

Unpacking the Valuation of Data in the Data-Driven Economy

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Abstract:

Data is often said to be the most valuable commodity of our age. It is a curiosity, therefore, that it remains largely invisible on the balance sheets of companies and largely unmeasured in our national economic accounts. This note seeks to unpack what we mean when we refer to data as the “new oil” or the essential capital of the data-driven economy, how it differs from information in general, how it is transformed into value, and what might be the approximate scale of the value of data in a modern data-driven economy. A key feature of data is that it is captured rather than acquired in a market transaction for which there were invoices and receipts and its value ultimately depends on how well it is used – which undermines normal market frameworks for attributing a price to it. At the same time, it can be bought and sold – even if “ownership” of data is not possible. A third critical feature of “big data” is that unlike data that was mobilized for analytical purposes historically, the information is, almost by definition, of a scale beyond what the human mind can access - in a sense, there is an opacity threshold that is passed, which creates new conditions of information asymmetry, which in turn serves as the foundation of a business model based on exploiting it for commercial advantage. This paper will explore alternative ways to access the value of data to illustrate the problems in putting a value on it: (a) exploiting information asymmetry for market advantage; (b) shift of innovation into machine learning space, which in effect permits the industrialization of learning, accelerating the process of innovation, providing a speed advantage to firms that are able to harness this element; (c) the creation of machine knowledge capital as a new factor of production; (d) optimization of business processes, to reduce costs, and increase operating margins; (e) capture of consumer surplus by enabling near-perfect price discrimination; (f) positive externalities of public data which can be monetized by private entities, once mobilized; and (g) strategic value, given that command of big data, machine learning and artificial intelligence will underpin future military advantage, which in turn implies. incalculable value for data that underpins the evolution of a sophisticated data-driven economy that has capabilities that can be turned to military/security objectives.

Keywords: Big data, data-driven economy, artificial intelligence, machine learning, information asymmetry, business process optimization, superstar firms, market valuation

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