

**JOHAN LINÅKER (RISE)**

# **MUNICIPAL COLLABORATION ON OPEN SOURCE SOFTWARE**

**- A lever for innovation in Smart Cities**



# What is Open Source Software?



# **Liberaly licensed, Collaboratively developed software**





**Liberal**ly licensed,  
Collaboratively developed **software**

# Liberaly licensed software

- Software available under an Open Source Software license
- License that follows the Open Source Definition and is approved by the Open Source Initiative (<http://opensource.org>)
- Anyone, for whatever reason, may inspect, use, modify the source code and redistribute
- Different conditions apply per license requirements





Liberally licensed,  
**Collaboratively developed software**



# Collaboratively developed software

- Software developed as projects by networks of individuals and organizations, aka. Open Source Communities
- "Members" of the community commonly both users and developers
- Are united by a common vision and goal around the Open Source Software.



# Open Source Software today

- Approximately...
  - 90+ % of all software contains Open Source Software
  - 75% (2020) of companies' codebases consists of Open Source Software (up from 36% 2015)
  - 56 million developers collaborate on Open Source Software through GitHub, a social coding platform. Expected to increase > 100 million 2025
  - Collaboration within and across verticals, including Energy, Automotive, Telecom, and Health





# Incentives vary

- Individuals:
  - Sense of belonging
  - Recognition for contributions
  - Solving a problem
  - Building a public resumé
- Organizations
  - Lowerd costs
  - Increased innovation
  - Improving brand and PR
  - Interoperability and sovereignty
  - Strategic tool
- Policy makers:
  - Increase transparency
  - Increase competition and economic growth



# Challenges slowing down adoption

- Lack of internal capabilities and dependency on external resources
- Uncertainties and lack of practice in considering OSS in an acquisition and procurement process
- Discoverability of OSS options in the planning-phase of an acquisition (see <http://offentligkod.se!>)
- Locked-in to a proprietary technology, standard, platform, or ecosystems since before
- Glances at neighboring municipalities and copies procurement structure





# Challenges slowing down adoption

- Uncertainties and fear for legal and security-related risks
- Cultural challenges in terms of risk aversiveness, short-term horizons, focus on own municipality
- Lack of sustainable political support and clear policies
- No coordination or organization in acquisition process nor development and maintenance stages
- ...





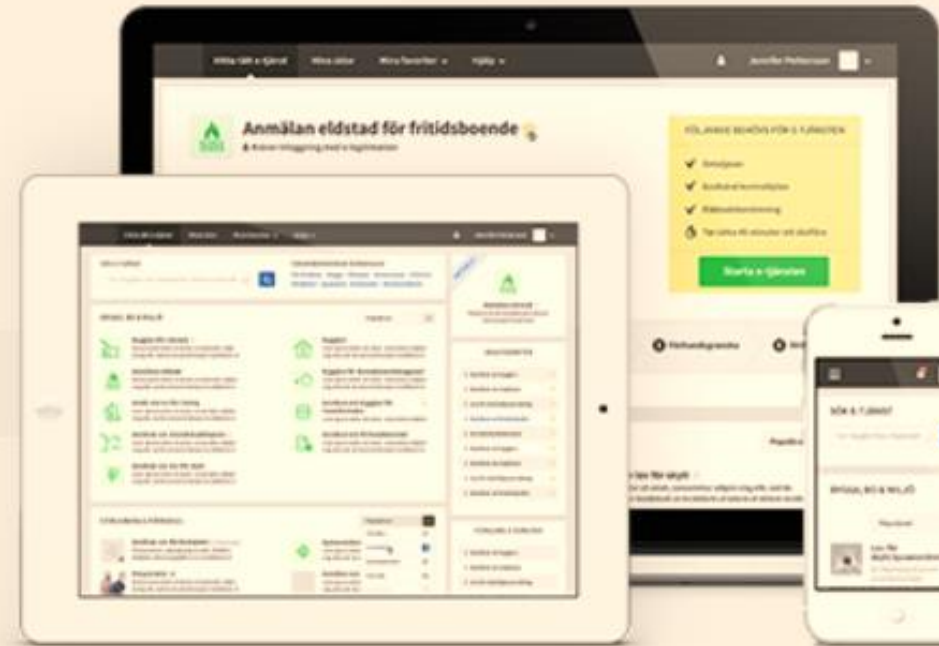
# How have others done?



# Municipal OSS community

- OSS e-service platform (APGLv3) established in 2014
- Outcome of the Regis EU project including five municipalities
- Productified by vendor including operations and management at a fixed price, as well as further development via traditional procurement,
- Now over 180 customers
- Municipalities currently experiencing technical debt and lock-in effects, investigating options moving forward

## En e-tjänsteplattform helt i öppen källkod



# Municipal Foundation for OSS

- OS2 –Association of 80+ Danish municipalities
- Projects are initiated by smaller numbers of municipalities with development procured from ecosystem of vendors
- Governance and project development process in place. Vendors sign an MoU.
- Copyright typically transferred to OS2.
- Technical committee responsible for long term maintenance together with vendor(s). Procurement through municipalities directly.
- Additional municipalities can join at any time. Financial logic based on size.





