The Myth of Cyberspace: Towards a New Technopolis

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Introduction

The digital age has fostered the emergence of a new breed of brave people, one very willing to adopt new ways of "living", eager to follow the Piper(s) to unforeseen destinations with the tantalizing promise of a facilitated world.

Historically, however, most new technologies have not enjoyed such rapid acceptance. With some of the most important inventions that have changed the course of our very existence, it has taken us many centuries to understand the full implications of their potential and find ways of harnessing them. The discovery of fire is attributed to around 500,000 BC, but to this day we are struggling to control that power fully, in a meaningful way. Another invention which has had life-changing consequences was the discovery and application of electricity. As early as 230BC, the earliest known application of electrochemistry was seen in Baghdad, Iraq, where clay jars were electroplated with precious metals such as gold and silver. However, it was not until 1879 that Thomas Alva Edison developed the incandescent light bulb, and electric power only became commercially viable in the 1920's, twenty-one and a half centuries later. History thus strongly suggests that for a new technology fully to realize its potential in a sustainable way such that it becomes an extension of our lives requires a long gestation period. Mark Weiser's oft repeated dictum that "The most profound technologies are those that disappear" is not to be taken lightly.

Digital technology, though, will not simply disappear. In 1946, John Preseper Eckert and John Mauchly, electronic engineers from Pennsylvania State University, constructed the "Electronic Numerical Integrator And Computer" (ENIAC), using 18,000 vacuum tubes rather than electromechanical relays. ENIAC was the world's first fully electronic computer. The discovery of this digital technology has since revolutionized the lives and work of a vast cross-section of people from different disciplines and domains, including engineering, medicine, business, and of course architecture.

With this invention began a race – a race to understand digital technology's full potential, as with all other inventions in the past. The evolution of this potential has indeed been unique and simultaneous in so many aspects. The development of computing technology—its repercussions on hardware and software, the creation of digital databases such as in the Internet, the implications in the financial world, the application of virtual reality in areas such

as architecture and entertainment, and most recently the use of embedded computing and the possibilities inhering in miniaturization and portability—has given birth to a monumental range of subsequent technologies and futuristic visions. Though each aspect shared the common foundation of digital technology, the divergent directions of its progress have made it impossible to understand precisely the ways in which digital technology will transform human life. Discrete ideas born of the power to make science fiction a reality left gaps in the process where sometimes ideas were not supported by the technology or where the latest computing scenarios left the ideas far behind. Complementary and conflicting visions of the trajectory of "digital architecture, such as "Cybrid" (Anders), "Cyberization" (Benedict), "HyperReality" (Terashima), "Reflexive Architecture" (Spiller), "Liquid Architecture" (Novak), and "Hypersurface" (Perrella), have been proposed as legitimate bases for an alternate digital reality, but there has been no doubt a reductionist tendency of "inhabitation" in the conventional sense.

Another powerful idea that gained power was truly a product of science fiction. In 1984 William Gibson coined the word cyberspace in his novel Neuromancer. He described cyberspace as a "world of computers" around which a society was formed. Gibson depicts an "other" world where people existed in ether, in a faceless disembodied form. This was to be the future of our world, "a consensual hallucination experienced by billions of legitimate operators, in the nonspace of the mind." (Gibson, William. Neuromancer: 20th Anniversary Edition. New York: Ace Books, 2004. p.69)

Currently the most compelling realization of this idea is the Internet, which approaches the notion of a cyber society. However, when one examines the Internet critically, one cannot categorize this as a "world in itself", nor as a society at large. Without trivializing the notion of the formation of online communities, the Internet at most is an extended means of interactive communication and an ongoing attempt to manage knowledge and codify data, creating a network of networks.

Though the word "society" refers to a group of people with similar interests and backgrounds, the most inclusive and relevant meaning of society can rightly be termed as the totality of social relationships among humans. The key word here is "totality". The biggest obstacle that we face in this digital culture is one of inclusiveness. The question at this crucial juncture of societal evolution remains one of the holistic direction

in which this digital impetus will take us or, more importantly, what we as the people of this digital era should make of our future given the new technology. This question is bigger than our individual digital developments such as embedded computing devices or virtual environments, instead encompassing the very character of human life.

