

Further Analysis on Technology Coverage Gain:

In this paper, technology coverage gain for a technology in a certain period is defined as the improvement in worker participation in that technology assuming each worker had adopted top ranked (rank 1) recommended task on a weekly basis. We also assumed that a worker needs to have at least one registration history in the prior month or in the current month, to be considered as active. *The whole analysis is based on certain assumptions.* Generally speaking, there can be more active workers in a platform than the workers registering in either of the two subsequent months.

Two factors can affect the monthly technology coverage gain. First, what percent of workers adopted top ranked (rank 1) recommended task on a weekly basis. Second, the number of active workers in the platform. Below we define two parameters based on these two factors:

U : percent of workers adopted top ranked (rank 1) recommended task on a weekly basis

V : an worker is considered active if s/he has at least one registration history in the last V days prior to the month when the analysis is performed

In table 1, we report the average monthly technology gain taken over 6 months period (October 2016 to March 2017) for level 1 hot technologies with different combinations of the parameters U and V . For example, with $U = 50\%$ and $V = 60$ -days, average monthly technology gain (taken over the evaluated 6 months) is 56.44%. In this table, with any fixed value of U , we see increase in average monthly technology gain as we move from left to right (towards higher values of V). With higher values of V , there are more active workers considered in the performed analysis. In addition, for any fixed value of V , we see decrease in average monthly technology gain as we move from top to bottom (toward lower values of U).

It is evident that monthly average technology gain reduces with less number of crowd workers adopting the top ranked (rank 1) recommended tasks on weekly basis. In addition, monthly average technology gain increases with more active workers in the platform. However, we noticed significant monthly average technology gain when $U \geq 40\%$.

Table 1: Average monthly technology coverage gain after recommendation adoption for level 1 hot technologies. Average taken over 6 months period (October 2016 to March 2017) for each combination of U and V .

	$V = 45$ -days	$V = 60$ -days	$V = 75$ -days	$V = 90$ -days	Row-wise-average
$U = 100\%$	225	194.63	257.08	241.85	229.64
$U = 60\%$	42.81	90.38	121.42	140.07	98.67
$U = 50\%$	9	56.44	88.14	107	65.14
$U = 40\%$	8	19.66	86.58	70.38	46.15
Column-wise-average	71.20	90.27	138.30	139.82	

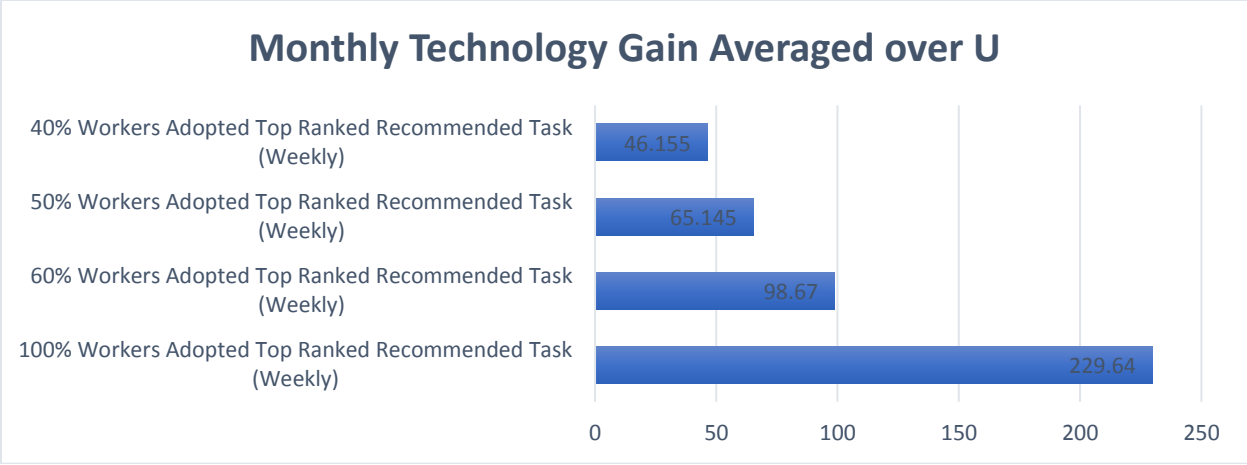


Figure 1: Monthly technology coverage gain averaged over different U values

The scatter plot in Figure 2 visualizes the average monthly technology gain with varying values of U and V (taken from table 1).

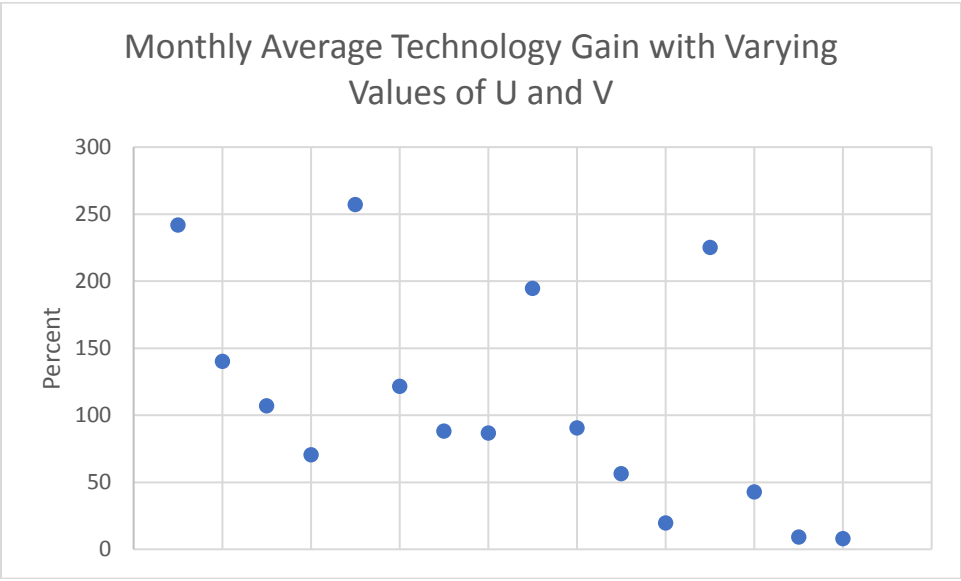


Figure 2: Average monthly technology coverage gain with different combinations of U and V