VIVUSCOIN *v* 1.0

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ABSTRACT

"Bitcoin" [1] has been instrumental to the growth of cryptocurrencies. As of 2021 the amount of cryptocurrency in circulation is roughly the same as the U.S. dollars worth $2.4 trillion [2]. The future of world economy will be primarily transacted via cryptocurrency. The number of coin in existence is increasing rapidly. There are frameworks such as Cosmos SDK [3] that encourage developers to create their own token as a vehicle to raise money from individual investors. The issue with creating individual blockchains so quickly and by non-expert blockchain developers is added friction and lack of complete control stripped away by underlying frameworks.

In this paper, we study and propose a ubiquitous solution that permeates digital nature of computational machines. We believe a system based on our solution will make possible and accelerate progress toward ability to live inside a computer. We also propose our own electronic cash, "Vivuscoin", a name emphasizing the living nature of what our electronic cash will make possible.

1 Background

There is only one problem humanity ever needs to solve and that is to solve the problem of mortality. It is not too dissimilar to the case of the frog slowly cooking in the boiling water that we have forgotten that we should do something about our stark condition. With so much recent technological progress and state of art computational machines we might just be on the verge of being able to achieve immortality by simulating our brains inside a computer. Every effort put into that goal is worthwhile no matter how dim the hopes of achieving that goal may be. Even a mere 0.01% chance of success should justify spending at least 10 times the GDP of the world over the lifetime of a human being or

$$0.0001 \times 10 \times 80 \times 87.55\ trillion\ dollars = 6.844\ trillion\ dollars$$

This is assuming an average person living in the simulation is as productive as they were in real life and they get to live 10 times longer inside the simulation than the current life expectancy of an average person or 80 years. There can be many other cost saving aspects such as reducing our current footprint on the environment with lower consumption and more energy efficiency leading to higher real GDP.

2 Living in a Machine

Living inside a computer ought not to be distinguishable than living in real life if simulation is good enough. If we apply the gaming analogy the physics engine in the game is programmed to follow the same laws of the natural world. Even if the laws are changed there would be no discernible way for the simulated entities to know they have been modified, but that is not our goal here. There will be a transitory phase where some individuals live inside the simulation and some outside therefore there needs to be a gateway that can allow interaction between the two worlds. This however will not be necessary if we move forward sufficiently ahead in the future as eventually everyone will be in the simulation.

2.1 Our Approach to Brain Simulation

We purpose a method that includes scanning the position of individual atoms in the brain along with their other characteristics such as ionization and reconstructing them in a simulated environment. This approach requires scanning

all the atoms in the brain. We suppose a brain with the weight of $4500g$ and molecular weight equal to that of water or $18\frac{g}{mole}$, we find:

$$moles\ per\ brain = \frac{4500\ g}{18\frac{g}{mole}} = 250\ moles$$

$$250\ moles \cdot \frac{6.022 \times 10^{23}\ atoms}{1\ mole} \cdot 3\frac{atoms}{molecule} = 4.5 \times 10^{26} atoms$$

Therefore, $4.5 \times 10^{26} atoms$ need to be scanned and reconstructed in a computer simulation in order to simulate the brain fully.

3 Funding Development of Brain Simulation

There are many unknown unknowns that need to be resolved. The current state of art microscopy requires contact with individual atoms, such techniques are used in Atomic Force Microscopy (AFM). While technically speaking AFM does not actually make contact with individual atoms, but instead when the tip is close enough to each atom strong force between atoms repel the tip of the microscope tracing the topographical surface of the atoms in the sample examined. In the 3D environment of the brain no such scanning is possible. New technology needs to be developed to scan the atoms in the brain with the least amount of invasiveness.

4 Use Cases for Vivuscoin

The primary purpose of Vivuscoin is bootstrap the development of a brain simulation by funding the project. Future use cases include facilitating payments inside the simulation and outside for future use while it is being developed. It can act as a form of saving account for the future if a simulation is to be successfully created. Vivuscoin will be fully integrated into the simulation as a core part of the system and will be required in order to function inside the simulation. The economic necessity of payments is fundamental to a successful simulation, we discuss the reasoning below in subsequent section.

5 Requirement to Facilitate Payments

While living in a simulation just like the real life there will be a need to transact for various goods and services and just like any other resource computational resources will be limited.. The means by which that is done will be Vivuscoin. Vivuscoin will be the currency used in the digital simulation of brains.

5.1 Paying for Resources

Vivuscoin can be used to buy compute resources such as CPU or GPU so the individual can live a richer life in the simulation by being able to tap into those computation resources. Higher CPU availability can mean processing or perceiving a video faster or learning at a higher rate about what is occurring in the other parts of the simulation and other individuals and groups.

5.2 Preferential Network Treatment

Individuals can buy server time to reduce their latency to a geographical regions or spheres where other simulations currently reside. This can allow those clusters of individuals to have a higher bandwidth and lower latency between each other so they can send and receive various forms of communication much faster.

6 Risks

While it is far from certain the success of a viable full brain simulation, it is worth giving trying to build such a system. Manly milestones to be accomplished before we even have the ability to scan the brain. Once the scanning is successful a brain simulation engine needs to be developed which itself is riddled with uncertainty. While it seems plausible that if all the laws of physics in the simulation behave as they in the real life there should exist any differences between the simulated brain and the real brain. Despite that it is still uncertain whether even if we account for all known laws of

physics there wouldn't be a law yet to be identified which if not accounted for puts the entire simulation in jeopardy. This concern, however, can be understood better and be made less potent by realizing that the complexity involved in ordinary materials is immense and that no further explanation or laws of physics are needed to fully understand them. This complexity is also likely what gives rise to a functioning brain.

References

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