

 <p>pilin persistent identifier linking infrastructure</p>	<p>web: http://resolver.net.au/hdl/102.100.272/0N8J991QH email: policy@pilin.net.au</p>
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Version History

Version	Date	Status & changes	Expression identifiers
V1.0	2008-06-30	RELEASE: Initial release to public	PILIN/YD9TRDTRH hdl:102.100.272/YD9TRDTRH

Namespace Management: One or many?

Pros and Cons of Multiple Namespaces

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To cite *this* version of this work, use <http://resolver.net.au/hdl/102.100.272/YD9TRDTRH>

This outlines pros and cons for having identifiers provisioned over a national context through either one central namespace, or several decentralised namespaces. It is intended for ANDS planning as to namespace deployment in its national identifier service. It is informed by the PILIN Guidelines document "Considerations for Ownership of Identifier Management Systems", <http://resolver.net.au/hdl/102.100.272/461BL3DQH>

Having different namespaces can be either **devolved** (no coordination between namespaces), or **federated** (trust arrangements between namespaces, some community coordination).

Having a single namespace can be either **centralised** (one namespace for everyone), or **autonomous** (the namespace is broken up somehow between the parties, e.g. as suffix ranges).

To highlight the differences between the scenarios, we mainly contrast centralised and devolved arrangements. Both federated and autonomous arrangements in particular are not yet well defined, and would take a while to formulate and test in practice. Centralised and devolved identifier management, on the other hand, reflect existing practice.

Pros for single namespace (centralised, [autonomous]) over multiple namespaces

- *Mobility of management* within the larger namespace domain is easy. If research data is moved from RMIT to QUT, and both institutions use the one namespace, the identifier for the research data can be kept up to date without any special trust arrangements (ANDS is taking care of identifiers for both parties).
- *No local management burden*. Institutions not already managing identifiers are not burdened with deploying identifier system infrastructure: they piggy-back off the central namespace, using only exposed services, and do not have local responsibility for reliability, backup, mirroring, etc.
- *No local point of failure*. Because of the scale and resourcing of the single central namespace, it is less likely to be a single point of failure than the devolved identifier management system.

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- *Consistency of policy.* The single namespace can more easily enforce consistent policies and services across all its identifiers than in a devolved scenario, enabling improved discovery and cross-disciplinary use.

Cons for single namespace over multiple namespaces (devolved, [federated])

- *Migrating and rehoming* an institution's or project's identifiers becomes more difficult. The identifiers of a project form a natural unit for persisting; if their management is to be transferred to another body for persistence (including archiving), it is easier to transfer them as the entire contents of a namespace (e.g. Handle rehoming), than as individual identifiers (while leaving other identifiers in place).
 - Autonomous management is meant to identify subnamespaces and deal with this problem—but has not been realised yet, and requires tight control of label policy—so the labels end up including subnamespace names.
 - Centralised hosting obviates this: there is no local management in the first place. But if that does not scale, and there is some local management (devolved), then migrating identifiers you no longer manage is still a problem.
- *Policy management* is better devolved to local stakeholders than managed centrally. Local stakeholders are bound to adapting identifier management to their requirements. Distinct policies are more easily enforced by identifier management systems onto separate namespaces, than onto different runs of identifiers in the same namespace. Unless ANDS has the exact same policy profile for all its identifiers (with a very wideranging understanding of policy), it will not be able to accommodate different discipline requirements easily in the one namespace.
 - In a shared namespace (federated), there is the risk that the policies you apply to your run of identifiers spill over into another organisation's run of identifiers on the same namespace; addressing this requires coordination between the parties, which is why identifier management becomes federated. There is much less risk of that if the namespaces are left distinct.
- *Access management* is also better devolved to local stakeholders than coordinated centrally, which is easier if there is local control of the namespace rather than piecemeal access management of identifiers on a shared namespace.
- *Scalability.* From a technical point, identifier services will be more efficiently used if there is not a single point of entry for all identifiers nationwide, which a single namespace would promote. (This can be mitigated with load balancing and mirroring.)
- *Reality of devolved identifiers.* The identifier space already has devolved identifier management, with institutional repositories using their own Handle servers. ANDS utility services will need to deal with these existing identifiers outside its own namespace, at least for discovery—whether it offers identifier management centrally or not. Repositories in use with persistent identifiers already have established practice of managing those identifiers locally (devolved).
- *Reversability.* If namespaces are devolved now, they can be centralised later—the national provider can take over management of those separate namespaces, and coordinate them centrally. The reverse is more difficult: if a single namespace is used now, and institutions want to take over their own identifiers and manage them locally later, they will need to break up the namespace, which is doable but messier. (The simplest

mitigation would be to alias the disaggregated identifiers, but that means maintaining the single namespace as a forwarder in perpetuity.)