Socioeconomic Hibernation Model

Preamble

We, the citizens of United States of America, the citizens of member nations of the United Nations, and other affiliated individuals call upon the Decision Makers of governments, of industry, of institutions and organizations to consider, coordinate, and complete a migration from the socioeconomic models presently in use globally to a **Socioeconomic Hibernation Model**.

Summary

We propose the adoption of the Socioeconomic Hibernation Model. This model would represent a permanent rotation between socially-distanced and socially-close working modes within business, industry, education, government, financial, and other social institutions capable of supporting remote working. Socially-close, localized work would occur during the Spring, Summer, and Fall seasons while socially-distanced, remote-work would occur (hibernate) during the season of highest viral activity. Adoption of this Model would defend society against emerging pathogens, increase socioeconomic stability, and reduce resource consumption.

Definition

A **Socioeconomic Hibernation Model** (SHM) is defined as a process wherein business and social institutions are organized into systems which permanently encompass a form of hybrid logistics. Socially-close work takes place centrally on business or institution premises eight months of the year (**Centralized Logistics**) while the remaining four months of the year practices socially-distanced work at dispersed or remote locations (**Decentralized Logistics**). Depending on locale, Decentralized Logistics will take place during the time of year when the seasonality of viral infection is at its highest. While, Centralized Logistics will take place during the remaining time when the risk of viral infection is lowest. The Socioeconomic Hibernation Model includes **Three Pillars of Concern**:

1) Maximizing a defensive posture against emerging pathogens
2) Maximizing the long-term stability of socioeconomic systems
3) Minimizing carbon emissions and resource consumption globally

Maximizing a defensive posture against emerging pathogens

Scientific consensus on the existence and effects of climate change is all but absolute [1,4,5]. A changing climate disrupts established biological systems wherever the change occurs. From altered flora on land to changes in oceanic systems to fluctuating fresh water supplies, climate change affects them all. Climate change influences weather systems, animal migration, and melting polar caps. Consequently, it contributes to the melting of permafrost within which carbon dioxide, methane, and a plethora of microbes novel to current humans have been locked away for thousands of years [6].

As the permafrost melts, the threat of the release of toxins and pathogens increases. The SHM attempts to minimize this threat because the emergence of civilization-threatening pathogens is inevitable. For instance, in 2015, scientists discovered 28 novel pathogens (virus groups) within ice core samples from a melting glacier in Tibet [7]. While the emergence of those pathogens may seem a distant concern, society has been threatened by the emergence of three coronaviruses within the past two decades with SARS surfacing in November 2002 and MERS in 2012 [3]. COVID-19 arrived in late 2019. Animal migrations play a large part in transmitting disease from remote permafrost regions to human populated regions. As animal migrations continue in part due to climate change, contact between humans and other animals which may have been exposed to newly released pathogens increases. This human-animal contact increases the risk for disease transmission from animals to humans through touch and even consumption of animal flesh.

Humans have fought disease throughout our recorded history. While insects, such as humanity's nemesis the mosquito, are responsible for some of the most virulent human pandemics, close proximity presents an ideal circumstance for the transmission of disease also. Cold and inclement weather can bring people together indoors creating the perfect environment for disease transmission. Disease is frequently transmitted by contact with bodily fluids via physical contact, via air transmission, and via contact with droplets on surfaces. Seasonal diseases such as influenza thrive in periods of close contact between people. The Winter season is an example of a time period when people congregate indoors because of cold temperatures. In the United States, the spread of influence peaks during this time.

The world's response to COVID-19 in early 2020 illustrated society's ability to contain the spread of disease through social-distancing: amongst other techniques.

Social-distancing intended to ease the pressure on health systems as a result of the outbreak. The first of the Three Pillars of Concern in the SHM attempts to normalize social-distancing during the seasons of highest viral activity: minimal contact, minimal spread. Society benefits when businesses, schools, clubs, services, and other similar institutions normalize a process of social-distancing during the time when society is at its most vulnerable to disease. Migration to the first Pillar is possible with current technical means and with current social awareness. The end result is a society which is already in a defensive posture guarding against the emergence of pathogens: whether the pathogens are known or novel.

