Setting up an OSPO at a power utility

Lucian Balea, OnRamp Meeting, 17 June 2022

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Context
About RTE

RTE operates, maintains & develops the French electricity transmission network

1st European network with 105,000 km of high and extra-high voltage lines, this vital infrastructure guarantees everyone, 24 hours a day, a safe, economical and environmentally friendly power supply.
We want to meet the power system transformation challenges while preserving operational performance.
Building an Open Source capacity aiming at…

• an acceleration by reusing what exists and sharing efforts, allowing to build faster and cheaper software,
• improved modularity, interoperability, evolutivity and shorter release time cycles,
• cutting-edge technological and business model innovation,
• access, through collaboration, to wider and more diverse skills and to a diversity of viewpoints,
• reduced vendor lock-in or customer-specific approaches that impede velocity, cost-efficiency and innovation.
The OSPO
The OSPO

Learning from more advanced industries: a successful open source strategy requires a structured organization, i.e. an Open Source Program Office

An OSPO has been set up at RTE since 2019 with the following missions:

• Understand open source (compliance, governance, business models) and educate internally
• Promote an open source ambition, monitor objectives and milestones
• Promote adaptations of internal business processes (development practices, procurement) in accordance with the open source strategy
• Disseminate best practices, implement learning loops, support projects to go open source
• Coordinate the interaction with external stakeholders, contribute to community building
• Manage the specific compliance and trust challenges of open source
The OSPO

Structured in a lean way

- 1 full time Open Source Program Officer (access to C-level management is a key enabler)
- A network of (part-time) contributors disseminated in the existing organization: 2 enterprise architects, 1 dev team manager, community/tech leads of open source projects, lawyer

Rationale:

- Limited resources
- Disseminate open source practices within the regular software activities
Main achievements
(what we are proud of)
The main stakes of open source collaborations lie in core-business applications of the industry.

Managing the frictions between internal and external roadmaps can become a tricky balancing act:

- Successful community building requires credibility, engagement, consistency.
- While internal business stakeholders may have shorter term expectations and other priorities.

→ Executive support was an essential milestone of our open source journey!
Industry strategy and community building

Imagining and triggering a shift at corporate and even industry levels following the path of other industries (applying proven best practices and avoiding reinventing the wheel)

Providing a 21st century plan of action to decarbonization through open source, open frameworks, reference architectures, and a support ecosystem of complementary projects.
Community growth 2018 - 2022
We followed a “start soon and small, ‘fail’ fast” approach

• Practicing helps demystifying
• Learning and onboarding from communities

Key milestones:

• Defining a licensing and contribution policy (favoring permissive licenses, contributing upstream)
• Implementing a compliance review process and checklist to push internal code to open source

Learnings

• Engaging with the community is an essential step to get value (the richness of the open source model lies more in the community than in the code)
• While building capacity to develop proprietary software requires significant effort (staffing, know-how), entry barriers are much lower with open source (leverage of existing community)
RTE is subject to European public procurement rules as an entity with “special or exclusive rights” operating in the energy sector.

**Goal:** require specific open source software in public procurement to better articulate software purchases and inhouse developments, in accordance with the open source strategy

**Confirmed by a legal analysis:** Procuring Open Source Software in European Public Sector

➡ Successfully implemented in two recent tenders
Main principles implemented in procurement templates

- Possibility to require specific open source components to fulfil specific functional needs
- Possibility to require open source (but no prescription on components) to fulfil part or all of the functional needs
- Definition of open source licenses based on Open Source Initiative and Free Software Foundation
- Requirement of permissive or moderate copyleft licenses
- Requirement of open governance for open source components (e.g. Foundations)
- Requirement of a compliance program in accordance with Open Chain specifications 2.0 (https://wiki.linuxfoundation.org/_media/openchain/openchainspec-current.pdf)
- Provisions allowing bespoke developments and documentation to be directly contributed to the corresponding upstream projects
- Possibility for RTE to commit to distribute bespoke developments and documentation under an open source license
Work in progress
(where we are still struggling)
Compliance

Started in 2018 with a few external compliance audits (before opening internal code)
• It enabled building legal understanding of licenses and compliance issues

A roadmap was then identified to set up an internal process based on the following:
• An open source license usage policy established and updated by the OSPO ✔
• Regular (automatic?) scanning of code bases and dependencies by each project and check of compliance with the policy ❌
• OSPO to be consulted by projects in case of deviation from policy (paralegal competence) and performing sporadic checks ✔
• Legal team to be consulted by OSPO in case of new or unclear issues ✔
Encountered issues

- Chosen tooling (Fossology) mostly suitable for thorough manual assessment but reveals hard to use in a decentralized way by projects with limited experience (and time availability)
- Rough usage of Fossology would lead to undetected issues (e.g. license issues with dependencies or non-code assets such as images, sounds, etc.)
- Raw scan results were systematically sent back to OSPO for interpretation

Way forward

- Experimentation of OSS Review Toolkit (ORT) to generate SBOMs
- Decision to become a founding partner of Hermine project (https://hermine-foss.org/) that aims at building an overlayer to ORT for compliance management
Cultural transformation

From a “control and forbid” mindset to a “motivate and enable” culture
(unlock control to unleash innovation)

•  Learn to work openly with the community / bring internal discussions to the community
•  Release soon, release often
•  Trust in technical communities
•  Acknowledge that sharing brings value (diffusion of information can create unexpected opportunities, diversity of viewpoints mitigates the risk of doing wrong)
Challenges faced along the way

- Teams too often work in silos
- Illusion that one can go faster alone
- Misconception that code could not be opened until it is perfect, finalized
- Insufficient time devoted to pair review, documentation
- Ignorance of open source compliance obligations despite large usage
And next?
Several challenges in front of us

- Systematizing SBOM production and exploitation across all open source and internal projects
- Broadening training and education on open source practices and culture
- Onboarding new projects and growing communities
- Improving our consumption of open source
- Collaborating with the community on security
Wrap up
Wrap up

Our open source journey

- The most challenging part?
- High focus topic at present
- 2 key projects running: SBOM and Hermine

- Accelerated learning from communities and foundations ("start soon and small, ‘fail’ fast")
- Individual coaching of projects still required
- Next step: widening training/education

- Executive support is a key enabler
- Accelerated learning from communities and foundations ("start soon and small, ‘fail’ fast")
- Investment at the start but benefits are materializing now

- Our first area of focus / Where we have been most successful
- Mainly focused on LF Energy
- Lesson learned: there is no right sequence, but this goal requires conviction and perseverance
Thank you!
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