S3 Text. Things to consider when choosing a resolver approach

There are basically three kinds of approaches to serving URIs on the web: (a) “native” URIs that require no redirection at all (as in Fig. 1, ZFIN). (b) “in house” URIs that redirect internally (as in Fig. 1, Ensembl); and (c) schemes using an external resolving authority (as in Fig. 1, Biosamples). Representative resolver authorities that meet the JDDCP (https://www.force11.org/datacitation, [1]) criteria are e.g. DOI (DataCite[2], CrossRef[3]), Identifiers.org[4], Handle.net[5], PURL[6], EPIC[7], N2T[8] and NBN[9]; these are described in Starr et al[10]. Additional resolver authorities that meet the criteria but which are not described therein are EPIC[11] and w3id[12]. Note that PURLs under the authority of PURL.org had gone into read-only mode and were therefore no longer adherent to the JDDCP principles; however, the InternetArchive[13] has assumed responsibility for them as of September 2016[14].

Below are some additional criteria you may want to consider in choosing one of these resolvers.

- Does the resolver retain the native Local Resource Identifier that you issue (eg. identifiers.org, n2t.net), or does it instead issue a new one? (eg. DOI).
    - If the resolver *does* issue a new identifier, what is the typical turnaround time between request and fulfilment? Can you obtain an identifier before you yourself need to use it?
- Would you or your institution need to pay fixed/variable costs to have your identifiers resolved? If the service is free for those that need their identifiers resolved, who pays to maintain the service?
- Is the service capable of issuing and managing identifiers in the kinds of volume you would require?
- Change management policy
    - Will you need to change the data which is referenced by the URI, and if so does the resolving system under consideration permit such change?
    - Is the object to which the URI resolves allowed to be removed?
    - Does the resolver support numerical suffixing for versions of the LRI?
    - If new LRIs are issued for each version of an entity, how can versions be related to each other?
- Will you require the resolver to support multiple resolving locations (mirrors)?
- Does the resolver support content negotiation at resolver’s HTTP URI?
- Does the resolver collect, index, and/or curate metadata about individual entities?
    - If so, is the metadata that is collected relevant for the types of entities identified?
- Does the resolver collect, index, and/or curate metadata about collections of entities (e.g. whole databases)?
    - If so, is the metadata that is collected relevant for the type of collection?
- Does the resolver support controlled access for confidential data?
- Is the resolver cross-discipline?

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