ProgBlog 15
2013

The dual world loop: an emerging driver of the future

By Michael Lee

An idea clicked into place, while reading Eric Schmidt's recently released book *The New Digital Age*, that much of our behaviour today is shaped by the convergence and interface between the digital and physical worlds.

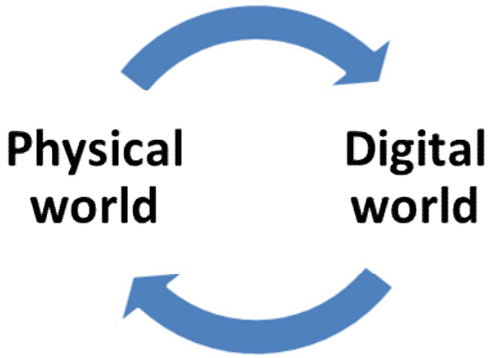

Figure 1 Dual World Loop

The growing relationship between these two worlds has already become a dynamic feedback loop. We digitize information about the real world which helps us to manage our lives better, creating more efficient systems and processes for both households and organisations while greatly speeding up communication. Digitization of information and communication, in turn, saves valuable time which can then be used to add more value to society, or to our own lives, or simply to explore the digital world further for leisure and/or for learning purposes. In the dual world loop in Figure 1, the digital world feeds the real world which feeds it, continually and globally, in a never-ending cycle.

For example, we might send a mobile money transfer and the recipient, located miles away, can cash out the money at a local ATM. We might 3D print a real object using a software template. Or we might see a striking sunset, take a photo and upload it onto the mobile internet for others in different geographical locations to enjoy in real time. We might be drinking coffee at a café with a friend and spot a news flash on our mobile device which then becomes a topic of conversation there and then. Or picture a YouTube music video going viral and leading to some producers queuing up to offer an unknown out-of-work artist a promising contract. We store files in the cloud and then print any documents we may need for an upcoming in-person meeting. We see a new book or DVD in a store but decide to buy it online from Amazon.com using an online payment and pretty soon it gets dispatched and delivered to our homes. We text a loved one to remind them to switch off the stove or to put out the garbage. An activist sends mobile messages to fellow protestors instructing them to meet at a stipulated location at a specified time.

Welcome to the fast-moving, never-ending **dual world loop**. It's the closest, most intimate and life-changing relationship ever experienced between humans and technology. It doesn't take a genius to conclude that this convergence of the digital world and the physical world is going to become a major driver of new technologies, products, services, businesses and wealth as well as of future human behaviour.

But what exactly is a loop of this kind?

The New Oxford Dictionary of English defines a loop as a structure, series, or process, the end of which is connected to the beginning. This flow from beginning to end and then back to the beginning again produces continuous interaction between the two worlds. The loop is powerful because of feedback, which is seen as a self-correcting mechanism to control a process or system through its results and effects. And this self-correcting, value-adding feedback is happening on a truly enormous, planetary scale. We're entering an era in which about 5bn gigabytes of data will be created every 10 minutes. By 2016, there should be around 3bn internet users. And by 2015, more people will access internet via a mobile device than via PCs.

This exponentially expanding digital space, made available through internet and the Web, is like a giant global brain accompanying us in our daily lives through its presence on our laptops, pcs, smartphones, tablets and mobile phones. It's become our second brain, a powerful additional intelligence that's getting easier and quicker to plug into. It also connects us to a world network of organizations, products and services, countries and, of course, individuals. As dependent as we have become on this dual informational and networking power of digital space, it's still just that – a *second* brain.

Our first brain, inside our heads, remains in control of who we are and what we do. Our human existence will always be primarily located in the physical world, where our survival and life are lived. We will always crave what futurist and physicist Dr. Michio Kaku calls high-touch experience, since we are experiential, existential beings. Nevertheless, we're no longer the same kind of people we were before personal computers. Before the Information Age, humans were still largely creatures of industry. A new layer has been added to our industrial being: the mass informational and digital layer.

As social beings, we've become multi-layered, reflecting our evolution as a species from agricultural to industrial to digital beings, each layer of development leaving a residue in our social practices, values and genes:

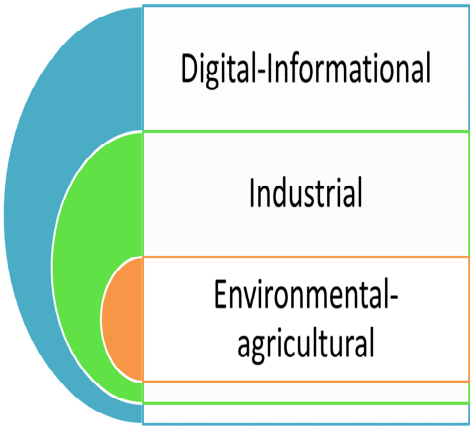

Figure 2 Multi-layered Structure of Social Beings for the Digital Age

We continuously encounter the interface between the two worlds. Recently, my wife assured me that the game of solitaire on her tablet provides a superior experience to playing with real cards. So it's not as if there is a dichotomy between the high-touch *physical* world and high-tech *digital* world. There are examples when the virtual world is perceived as better than the original experience being copied.

Instead of a dichotomy between the two worlds, there is a convergence, a deepening integration, a virtualization of many aspects of life. The nature of this convergence, the competition between the physical and the virtual for superiority, is where the real action is these days. Its outcome will determine the shape of social life for years, if not decades, to come. We are all dual citizens, amphibiously dwelling in the online and offline environments which circle back on each other.

But there is a limit to digitization in that it often leads to a diminishment of anonymity, privacy, confidentiality and, at times, security, when compared to physical products. There's also genuine global concern about increasing surveillance and manipulation of personal data by both governments and corporations in the digital age. In addition, digital products are, of course, systems-dependent and when the system goes down, the products and services go down with it.

And some believe Moore's Law itself will peak in about 2020 due to the physical limits to miniaturization. Even digitization is subject to the laws of physics.

Despite these actual and potential limits, the digital world will continue to expand at phenomenal rates for the foreseeable future. And our dual world is based on an absolute inter-dependence between digitization and the original real world in which we live, breathe and work.

The physical world will always remain the foundation of our human existence. There's no such thing as e-food. But how we experience our lives will increasingly be filtered through the lens of digital technologies. On that point, the future danger for individuals, businesses and societies would be to tip the balance in favour of the domination of the physical by the virtual, the human by the machine. That would be a schism. The line in the dust is not to allow any virtualization of human identity, consciousness or values or to devalue the physical world, including the environment and our home in the cosmos.

For now, we embrace the dual world loop as the most dynamic cauldron of creation and change in our social evolution to date. Let the circle flow.

Until we reach that line in the dust.

Michael Lee's book *Knowing our Future – the startling case for futurology* is available at the publisher http://www.infideas.com/pages/store/products/ec_view.asp?PID=1804 or on Amazon.com.

Acknowledgements & websites

Gore, A. 2013. *The Future*. New York: Random House Publishing Group.
http://www.algore.com
Pearsall, J, ed. 1998. *The New Oxford Dictionary of English*. Oxford: Oxford University Press.
Schmidt, E & Cohen, J. 2013. *The New Digital Age – reshaping the future of people, nations and business*. London: John Murray (Publishers).