



Perl within the ~evolution~ of technology portfolio of National Library of Finland

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Abstract

- This talk tells about the creation and use of the technology portfolio of the National Library of Finland.
- The technology portfolio lists the applications, databases, frameworks and programming languages that are in use.
- In different teams, Perl usage varies - some use it a lot and in some it is fading away.

National Library of Finland



- Part of University of Helsinki
 - Origins in Academy of Turku, 1640
 - After Turku fire, library moved to Helsinki
 - Ample book donations from Europe recreated the destroyed collections, new base for library
- 1990 Centre for digitization and preservation was established
 - Digitization starts
 - Digi.nationallibrary.fi : one of the first online systems for presenting & searching from text contents
 - (Launched on year 1998 with first 100.000 pages)

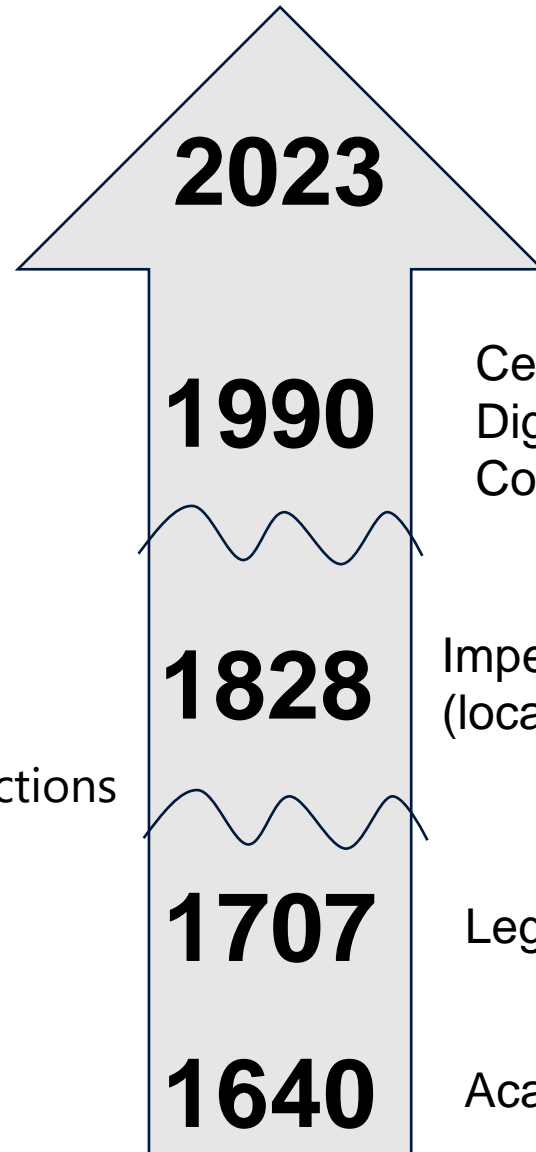
Brief timeline of National Library



Donations from Europe



Fire of Turku destroys most of the collections



Academy of Turku

1640

Legal deposit law

1707

Imperial Alexander University in Finland
(location moved to Helsinki)

