

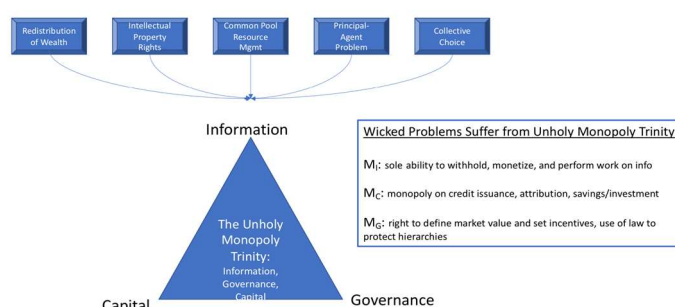
# Monopolies in the Information Age: Decentralizing Institutions for Social Welfare

## **Introduction**

Throughout history, social institutions have been designed to overcome five fundamentally wicked problems inherent in human society: 1. The creation and protection of property rights, deemed as a necessary condition for any type of trade transactions; 2. The [re]distribution of wealth, deemed as a necessary condition for any moral society to persist; 3. The Principal-Agent problem, deemed as a critical impediment inherent in any hierarchical organization; 4. The management of natural commons, deemed critical to the well-being of any society; and 5. How to make choices pertaining to the social collective, as such. We have yet to overcome these persistent problems with institutional solutions, primarily because our man-made institutions suffer from the same inherently human faults from which these problem emanate to begin with.

## **Theory**

The root source of all of these problems is the shared underlying monopoly problem (**Figure 1**). A new class of digital institutions based on distributed ledger technologies, allows us to overcome these problems, particularly under the conditions of the information age. Recent literature on the “Wicked Problems” concludes that “there is no scientific ‘best solution’ to a wicked problems,” emphasizing, almost exclusively, ways to manage the problem, rather than getting to the root cause of these problems in an effort to find innovative solutions (Head, 2018, 183).

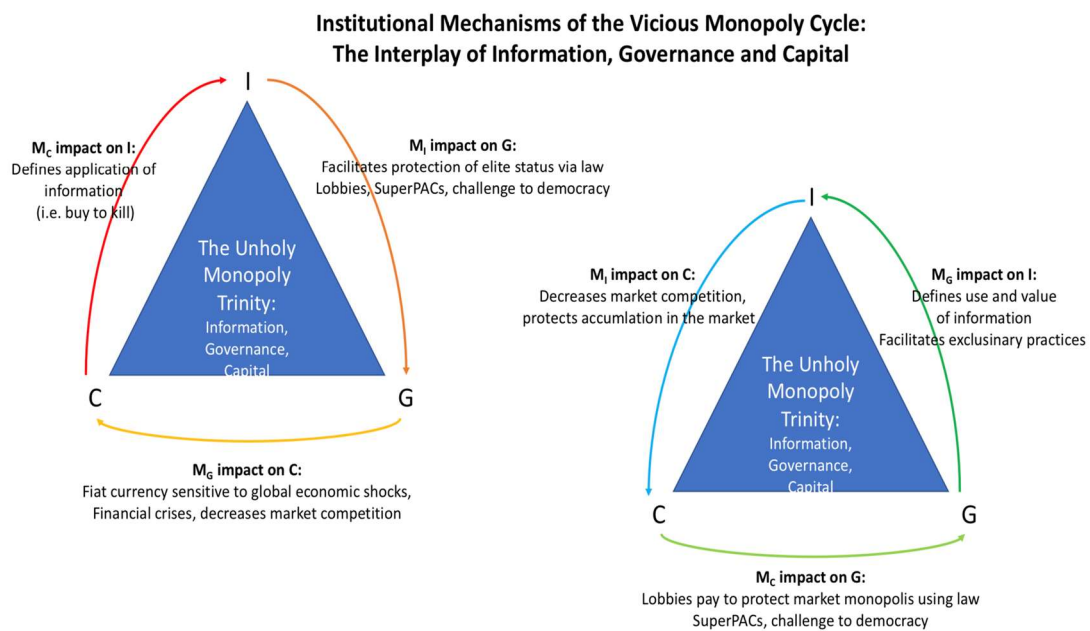


**Figure 1**

Over the last semester, I have focused on developing a narrower definition of the most persistent “wicked problems” for evaluation, namely those that meet the following two criteria: (1) they have been mathematically shown to be unsolvable, and (2) they stem from generic characteristics of human behavior. For each of the four problems thus classified, this study will offer ‘non-human’ technological solutions that overcome the mathematical impossibility of bypassing the ‘all too human’ root cause of the problem.

