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Accounting for Free Digital Services and Household Production - The Facebook Example

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Results from choice experiments have revealed that individuals attribute significant value to digitally-enabled services such as those derived from the use of social media. We integrate this consumer value into an accounting framework by treating it as the value of own-account production by households of a particular type of leisure services. Time spent by households, along with social media services and IT hardware capital constitute the relevant inputs. We derive a quality-adjusted unit cost index for such household-produced leisure services whereby the number of network users acts as the main vehicle to capture quality change. These quality adjustment effects turn out to be key when assessing the quantitative importance of own-account leisure services. To illustrate, we consider an Extended Measure of Activity (EMA) that encompasses GDP and own-account household production of digitally-enabled leisure services. A simulation for the U.S. shows that the effects due to Facebook use alone would cause the EMA to grow anywhere between -0.04 percentage points per year less to about +0.2 percentage points per year more than U.S.GDP between 2004 and 2017, depending on the size of network effects.