1828

Centre for
Digitization and
Conservation

1990

2023

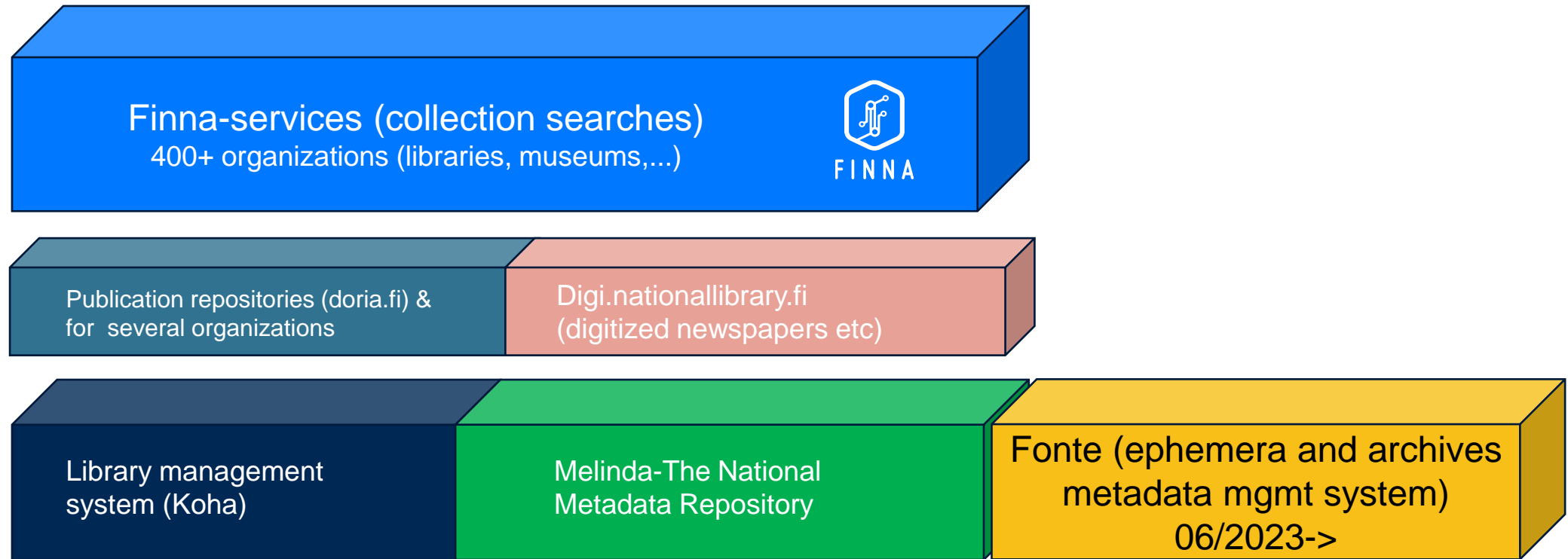
● First computer in Finland (1958) IBM650

● First automatic phone central in Finland (1922)

● Queen Victoria's reign (1837-1901)

● United States Declaration of Independence (1776)

Some services for National Library of Finland



Challenge

- Lots of different information systems
 - From different time periods
 - From different projects
 - With different styles and programming languages
 - In different lifecycle phases (some phasing out, new things developed)

- Multiple teams, multiple goals

Solution idea: Create a Technology Portfolio

- Starting point on 2019
- All IT/technical people got together and workshopped our current & desired tool list
- E.g. The P-languages added to portfolio (Perl, PHP, Python)

Q: Who is this meant for?

A: When you are planning to develop new software, submit new technology propositions here. This way we all have the information of who wants to do what, where and how regarding software development technologies. [1]

Technology Portfolio Concept

- Information storage of what we have, 4 categories
 - **Applications**
 - E.g. Apache, Koha
 - **Databases**
 - E.g. Oracle, ElasticSearch, PostgreSQL
 - **Frameworks**
 - E.g. AngularJS, Flask, ...
 - **Programming languages**
 - E.g. Perl, Python, Java, ...
- Which “thing” goes where - discussions

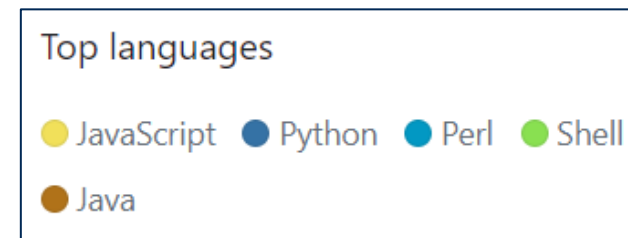
Technology Portfolio People

- Portfolio is managed by the Applications Interoperability Group
 - About dozen+ people from various groups and units
 - Helps in sharing info and learning across units
- Idea to help in codebase management (in the long run)
 - We have awareness of which languages are in use
 - & idea for which we need competencies in the future
- National Library of Finland is quite large “code house” , too...