## Corona-virus, Case Studies, and Institutional Failure

The 2008-2009 financial crisis and the COVID-19 global pandemic are two examples of the persistence and increasing cost of wicked problems, and clear evidence of our failure to solve them, even with complex institutional structures. In the United States, as nearly 4 million Americans claimed unemployment in light of the Coronavirus epidemic and even more experienced economic shocks threatening to push them into poverty, eight (8) of the nation's billionaires saw their wealth grow by over \$1 billion USD (Collins, Ocampo, and Paslaski, 2020), income that is effectively shielded from taxation and redistribution.<sup>1</sup> Similarly, the 2008-2009 financial crisis resulted in millions of middle-class Americans losing their homes and life savings, while \$8 trillion USD of taxpayer money was used to bail out the banks and pay bonuses to CEOs. In both situations, the institutions intended to help individuals weather shocks via the distribution of public goods actually facilitated reverse distribution, leaving the individual worse off, at the hands of the elite.

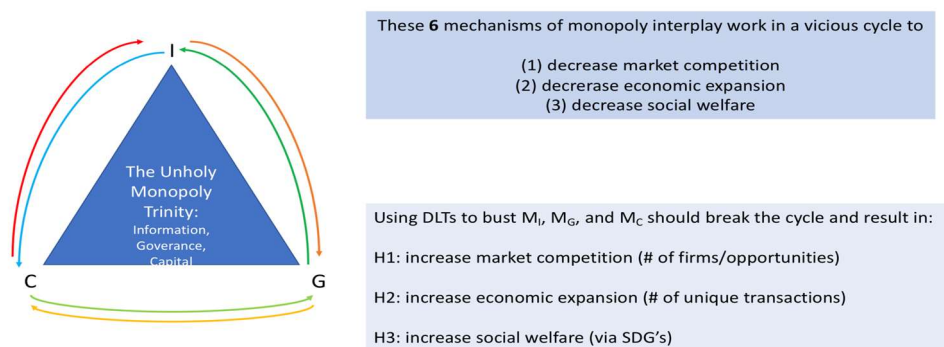


**Figure 2**

These events offer a sobering preview of the increasing cost of shocks to individuals, states and societies, and the disproportionate weight born by the individual, rather than the corporation. They also highlight the dynamics of multi-dimensional

<sup>1</sup> The CEOs of Amazon, Zoom, Microsoft, Silicon Valley real estate, Tesla and SpaceX, Apollo Global Management, and Mediacom. As of April 15, 2020, Jeff Bezos' fortune had increased by an estimated \$25 billion since January 1 of the same year. This is larger than the Gross Domestic Product of Honduras, \$23.9 billion in 2018.

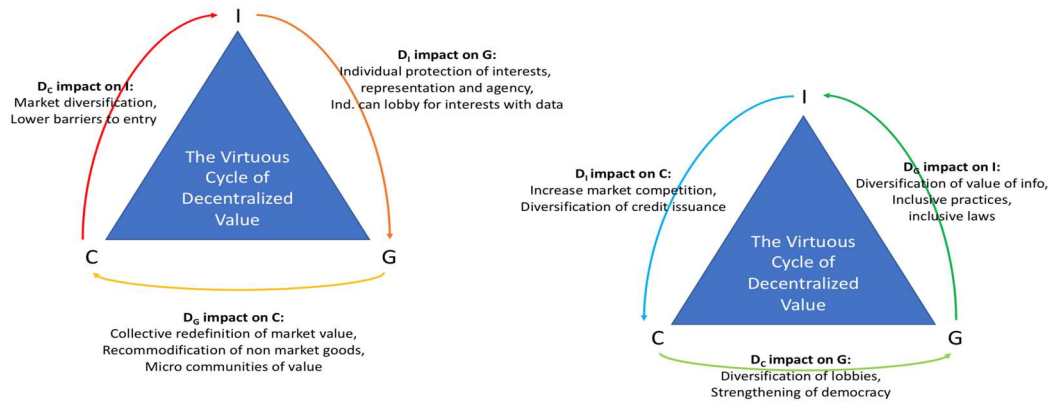
poverty (Alkire, 2015), and the way the wicked problems continue to extract significant value from individuals and society by reducing market competition, slowing economic growth and eroding social welfare (mechanisms depicted in **Figures 2 and 3**, developed this semester). Both events are characterized by large scale information asymmetries coupled with dissemination of false information, and resulting in massive loss to society - of capital, assets, and lives - with disproportionate impact on lower classes and minorities. The COVID pandemic is a public “bad” problem, resulting in reverse distribution during economic recession, while the 2008-2009 resulted of a massive Principal-Agent problem run out of hands, of bad mortgages and wealth management schemes. Though access to information is becoming more readily available to more people, the increasing number of actors and lengths of agent-chains makes institutional solutions more complex and collaboration more difficult to regulate.



**Figure 3**

This work aims to prove in the coming semesters that under general conditions of decentralized value generation, governance, transparency and immutability, the wicked problems will subside, neutralizing the principal-agent problem, offering new management mechanisms to protect public goods, new automated solutions to create and protect intellectual property rights, and, most importantly, new sources of value creation as well as mechanisms for redistribution of wealth via economic expansion instead of the failing centralized governance systems we currently have (**Figure 4**, below).

# **New Institutional Mechanisms of the Virtuous Cycle of Decentralization: The Interplay of Information, Governance and Capital**



**Figure 4**