Anticipating the effects of interventions in commons-based peer production

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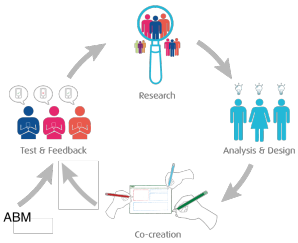
What?



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?

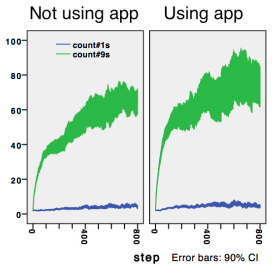
To identify the main agents in the ABM and their behaviour rules, we used:
existing **CBPP theory** (on why people contribute to communities),
findings from the project **ethnographies** (types of community member: regular contributors 1%, sporadic contributors 9% and users 90%), and
plans for the **app's 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.

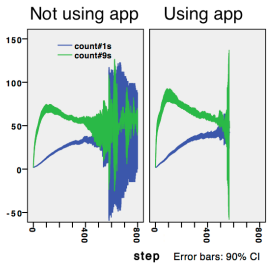
We then switched **on** the behaviour rules that represent agents' **adoption of the mobile app**, and ran the simulation to see what **difference** they made.

The simulation results suggest...

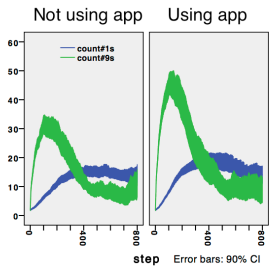
NB: The graphs show the 90% confidence intervals for numbers of regular contributors (#1s) and sporadic contributors (#9s) over sixty repeats of the simulation



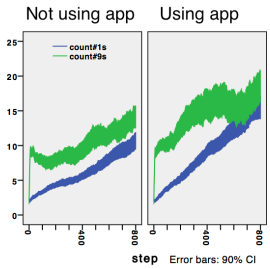
← ...**large 'steady growth' communities** are likely to experience slightly quicker growth and a marginally larger community size



← ...**large 'sudden growth' communities** are likely to have a higher peak to their sudden growth, but still level out and drop in size, though they are likely to last longer (smaller error bars denote more simulation runs lasting this long)



← ...**small 'grow & collapse' communities** are likely to have a higher peak, but still experience a collapse in community size



← ...**small 'steady growth' communities** are likely to experience slightly faster growth meaning an overall larger community

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**.