The speed with which the use of digital technology has pervaded innumerable facets of our lives is certainly compelling. However, the near-ubiquitous influence of this technology remains a fashion peripheral to the fabric of our lives rather than a new norm guiding us toward a significant sustainable existence. The fragmentary development of digital discovery can be partly attributed to the capricious demands of an impatient culture looking for instantaneous gratification.

Toward a new technopolis
The problem is neither one of technology nor one of architecture. To compartmentalize the progress of the digital age into numerous product-driven solutions is reductionist by nature. Undoubtedly, technology permits infinite possibilities, but we are at a risk of being assimilated in the process without fully realizing the potential of our future. It is easy to get sidetracked by seductive advancements, but we need to transcend the fleeting gratification of seeing the tool at work. The objective is to try to envision how the metropolis will evolve into the technopolis.

At the very basic level, communication happens most effectively when there are numerous channels of reinforcement. This is impossible via the digital medium alone. The moment two computers do not speak the same language the communication falls apart. There are no other fallback options such as context, gestures, physical place, or shared memories which might replace the lack of a common language. Moreover interaction can be truly eased when there is an environment where people feel safer and more comfortable. Unfettered interaction produces a breeding ground for fertile ideas which creates an encouraging platform for a vigorous and persistent society.

Tangible manifestation of place begins with embodiment. The memory of a society is dependent on physical landmarks; its embeddedness is a function of the creative impulse of inhabitation and creation, engendering a multiplicity of subjective

and tactile experiences. Embedded space is inhabited, experienced in a passive, reactive way, whereas nomadic spaces such as cyberspace are perceived, shaped, and defined by the nature of the user interface. It is difficult to comprehend place when it is conceived in relation to a moving point of reference. The idea of reliability and omnipresence play an important role in place making. The notion of space without place is disconcerting to some and incomprehensible to many. This is evidenced through the attempts made by designers of this digital generation to translate virtual scenarios to tactile environments.

Emphasizing the need for embodiment does not diminish the validity of cyberspace, but instead elevates the concept to a symbolic metaphor to emphasize the argument that the "other" world cannot be sustainable in isolation. It is important for technology-enabled expressions to be an extension of the whole of human experience, rather than a flight from reality. The existence of cyberspace in isolation can at best be temporal.

"To modernity, technology was for world making: to overcome the limits presented to us by our place in the physical world. Its goal has been pure artifice." (Raj Reddy, "Earthwares" Forum, Carnegie Mellon, Pittsburgh 2000). In the case of the modern movement, it is clear that the movement persisted and pervaded until it took on universal appeal. Where this revolution in mindset suited the needs of human society, we experienced unmatched economic progress and enhanced quality of life; where Modernism failed to do so, it erased the individual and collective intents of people and places. This set of mechanistic beliefs gave rise to a dogma that rejected the organic aspect of life. In its latter-day counterpart in cyberspace, the formula is at work again: a rejection of the nature of place making which has been rooted in human existence since early times. Standing in stark contrast to our humanity in toto is the notion that the world as we know it could possibly become adjunctive to the craze of cyberspace, yet another fatal attempt at disconnection in the historical timeline. The words of landscape architect Ian McHarg sum up this systemic incongruity well: "No species can survive in an environment of its own making".

With the aggregation of place, people and experiences comes the issue of context. One must understand that context is cumulative; new discoveries transform context but almost never eliminate the practices that created it in the first place. To go back to the example of modernism—

where fear of anomalies and "messy" spaces called for a universal "flattening" solution with complete disregard of context—the rigidity of the current proposal that computing will be the universal solution for the creation of a predictable and orderly world is frightening. Writers such as Aldo Rossi and Jane Jacobs raised the very same red flags in the 1960's in reaction to the proposals for the modern city. Our perceptions and conceptions of cyberspace need to be reexamined critically and modified to create a world that is not disembodied from its context. Science fiction cannot be directly translated into reality; the world as we know it is not a blank slate. The references of and to the past that we have built upon cannot be permanently erased. As Malcolm McCullough so eloquently puts it in his book Digital Ground, "The pattern of the living World . . . needs to be understood, not overcome."

