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HOW IS DEVELOPMENT AND COLLABORATION DONE IN PUBLIC SECTOR OPEN SOURCE SOFTWARE PROJECTS?

Insights from Six Mature Case Studies

Cases

- EnergyPlus, National Research Institutes under US Department of Energy
- OS2forms, Danish municipalities under OS2
- Oskari, National Land Survey of Finland
- Geotrek, French National Parks
- Démarches simplifiées, Interdepartmental Administration for Digital (DINUM)
- IO-app, PagoPA in Italy



Development practices

- Development often centred to a core teams of 15 or less, who produce > 80 percent of the code base
- Open development and release using GitHub
- Formal and agile processes, with structured quality assurance processes
- Aligns with fact that development is generally centred to one main organization
- Software generally reported as high in quality, usability, and functionality



Type of sponsorship

- Centralized sponsorship
 - Development is carried out or sponsored by, and in extension dependent on, one or a few resourceful PSOs.
 - OSS typically originates main PSOs, and are of business critical character, warranting sponsorship
- Decentralized sponsorship
 - Multiple PSOs collaborate through pooled resources, using external service providers



Development resources

- Development typically performed within the bounds of one organization, generally using procured resources, through
 - vendors and service suppliers completely (decentralized sponsorship)
 - consultants along with internal engineers (centralized sponsorship)
- PagoPA (IO-app) main exception where the ambition is to grow internal capabilities and vendor-independence
- External dependence aligns with general lack of internal capabilities among PSOs
- Suppliers highlighted as critical for sustainability. Rotation of consultants can stimulate growth.



Planning and decision making

- Generally performed top-down from the PSOs funding the development
 - Through technical steering committees with select or full representation of sponsors
 - Through direct communication with vendor, who in turn synchronizes needs
 - Through internal in teams with differing levels of consideration from external users
- Exclusion of, or full coordination, by vendor risk causing unrealistic requests, or soft lock-in respectively
- Vendors typically from national or local context, highlighting close relationships and contacts as preferable



Photo: <https://pixabay.com/photos/baby-boss-chair-infant-portrait-4861972/>

Communication

- All projects use some form of public communication channel
- “Closed” communication also present
 - inside vendors or the larger PSOs driving development.
 - In direct communication between users and vendor
- Risks creating a cliques of isolated development, unsynchronized users, and potential soft lock-in



Photo: <https://pixabay.com/photos/flamingos-birds-pink-animals-bird-1335042/>

Community engagement

- Communities typically user-focused (PSOs mainly), limited in size and contributions.
- Contributions typically in forms on
 - Funding,
 - Subject-matter expertise,
 - Requirements engineering,
 - Quality assurance



Photo: <https://pixabay.com/photos/limb-males-meet-meeting-together-818202/>

User base

- Typically limited amounts of users, centred to PSOs in the respective countries (e.g., municipalities, national parks, research labs, ministries)
- Somewhat higher for OSS projects with decentralized sponsorship
- Number of end-users much higher as the OSS usually power public digital services and infrastructure



Sustainability

- Centralized sponsorship
 - Dependence of main PSO(s)
- Decentralized sponsorship
 - Dependence of collective funding
 - Dependence of supplier interest and presence



Open Source Software in the Public Sector: 25 Years and Still in Its Infancy

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NEWS ARTICLE | 13 December 2024 | Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs | 1 min read

Commission launches call for evidence and public consultation on the evaluation of the Public Procurement Directives

The Commission has launched a call for evidence and opened a public consultation to collect evidence, information, data, and feedback on how Public Procurement Directives 2014/23/EU, 2014/24/EU and 2014/25/EU have performed.

Revision will integrate “non-price criteria” – traditionally, EU procurement rules have privileged the ‘most economically advantageous’ (typically lowest price) offers, to ensure value-for-money and competition.



2024/903

22.3.2024

REGULATION (EU) 2024/903 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 13 March 2024

laying down measures for a high level of public sector interoperability across the Union (Interoperable Europe Act)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 172 thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee ⁽¹⁾,

Having regard to the opinion of the Committee of the Regions ⁽²⁾,

Acting in accordance with the ordinary legislative procedure ⁽³⁾,

A Union entity or public sector body shall make available to any other Union entity or public sector body that requests it an interoperability solution supporting a trans-European digital public service, including the technical documentation, and, where applicable, the version history, documented source code and the references to open standards or technical specifications used...

When deciding on the implementation of interoperability solutions, Union entities and public sector bodies shall prioritise the implementation of interoperability solutions that do not carry restrictive licensing terms, such as open source solutions...