National Library of Finland
Repositories of the National Library of Finland (Reporting security issues: <https://www.helsinki.fi/en>)
21 followers Helsinki, Finland <http://www.nationallibrary.fi/> kk-it-tukipalvelut@helsinki.fi

Overview Repositories 317 Projects 5 Packages People 1



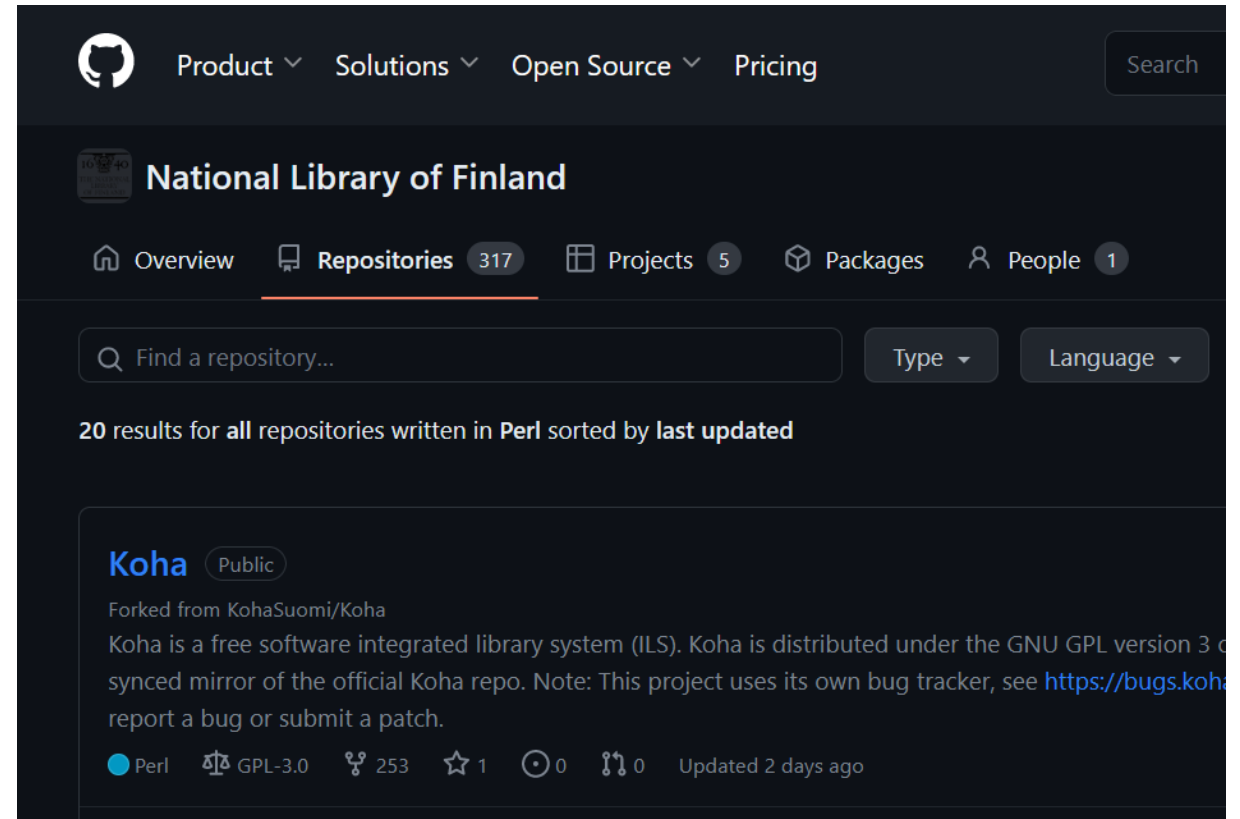
Top languages

- JavaScript
- Python
- Perl
- Shell
- Java

Perl Codebase in National Library of Finland

- 20 Perl repositories
 - Largest Koha
- 20 python repositories
 - Largest Annif

▪ <https://github.com/NatLibFi/>



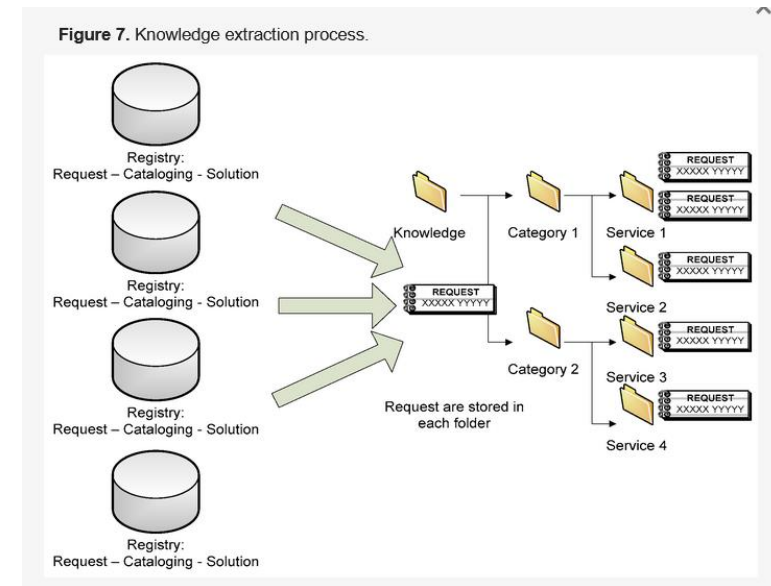
The screenshot shows the GitHub interface for the National Library of Finland. The top navigation bar includes 'Product', 'Solutions', 'Open Source', and 'Pricing'. The main header displays the organization name 'National Library of Finland' and navigation tabs for 'Overview', 'Repositories' (317), 'Projects' (5), 'Packages', and 'People' (1). A search bar is present with filters for 'Type' and 'Language'. Below the search bar, it indicates '20 results for all repositories written in Perl sorted by last updated'. The first repository listed is 'Koha', which is a public fork from KohaSuomi/Koha. The description states that Koha is a free software integrated library system (ILS) distributed under the GNU GPL version 3.0, and it is a synced mirror of the official Koha repo. It also notes that the project uses its own bug tracker and provides a link to <https://bugs.koha-community.org/> for reporting bugs or submitting patches. The repository statistics show it is written in Perl, uses the GPL-3.0 license, has 253 forks, 1 star, 0 issues, and 0 pull requests, and was updated 2 days ago.

Perl and others... in Technology Portfolio

- Perl going strong -> e.g. because of Koha use
- In some groups Perl usage has decreased over the years (more Java and Python and php)
 - E.g. TurkuNLP research group uses python for natural language processing
- Language models and code generation?
 - *“Overall, 1833 runs, or **45.8%** of the total number, lead to executable code. However, this percentage varies greatly according to the tested language.”*

Technology portfolio in bigger picture

- It is a new perspective to technology management
- Increases awareness
- Gives structure
- Flexibility – what ever fits the purpose best
- Useful to discussion with other organizations
 - National Library & University of Helsinki IT



Mera Macías C, Aguilar Alonso I. Proposal for the Identification of Information Technology Services in Public Organizations. *Symmetry*. 2019; 11(10):1269. <https://doi.org/10.3390/sym11101269>

