Anticipating the effects of interventions in commons-based peer production

Peter Johnson¹, Antonio Tenorio Fornés² and Nigel Gilbert¹

¹University of Surrey, UK  ²Universidad Complutense de Madrid, Spain.  Contact: peter.johnson@surrey.ac.uk

What?

P2Pvalue is developing a mobile phone app to be used by commons-based peer production (CBPP) communities to organise their work. Think of an open source mobile version of GoogleDocs mixed with WhatsApp, using a crowd-funding type approach to prioritise work.

Ethnography and user-testing are being used to underpin the app’s design.

An ABM is being used to anticipate what effects adoption of the app may have on CBPP communities.

How?

To identify the main agents in the ABM and their behaviour rules, we used:

existing CBPP theory (on why people contribute to communities),

findings from the project ethnographies (types of community member: regular contributors 1%, sporadic contributors 9% and users 90%), and

plans for the app’s structure.

We calibrated the ABM to four observed community types using data on community size and structure taken from CBPP GitHub communities:

(i) large communities that experience steady growth,
(ii) large communities that experience sudden growth,
(iii) small communities that grow but then collapse, and
(iv) small communities that experience steady growth.

We then switched on the behaviour rules that represent agents’ adoption of the mobile app, and ran the simulation to see what difference they made.

The simulation results suggest...

NB: The graphs show the 90% confidence intervals for numbers of regular contributors (#1s) and sporadic contributors (#9s) over sixty repeats of the simulation

Interpretation and further work

The changes in the way contributors find projects when using the app affects how they make social connections and whether they decide to continue contributing. This results in more people staying in and contributing to the community, in turn attracting new members and users.

We still need to further investigate potential effects of the app on community structure.