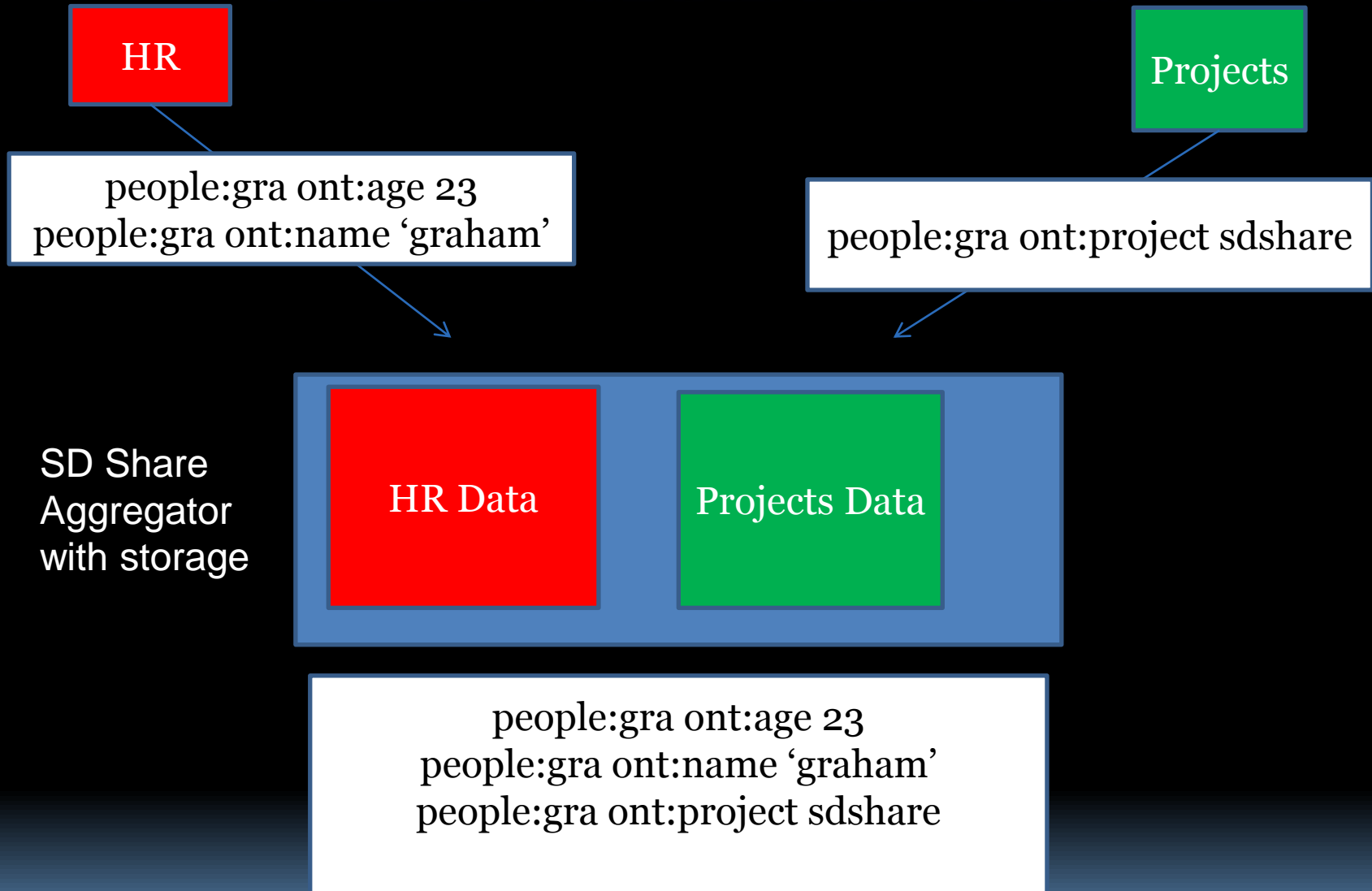
All Data exposes and accessed via ATOM, and URLs