Box of Portofolios Exists



Technology Portfolio



Standards Portfolio



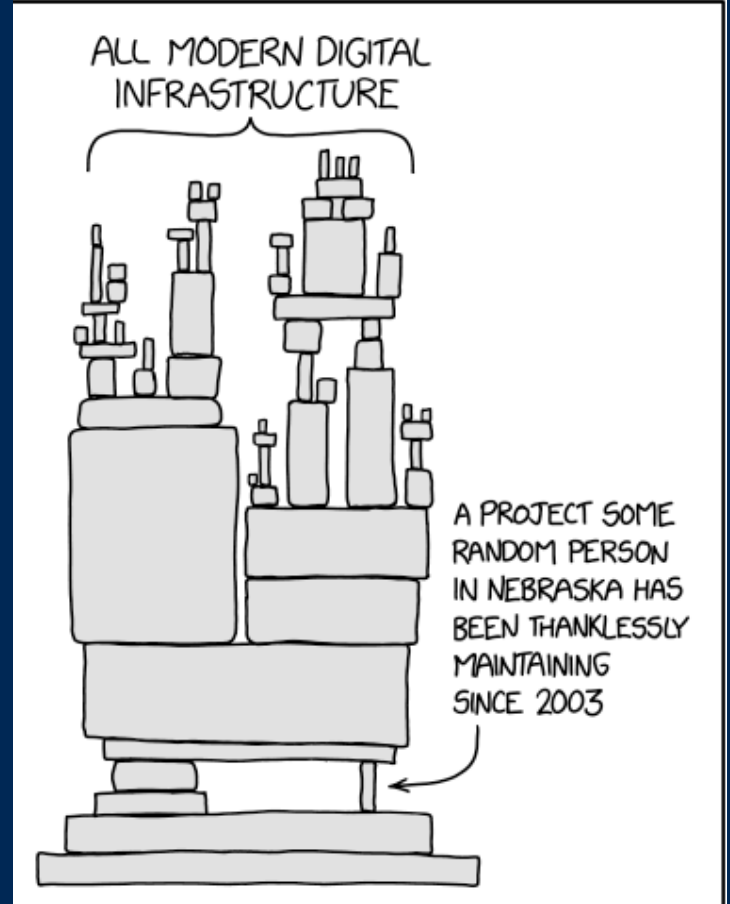
Project Portfolio



Information Systems Portfolio

Summary (1/2)

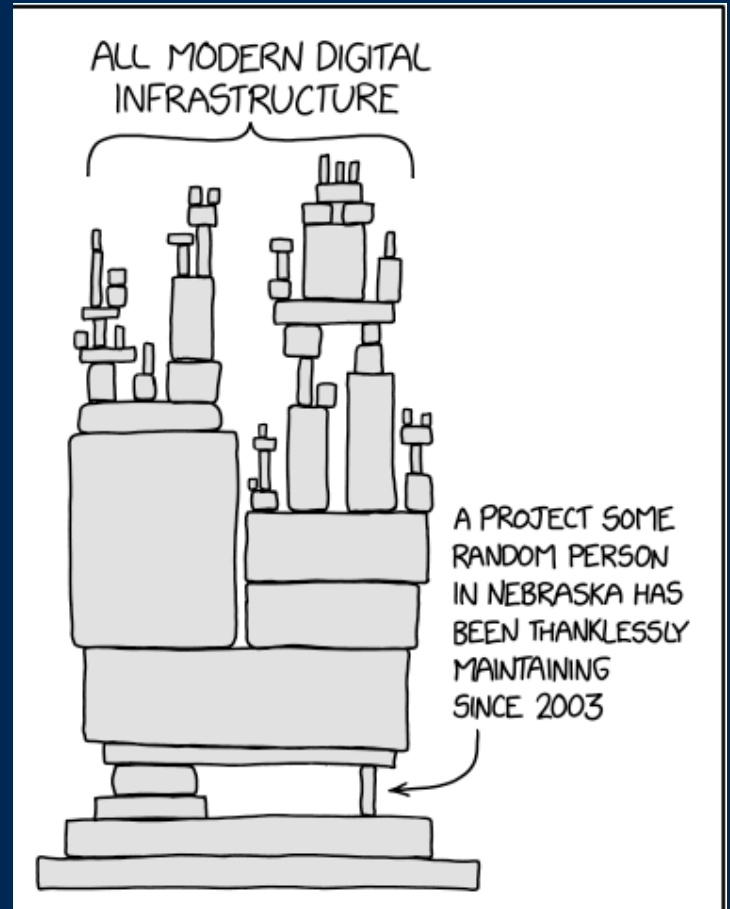
- Technology portfolio is a nifty tool to store information across organization
 - Keep it (suitably) light and easy to work with
 - Requires maintenance
 - Updates also "in depth", additional metadata



Source: <https://xkcd.com/2347/>
"Dependency"

Summary (2/2)

- Things to consider in the future
- Big/important Modules
 - "Background checks"
 - licenses -> when can something be used?
- Incoming EU Cyber Resilience Act ?
<https://digital-strategy.ec.europa.eu/en/library/cyber-resilience-act>



Source: <https://xkcd.com/2347/>
"Dependency"



www.nationallibrary.fi

Thank you!



Eos, 01.01.1895, nro 3_R, s. 5
<http://digi.kansalliskirjasto.fi/aikakausi/binding/900573?page=5>