# Civil Society foundation for OSS

- Open Cities (Otevřená Města) – a Czech non-profit gathering 20 cities in Czech republic to support their digitalizations
- Recieves and hosts OSS projects initaited by public entities. Facilites joint requirements engineering and planning
- Currently hosts three projects, including Cityvizor - an open source tool for transparent municipal management
- Collaborates with civil tech and hacker communities
- Features implemented by municipalities directly. City of Prague a lead user. Collaboration with public service provider.

@johanlinaker | <https://linaker.se>



Photo by Ouael Ben Salah | <https://unsplash.com/photos/S2Wek5-5oEc>

# Lead User leading the way

- Lutece – an e-service platform with an ecosystem of 400+ plugins
- Developed by the City of Paris since beginning of 2000s
- Drives the development through internal IT department. Open to contributions, onboarding new cities and universities
- Pre-packaging containerized solutions enabling as-a-service deployment
- Working to grow community nationally and cross-border

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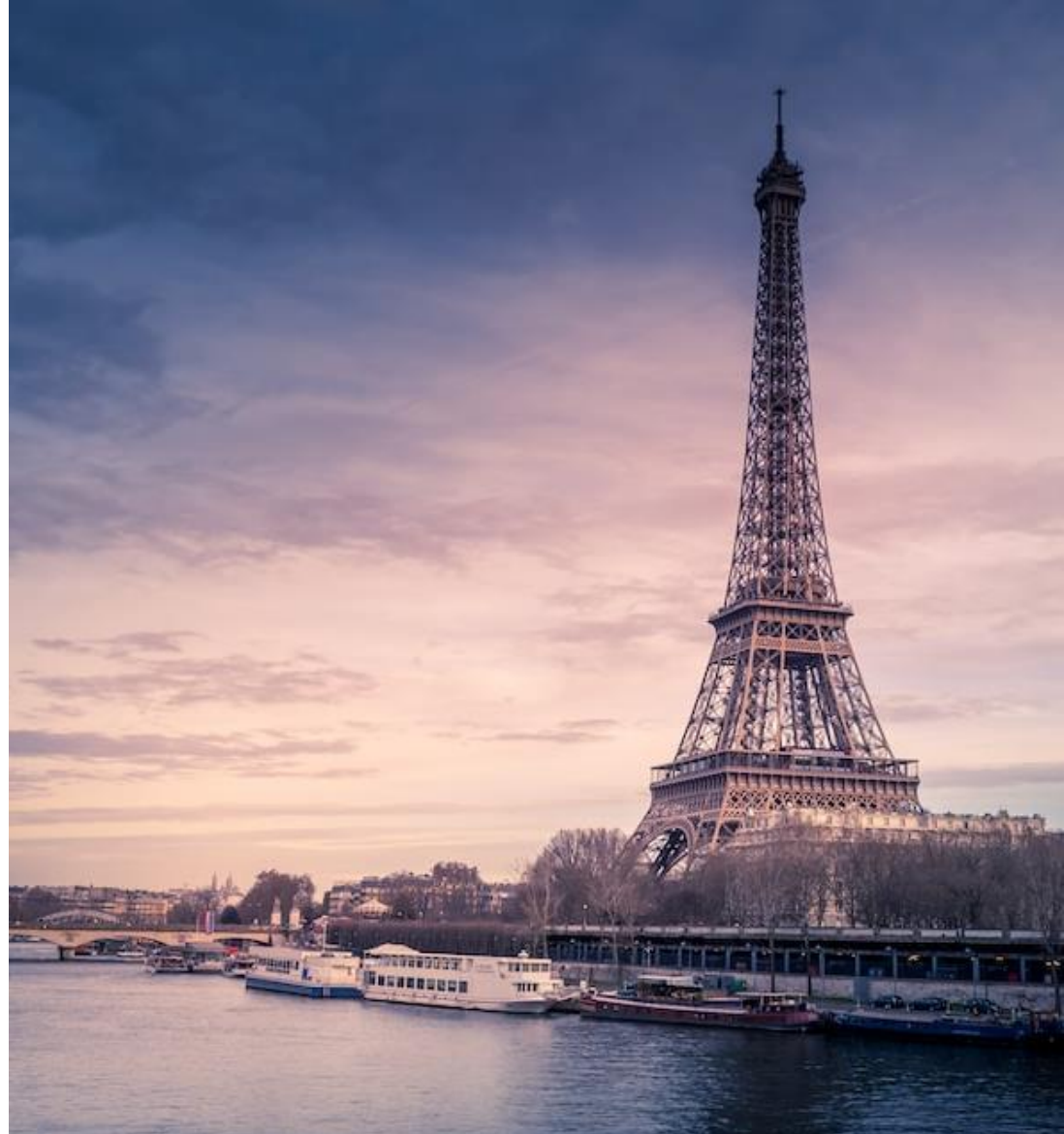


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# Co-owned service provider

- CommunePlone – a set of tools for civil servants and modules for e-government solutions
- Initiated as grass-roots project initiated by two individuals from two municipalities
- Now hosted and developed through the public service company IMIO, co-owned by 120 Wallonian municipalities.
- Facilitates collaborative requirements engineering process and offering necessary services to operationalize tools developed in CommunesPlone





# Evolving from one to the other

- Signalen - a tool for creating, sending, receiving and handling reports about the public space
- Developed in the wild between municipalities supported by civil society Foundation for Public Code
- Transitioned into Dutch Association of Municipalities with formalized governance and technical steering
- Development mainly performed by Amsterdam. Ambition to onboard others and grow community cross-border