All Data represented using RDF or XTM

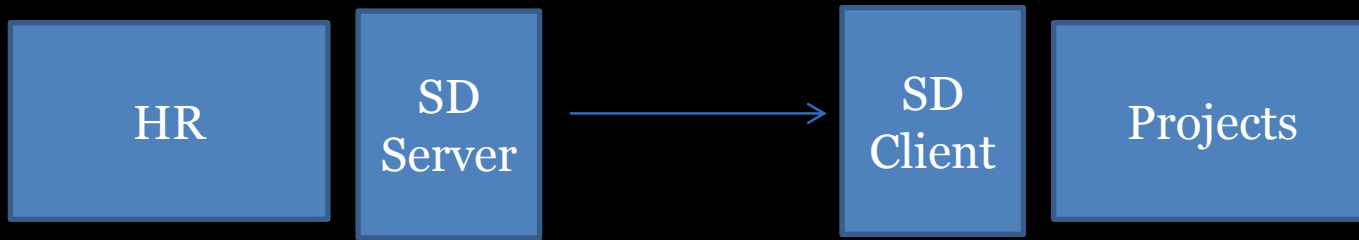
SD-Share Fragment Merging



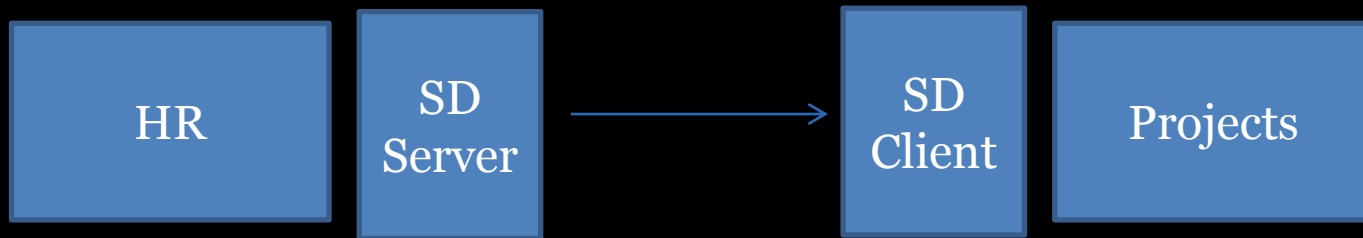
SD-Share Fragment Merging



SD-Share System Consumer

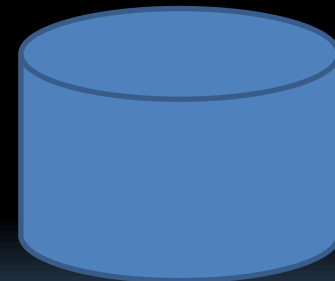


SD-Share System Consumer

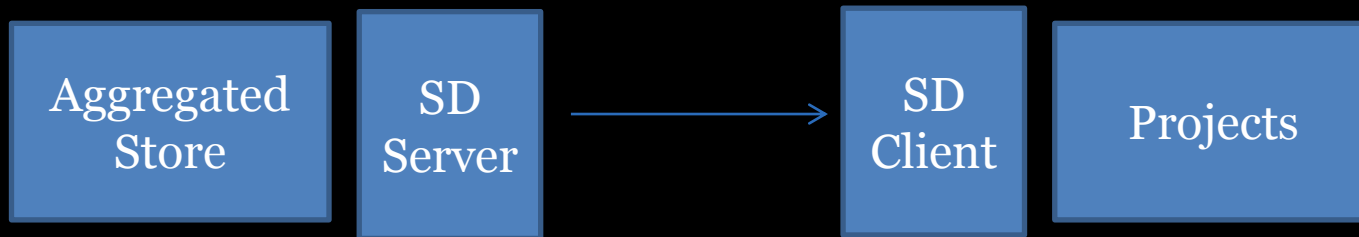


people:gra ont:age 23
people:gra ont:name 'graham'

ID	NAME
Gra	graham

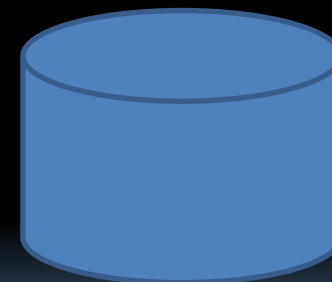


SD-Share System Consumer



people:gra ont:age 23
people:gra ont:name 'graham'
people:gra ont:skill 'sdshare'
people:gra ont:skill 'rdf'

ID	NAME
Gra	graham





Use Cases

Master Data Syndication

Information/Data Integration

Data Aggregation



Master Data Syndication

Propagation of Master Data

- Helps with the use of common identifiers and terms in different systems
- MDM store manages terms and exposes them for all client systems to access and use
- Benefit: Quality re-use of MDM terms across the enterprise.
- Benefit: Many systems can be ‘masters’.



Data Aggregation

Merging Data About the Same Subject

- Multiple systems with partial information about a subject
- Create a holistic view to query, display or process
- Simple protocol makes it easy to plug in new systems.
- RDF data makes data merging simple



Data Integration

The feedback loop

- Ability to feed information back to source systems using same mechanisms.
- In the ‘loop’ now means getting augmentations from other systems. You now know what they know.



Data Publishing

Producing Data for Other Systems

- Expose data rather than applications
- Make data available for internal or external use
- Allows data to be used in innovative and unforeseen ways



Data Publishing

Overcome Political Barriers

- Small cost to join the eco-system.
- No one has to give up their system
- Minimal change requests



SDShare

Questions?