

Online Platforms' Creative "Disruption" in Organizational Capital - The Accumulated Information of the Firm

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Online platforms based on troves of data and digital technologies have revolutionized and disrupted the industry sectors. This paper presents a new method, centering on organizational capital, to examine how the entry of an online platform, a new data-driven business innovation, affects an existing firm's value of organizational capital and investment in organizational capital. An online platform's key disruption in its sector is traditional firms' knowledge derived from their relatively limited amounts of data. This disruption can hence be measured by a firm's organizational capital, the accumulated information of the firm, i.e., the value of data. The approach is supported by our finding that the value of data of dominant online platforms is highly correlated with rising global data flow, the first empirical evidence that successfully links the explosive global data flow to an economic value. Moreover, we also find that when the global data flow increases by five folds, Big Tech's value of data doubles. The major findings based on the firm-level data of the U.S. hospitality and the transportation industries during the period of 2002 to 2018 are as follows. When an online platform enters the industry, the existing incumbents with a lower degree of digital transformation have a higher depreciation rate of value of data. This is the first empirical evidence of the anticipated effect of new business innovations on the depreciation rate of value of data. However, there is no immediate impact on the output, the employment, or the total factor productivity of existing incumbents. In the increasing digitally and physically inter-connected world, new online platforms' disruptions in traditional industries will be significant, fast, and on a massive scale. Our paper provides a new methodology to measure online platforms' disruptions in traditional brick-and-mortar firms in a timely manner.