



Strategic Sustainable Brain

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Each one of us has been entrusted with the care and nourishment of what might be the most extraordinary and complex creation in the universe. Home to mind and personality, the *human brain* archives cherished memories and hopes for the future. It arranges and coordinates the elements of consciousness that give us purpose, passion, motion, and emotion.

But the brain is too fragile. It is far too vulnerable in its current state to continue providing the necessary cognitive processes for society's increasing life span. The brain needs resources to ensure that its components are not depleted or permanently damaged. In order to properly sustain the brain, we need to know what it likes, the challenges it craves, the rest it requires, and the protection it deserves. In short, the brain must have a strategy for its future.

Is now the right time to take action? I submit that if contemporary events have altered the day-to-day operations of the brain, affecting how it performs its operations and whether it can sustain itself for the long haul, then now is the right time to take action.

In recent times, there has been a series of technological happenings causing irrevocable changes in the external environment of the brain. People are living longer; there is a notable increase in the number of activists supporting life extension technologies; economic reporting predicts an increase in research and development of molecular manufacturing and nanotechnology; programming engineers are reveling in the increase in research and development of superintelligence; and conservative organizations are publishing warnings indicating an increased awareness of the potential threats of superintelligence. These events will directly or indirectly affect the brain, resulting in a set of expectations for the brain to function over a longer period of time and operate at a higher level of quality than it has ever achieved in the past.

To keep pace and sustain itself for the long haul, the brain needs a strategy that takes into account the present circumstances and what the future may hold. Currently, the brain is challenged by a demand to produce better cognitive capabilities more quickly and efficiently for a longer period of time. Simultaneously there might be an increased rate of neurological degeneration of brain cells resulting from increased longevity. And even though it is not a

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current threat, soon there will be a need to keep up with the acceleration of competitive superintelligence.

Developing a strategy for the brain requires a balance of several elements: a compelling vision for its future, strategic goals, an action plan, and a means for measuring the success of the plan. But before we can develop a strategic plan for the brain, we have to know more about the brain's ability to meet the needs of the contemporary *mind*. This may seem like an abstract project because it would require us to separate the brain as a functioning organization of cells, or agents, from the mind. Nevertheless, an effective way to do this is to fictionalize the brain—make it a character or a business entity.

If the brain had an executive statement, it might read something like this:

Executive Statement of the Brain

The mission of the brain is to serve its cells by adopting the advantages of emerging technologies to ensure a smart, safe and sustainable environment.

The brain develops best practices for cognitive and creative processes. The brain's central operating system is located in the neocortex, and has connexions through the internal and external communications network.

The brain's quality services are unique and exclusive, and its target supply chain is nerve cells and synapses with upper-end job-related responsibilities. The brain's competitive "intelligence" edge is that its services are 100% man-made, unlike competitors, such as superintelligence and friendly artificial intelligences. By this fact, the brain's mind hopes to attract inventors and investors that value the artistry of producing neurological connexions and their emergent properties such as critical thinking, imagination, day-dreaming, problem-solving, humor and intellection. Since the brain's responsibilities are mostly to serve the day-to-day functions of the mind, as well as to elaborate networking and communications assistance for the mind and body, it is considered to be in the communications market, although some mental personas use the end-result products, such as ideas, for themselves.

In the year 2006, the brain plans to develop strategic initiatives to protect its future and gain a competitive edge in the "intelligence" marketplace. Over the past few decades, the brain's longevity has increased along with those of its competitors, necessitating a reevaluation of its position and its future.

The brain's future is uncertain due to advancing cogitative systems such as AI and superintelligence. Adding to the external environment of the brain is the fact that new intelligence enterprises entering the marketplace are drawing business away from the brain. Encephalitis and other invasive viral infections, as well as dementia and neurological breakdowns, are eating away at the resources of the brain's affiliates. This pending shortage has created an immense demand for increased memory.

Regardless of some of the internal flaws of the brain, there is great potential for its continued success. The brain will improve faltering memory by adding a backup system; will expand to direct mind-linkup ubiquitous computing networks; will add error-correction memory replay and a global Net connection with remote neural access, guarded by security protocol. The brain plans to support its entire system by

eliminating degenerative processes that impede the ability for a healthy, vital life in its goal to keep up with the many changes ahead.

While the executive statement is a fictionalized story, it does contain tangible elements. The reality is that our brains need to be protected and improved upon. The brain's future depends upon how we want our brains to perform in the coming years and how much augmentation is actually needed, both invasively and noninvasively, to satisfy this end. Since our brains contain our memories, and our memories build our identities, this is a serious matter. But because we cannot see it as clearly as we see our expanding or shrinking bodies, the brain is dismissed while our mind presses for more immediate attention, forgetting the hard fact that unless the brain is in good physical shape, the entire system will falter.

Today the brain is vulnerable. It is vulnerable because the axial skeleton's skull that encloses and protects the brain is not built from impenetrable material; its command-and-control center, including the white matter in between, is in constant danger of breakdown, infection and disease; and its cognitive processes are subject to loss of information.

Trends five to ten years in the future suggest an increase in technologies, including biotech and nanotech, for building better brains to operate with better bodies in meeting the needs of people living longer. More distant future trends suggest people opting for the synthetic brain over a biological brain. Markets point to an expected increase in neurosurgery, neuroinformatics, neuromarketing, biotechnologies, and human performance enhancements with an explicit focus on nanotechnology. But the consequential inclination is that of machine intelligence challenging human intelligence. Lurking in the foreground of the future is whether or not the brain will be able to keep pace with new technologies that will otherwise outperform it.

Based on potential threats and opportunities, and on the brain's mission to serve its cells by adopting the advantages of emerging nanoscience, biotechnology, information technology and cognitive science (NBIC) to ensure a smart, safe and sustainable environment, the brain's strategy narrows down to: (1) enhancing its performance and sustainability in order to satisfy the needs of people living longer; (2) competing with emerging superintelligence; and (3) enhancing its cognitive capabilities in order to deal with the problems of an increasingly complex world.

With these issues on the table, the brain needs a practical approach hedged by a strong vision that helps society understand the opportunities and the threats that await all of us. This is not just an abstract discussion; it includes everyone, not a select few. It is not simply a matter of being smarter or more capable; it is a matter of healthy and vital living. It is a matter of being prepared for the challenges of the future, and incorporates a measurable goal of convincing others to be prepared as well. In other words, we need to proactively convince society that the brain must keep up with the technological changes ahead.

Convincing people is not an easy task, especially when minds have already been made up. But we must work toward convincing society that the brain needs to accelerate with the rate of technological change, as our vision and audition have through innovative corrective technologies, and our arms and legs have with robotic prosthetics, and as other parts of our bodies have been transformed and renewed in working together to keep us alive.

About the author:

Natasha Vita-More is a cultural strategist and designer. She has been the recipient of the Brooks Museum Award, honored at Women in Video, and, currently, is receiving international recognition for the “Primo Posthuman” future body prototype. Natasha is President of the Extropy Institute, and encourages the use of the Proactionary Principle for determining the pros and cons of emerging technology.