The equation of cyberspace is only solvable if we use the constant that "one size fits all". It is essential to understand that, to create an effective framework for narrative memory, experiences of place and people need to accumulate in unpredictable ways. For systemic changes to be effective, one cannot afford to ignore the full spectrum of the embodied environment. Therefore the answer lies latent in measuring the immeasurables and cannot be achieved by architects or technologists alone. To operate within the structure of linear models is a fallacy; in trying to shape our immanent lives, one cannot ignore the human force of intent and expectation. The answer is not to create a highly individualized experience at every instance to accommodate our differences but to create a democratic process which allows for flexibility and choice where humans are the drivers in assimilation of technology into our lives at our own pace and not vice-versa. As with all other sustainable practices, the negotiation between the designed and the designer needs to be constant. Autocratic dicta of digital technology might induce a "learned" behavior at the beginning, but will certainly induce a reaction against the tyranny of an imposed worldview.

A participatory process is essential to create a viable social, physical and cultural infrastructure. If computing technology is truly this century's ideological catalyst, bringing about vast paradigmatic transformations, then we need to understand that a strategy comprised of pre-programmed situations will not satisfy the long-term goals of our society. If we do not want our environments coercively mandated for us by this digital force, then we need to take

charge and design our own environments whose qualities remain faithful to the principles of what we love most. Design involves discovery, not predisposition, an expansion of possibilities rather than a constriction of choices. David Kelly, the founder of IDEO, appropriately summarized, "The designer has a dream that goes beyond what exists, rather than fixing what exists".

Conclusion

Critical theorist Henri Lefebvre wrote in 1974 that, "To speak of 'producing space' sounds bizarre, so great is the sway still held by the idea that empty space is prior to whatever ends up filling it". The creation of cyberspace is based on this fallacious notion of "producing space" – it is but a technological derivation where the users have been invited in, after the fact. Good design needs to be both immersive and fundamentally integrated into the fabric of life. Moreover, it has to be an extension of our environments and ourselves. Human needs and experience must dictate the formation of place. A genuine paradigm shift can occur only when we understand that humans, not technology, are the drivers of this change. To form human experience around the possibilities of "the machine" is intrinsically reductionist and literally dehumanizing.

The unprecedented stimuli generated by the digital revolution, however, have undeniably fostered the evolution of our creative processes and have manifestly influenced the ways in which our environments are shaped. Consequently, we are grappling with the staggering impacts of digital technology on nearly every facet of society. The inherent problem with the process is that the ideas and manifestos that are currently shaping our places have been born in isolation, driven by a passion for testing the limits of the computing environment rather than by a coherent effort to forge a holistic path toward our future.

It is also important to acknowledge that the evolution of technology has induced significant transformations on a global scale. Entire cultures have undergone revolutionary change in adapting to the new era. The energy has swept us up like a tidal wave; we as a global collective neither anticipated its stealthy but speedy arrival nor possess a comprehensive vision of what the emerging technopolis ought to be. In his recent book, The World is Flat, Thomas Friedman explores the manifold economic and socio-cultural implications of new technologies. But with this flattening also comes a set of complexities, which are cultural, technological, economic and hierarchical all at once. Therefore it has become a cultural, not a technological problem.

Given the far-reaching effects and the critical juncture we are at in the beginning of the 21st century, the time has come for us to reach a consensus that will enable us to function as the conscious architects of our collective and individual futures. The purpose and path of this change needs to be explored, understood and channeled such that this technology can truly become an extension of our lives. It is critical to understand that design has barrier less influences, therefore it is essential that we expand the forum of discussion and broaden the education of its participants.

Our next step is to call for an inclusive yet definitive manifesto that delineates a framework for the new "technopolis". Only then can a genuine, comprehensive paradigm shift occur.

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