



Open Innovation for Earth Observation Programmes

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Doing business with open source

Alessandro Amici <a.amici@bopen.eu> – @alexamici

B-Open – <https://bopen.eu>



The open source company conundrum

- Development and maintenance of software feeds of quality engineering time. That is: **it costs money**, possibly a lot of money.
- Distributing open source software is “free” (as in speech). That is: you give the software away **for “free”** (as in beer).
- The **direct economic incentive** is not to open source any piece of software. Ever.

Spoiler alert!

It's all about **indirect economic incentives**

- Who benefits from open source software and how?
- In what ways companies do business with open source software?
- What kind of indirect economic incentives work for open source developers?

Who benefits from open source software and how?

- Non-expert users / general public / everybody
 - Code ecosystems with “science-like” continuous improvement
 - Large “sort of coherent” distributions, no vendor lock-in
 - “Kinda free” software, only pay for services
- Developers and expert users
 - All of the above, plus can solve problems themselves
 - Can contribute to and even steer the development
 - Often drive adoption by the non-expert users

“Open Source software” has an “Open Source license”

- **source code** can be used, modified and distributed “freely”

“Open Source development model”

- public discussion and development create a **developer community**
- pros: more diverse core developers, more robust long-term survivability
- cons: community management, harder to keep the design and the codebase coherent

Open source business taxonomy / downstream services

- Consultancy, support and training services
 - Same business model as with commercial software
 - By far the larger market, from B-Open to IBM
- Packaging and distribution
 - Newish business model: subscription for updates / security
 - RedHat, Canonical...

Open source business taxonomy / software development

- Open source software with dual licence / pay for premium features
 - Commercial software business model
 - Open source development to gain mindshare / beta test
 - Android, MySQL, PyCharm, GitLab...
- Co-develop OS infrastructure software to sell support services
 - Commercial support services business model
 - Open source development to gain mindshare
 - OpenStack, GeoServer, Dask...

Open source business taxonomy / software development

- Co-develop OS frameworks to sell software development services
 - Commercial development services business model
 - Open source development to gain mindshare
 - Django, Pypy... (Sarsen by B-Open)
- Co-develop OS software to sell cloud services
 - Commercial cloud business model
 - Open source development to gain mindshare
 - Planetary Computer / Microsoft, lots of AWS and GCP tools, Dask / Coiled...

Open source business taxonomy / software development

- Co-develop OS software to improve company image
 - Open source development to gain mindshare
 - Go / Google, React / Facebook... (xarray-sentinel by B-Open)
- Paid / sponsored OS software development
 - Commercial development services business model
 - Open source distribution as a customer requirement
 - GDAL, publicly funded software... (xarray backends, cfgrib... by B-Open)

Am I saying that the main indirect economic incentive to develop open source software the fact the open source developers are “a sort of influencers”?

YES!

Conclusions

- There are economic incentives to develop open source software when doing so enables a potential revenue stream
 - the software needs to be successful
 - the company has follow up services to sell
 - all traditional business models apply
 - potential customers knows who are the core developers and prefer them
 - the communication / social footprint is key
- Open source development costs are “marketing and communication”

Thank you!

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