Maximizing the long-term stability of socioeconomic systems

Human economic activity can be considered to be one of our most important human achievements. It is distressing then when one considers that one of the most visible casualties of the COVID-19 pandemic was the world's economy. The world may not have been ready or capable to handle the effects of a 21st century pandemic. While pandemics have occurred in the past and will occur in the future, the resilience of our economies is requisite for the many tools and resources needed to fight an impending invasion of pathogens. From the tools and assets employed directly by caregivers to the materials needed for the manufacture of complex tools and resources, a stable economy could be considered one of the best weapons at humanity's disposal.

The second Pillar of Concern in the SHM addresses economic stability. With the advent of COVID-19, the world economy effectively came to a halt as social-distancing measures were set in place. Full business shutdowns were instituted in especially hard hit areas with the exception being critical infrastructure businesses. All affected businesses altered normal work processes in order to comply with the state-level directives. In many instances, new work processes were created ad-hoc, preset schedules changed, and outlooks adjusted. This level of disruption is not only financially expensive but expensive in terms of business continuity. It adversely affects the morale, mental stress, and fitness of employees. With normalized social-distancing built into normal business lifecycles, a comprehensive response to pandemic threats is theorized to have minimal impact on economic engines since Decentralized Logistics would mean that many members of society are already sheltering, working, and learning in place at home— and not increasing the spread of disease. Fortunately, adopting SHM would incur less of an impact to business process planning than expected. The arrival of the COVID-19 pandemic forced businesses to establish templates for

remote work processes. While the templates may be rough in form today (since many were developed in haste), current remote work processes can serve as a suitable starting point for eventual migration to the SHM.

Additionally, the second Pillar of Concern normalizes the inter-personal relationship changes that arise from social distancing. Having Decentralized Logistics already in place when pathogens arise eases the burden from stress and anxiety in the public. Instead of reacting to events in an ad-hoc way, social expectations would already be understood if social distancing is simply an everyday occurrence at a certain time of the year.

Minimizing carbon emissions and resource consumption globally

While vibrant debate can be made between various experts on naming the largest contributor to climate change, the debate will almost surely return to one inescapable conclusion— climate change is real. Many aspects of modern life contribute to carbon emissions in our atmosphere. An interesting observation was made early in the outbreak of COVID-19 in 2020. As China moved to shutdown industry and quarantine hotspots within their borders, the atmosphere (normally choked with pollutants) visibly cleared up with the lack of everyday activity [2]. Canals in Venice, without the churn of everyday activity, cleared. While the two previous examples might seem anecdotal, conditions which could occur with other more natural causes as well, the examples do illustrate correlative relationships between human activity and the environment— relationships which can be tested.

The third Pillar of Concern in the SHM addresses minimized carbon emissions and resource consumption. Decentralized Logistics will see diminished transit (auto, air, and rail) between homes, businesses, and institutions for what could be up to four months (assuming a December to April term in the United States). Organizations could forego providing much of the power, heating, and water/sewage to their large facilities if very few employees are on-site. While workplace decentralization from a single large facility to distributed homes might seem just a displacement of consumption, most homes are already powered, connected, and conditioned: just empty, in many instances, during the workday.

Conclusion

The events related to the outbreak of COVID-19 demonstrated the effectiveness and difficulties of applied social-distancing as nation states tried to contain the

spread of the virus. The COVID-19 outbreak may be considered, ultimately, a test of our socioeconomic systems in the face of even greater threats to come. Fortunately, humans will continue to rise to challenges no matter the difficulty. While the imminent arrival of pathogenic threats does not change humanity's resolve to persevere, a changing planet, changing technology, and changing universe compels humanity to adapt to meet the more challenging threats from some of these changes.

Adoption of the Socioeconomic Hibernation Model is well within our current technical, political, and social means.

Adoption of the Socioeconomic Hibernation Model is not just good practice, adoption is responsible practice.

Adoption of the Socioeconomic Hibernation Model is a first step on a path requiring many steps for ensuring the survival and continued viability of humanity.

Citations

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