



SUPPORTING AND SUSTAINING OPEN SOURCE SOFTWARE DEVELOPMENT: THE COMMONS PERSPECTIVE

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PLEASE INDULGE ME

This is all tentative and early stage thinking.

I'm not an expert in any of this.

I welcome feedback!



“COMMUNITIES OF EFFORT”

A *community of effort* is a community formed in pursuit of a common goal.

Effort is the collective contribution of focused attention & labor applied towards that goal.

“COMMUNITIES OF EFFORT”

One goal of such a community is to avoid wasting effort through duplication or redundancy.

The community may (and does) *direct* itself towards achieving that goal.

“COMMUNITIES OF EFFORT”

Effort here is a *finite resource* that is consumed, at the direction of the community.

In this sense, it may be viewed as a *common pool resource*.

SOME EXAMPLES OF COMMUNITIES OF EFFORT

Open source software projects such as Python.

Research fields focused on a small set of scientific questions.

The Carpentries training community.

Data analysis commons.

SOME FEATURES OF THESE COMMUNITIES

Are sometimes *amazingly effective* and defy standard collective action principles.

Easy to bootstrap a community of effort using enthusiasm and GitHub.

Often *very organic* in their approach to solving problems.

A KEY UNANSWERED QUESTION: *WHY* DOES THE COMMUNITY DIRECT THE EFFORT??

An empirical feature of some of these communities is
that a core person or people place their effort at the
service of the community.

Why!?

(Is this a prerequisite for successful formation of a
community of effort??)

CHALLENGES

Sustainability in the long term is a big challenge.

Maintenance activities are particularly challenging,
because of the mismatch with human enthusiasm.

This leads to burnout of the maintainers.

DOES THIS PERSPECTIVE YIELD ANY HINTS OR CLUES ABOUT SUSTAINABILITY?

1. You can work to maintain and increase the pool of effort available to a community.
2. Community-based governance is important to sustainability.

DOES THIS PERSPECTIVE YIELD ANY HINTS OR CLUES ABOUT SUSTAINABILITY?

One is that communities of effort can & should invest in seeking out new *sources* of positive effort.

Work that makes joining the community easy and rewarding thus potentially increases the pool of available effort.

1. YOU CAN INCREASE THE POOL OF EFFORT

Many open source projects invest implicitly or explicitly in welcoming new contributors; training can fulfill this goal in data analysis commons.

Access to data and functionality are ways to bring people in to data analysis commons. Some will then contribute to the overall effort.

DOES THIS PERSPECTIVE YIELD ANY HINTS OR CLUES ABOUT SUSTAINABILITY?

Ostrom enumerated 8 design principles for a *sustainable common pool resource*.

One is *collective choice arrangements that allow most appropriators to participate in the decision making process*.

2. COMMUNITY-BASED GOVERNANCE IS IMPORTANT.

Empirically, it is important for those who possess a common pool resource to see themselves as involved in deciding the appropriation of that resource.

Or, to put it more simply, if you are asking people to invest effort, you must reward them with some influence over how that effort is applied.

2. COMMUNITY-BASED GOVERNANCE IS IMPORTANT.

One reason is that collective *ownership* incentivizes participation.

Another reason is that this principle allows a form of *organic communication* that results in adaptation and adjustment of work to meet actual needs.

2. COMMUNITY-BASED GOVERNANCE IS IMPORTANT.

This also provides a way to think about funding:
Funders fund **people** (or people seek **funding**) in order to contribute effort to a project.

The funders often do not participate closely in governance, but instead gain influence through **contribution of effort.**

(This is a common approach in open source.)

MEMBERSHIP IN COMMUNITIES OF EFFORT

Who is part of the community of effort, and hence should be part of governance?

Those who *contribute positive effort*.

Not users who cost zero effort, or extractive contributors (those who do not "pay effort" into maintenance).

MEMBERSHIP IN COMMUNITIES OF EFFORT

In data analysis commons or science communities, people who *provide data* are contributing, and should be included in governance.

Trainers, methods developers, and documenters also contribute to the sustainability of the community and should be included.

SUMMING IT ALL UP

I'm trying to connect my thinking about e.g. open source projects to the broader literature about incentives and collective action.

The idea of *communities of effort*, with *effort* being a common pool resource, leads in some intriguing directions.

SUMMING IT ALL UP

- (1) Recognition that “we’re all in it together.”
- (2) Recognition that there are always *other* places for people to invest their effort, so projects should incentivize and reward investment in *this* project.
- (3) “Soft” skills are crucial to this effort.

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IS ACADEMIA A GOOD HOME FOR COMMUNITIES OF EFFORT?

Leadership & governance model in basic research is often not inclusive of people doing the work; instead, centers on reputation and hierarchy.

Agricultural extension may be a model to investigate.

MORE READING

Blog posts at <http://ivory.idyll.org/blog/tag/cpr.html>

THANKS!

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Josh Greenberg, Nadia Eghbal

Luiz Irber, Tracy Teal

