

## Position Paper: Sustainable Economic Models

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1. The Intensive Care Unit Analogy: As a society, we are alarmed at the rising cost of health care. Think of what health care would cost if all of the patients were in the Intensive Care Unit or the Emergency Room. What is the analogy to long-term preservation? All of our patients (that is all of the data that needs to be diagnosed and treated for the disease of decay) today are in the ICU or the ER. [This is a bit polemical, but I hope you get my point.] An affordable (e.g. economically viable) system for long-term preservation requires preventative medicine, a system of diagnosis of similar problems, treatment protocols and good practices, criteria for triage, processes and tools that support healthy data, and an infrastructure oriented to health of data rather than illness. Getting to this point will involve research (what are the good practices, which types of diseases affect which types of data, how do we motivate data producers to be “health conscious” about their data, etc. etc. especially in the absence of a known or quantifiable future demand.

2. The Value Proposition: If we take as a given that not all data are created equal and that we will not be able to afford to keep everything, how do we decide where to invest in preserving data. This is fundamentally an information problem. How do we make effective economic decisions in the face of uncertainty about the supply of data and the future demand? Are there any economic models or research issues that provide insights into comparable problems? What happens when the future value of a particular set of data is contingent upon its relationship to other data that have been preserved and can therefore be aggregated? At what level of granularity do we make selection (e.g. investment) decisions, given that deciding what to preserve is a very labor-intensive and expensive process.

3. Public Goods with an Unknown Future Value: I assume that there are numerous similar cases of public goods with an unknown future value, but how can we learn from these and make a similar case for long-term preservation of [the right] digital data? I think we could also leverage present value, but we need some good examples.

Disclaimer: I am not an economist, not do I play one on TV.