

Digital and green: a very convenient marriage

Carlota Perez – November 2, 2020

We are currently facing a critical decision. While the pandemic destroys part of the economy, even greater damage is threatened by climate change and the environmental limits. After Covid, do we reconstruct for 'business as usual' or do we take advantage of the critical situation to make a leap into a sustainable, better and safer future?

The mass production revolution, with its materials and energy-intensive consumption patterns, created a very powerful paradigm defining what the good life was about. The majorities are holding on to it and the emerging countries are still copying it. And yet, most of us are aware of its terrible environmental consequences and the need for green production methods and lifestyles. Even the electronic industries, which are all about intangible information processing and transmission were unable to dislodge those wasteful practices, and adopted them all, including careless energy consumption and planned obsolescence and, therefore, continuing further emissions and waste. Worse still, the advocates of a green future are so convinced that growth is inevitably about mass production that they propose degrowth as the solution. I suggest another route: shaping and taking advantage of the power of the information revolution to overcome the mass production model and move people and the economy towards sustainability.

Each technological revolution has enabled a leap in productivity at the cost of destroying many jobs and skills. It is the classic Schumpeterian 'creative destruction'. However, each has also performed two other tasks: One is creating the conditions for new lifestyles that generate new demand for more than replacing lost employment and the other is overcoming the limits and problems created by the previous revolution. In other words, there is a pattern in the current chaos that provides a way out. But it doesn't happen automatically. The new technologies set the stage and provide the tools; it is society that gives them direction. The mass production revolution was shaped very differently by Hitler, Stalin and the Keynesian democracies. We now need to tilt the information revolution in a green direction. By aiming to save the environment we can create millions of jobs and spur hundreds of important innovations: the best way to save the economy is to decidedly take the green direction, and that is exactly why we need to make sure that green marries digital. It is not a simple technological decision but a systemic socio-political one.

Jobs are not high or low-income by nature. The so-called 'middle income jobs' in manufacturing became low-income as soon as they got to Asia. Right after WWII the West had made a socio-political decision, with the help of high productivity and the labour unions, to pay enough for blue collar workers to own a suburban house and a car, which generated a rich economic activity around that new lifestyle. It was a way of creating mass demand. We are at the moment where we will have to do the same, but with another technological potential and for a very different – but equally desirable – way of life.

Just as we took advantage of the low cost of oil and the possibility of petrochemical materials to produce more and cheaper products for mass consumption, we now need to take advantage of the low cost of information, its processing and transmission to massively

dematerialize GDP and lifestyles. By changing the relative cost and tax structure to favour sustainability, green investments and innovations can become the most profitable, and green products and services can become the most desirable among consumers.

We can now replace the American Way of Life (which seemed so good at the time) with a smart Green Way of Life, centred on health, exercise, caring, creativity, nutritious fresh foods, experiences, learning, communication, rental and maintenance rather than possession and waste. It's already being adopted by the young and the more educated. And all those elements of a sustainable way of life can best be enabled by ICTs.

And this is not only good wishes. We need the ICT industries to shift their creativity and the power of the technologies they master towards solving humanity's greatest current problems: the environment, inequality and health.

Imagine changing to a rental and maintenance economy for all durable goods. Instead of cheap, low quality and wasteful 'planned obsolescence' we could shift to an economy where many products are turned into intangible services – as music, film and books already are – and where 'durable' products are made truly durable, with the most advanced materials and environmentally-friendly technologies. Producing for niche-markets with high profit margins is a key characteristic of the ICT paradigm, in this case, the niche would unleash an active rental, sharing, and second-hand market, offering different entry levels depending on income, and with products undergoing a long cycle of constant upgrades, maintenance, repair and reuse up to the final disassembly and recycling. A refrigerator could last 80 years, working well. Diagnostics would be computer based, spare parts specifications for 3-D printing would be downloaded from the Internet, sidestepping their manufacture, shelving and transportation; with the help of the internet of things (IoT), the history of each product could be tracked throughout its entire lifespan, facilitating electronic diagnostics and transparent pricing. This circular economy would generate hundreds of thousands of jobs for workers displaced from industry. There would also be a lot of computer aided redesigning to be done by creative graduates as well as massive innovation in new sustainable materials. And this is one of many job-creating lifestyle changes facilitated by ICT.

Three things are clear: First, a green lifestyle will not spread by guilt or fear, it will only spread by desire and aspiration of the majorities. The smart green life has to be a good life! Second, it will not succeed by rejecting technology but by embracing and shaping it: ICTs are by nature intangible and are therefore almost a gift for dematerializing the economy. And third: We cannot have a fair society that really improves the lives of all (including the developing world) without growth. But we must radically shift the nature of growth towards dematerialized and circular growth. Using ICTs, we can turn products into services, possession into sharing, waste into circularity, change our eating habits (to fresh food produced hydroponically around cities) thereby maximising health and reducing environmental damage, make computer-guided ships aided by sail and solar, multiply biomaterials and biofuels, and so on.

In all this, robotics can be a great ally. Progress is based on productivity increases, that is how we can reduce working hours, produce enough to care for the old (with longer lives) and care for our children. And to be able to fairly pay the workers that have proven so essential during the Covid-19 pandemic, we need a part of the economy with very high

productivity to promote – counting on a fair and transparent tax system – vast caring and service sectors.

But we must move the digital revolution in that direction. And that is done by government policy and consumer demand. We need policies that induce such behaviour changes. To induce a reduction in materials, energy and transport we could tax that part of value, instead of VAT. We could set up interactive smart grids that allow people to use electricity at cheaper times and sell battery-stored energy – from their own solar power or electric car – when it's expensive. We could prohibit dumping durable goods in the municipal garbage sites and make producers responsible for the full life of their products, stimulating the rental and maintenance web-enabled system. We could set up a universal basic income to be automatically transferred to people's accounts to be used with debit cards and have it returned in taxes by those who earn above it. In general government services should be easier to use than Amazon Prime.

The battle between state interventionism and free-market fundamentalism is sterile and anachronistic. Golden ages happen when a positive sum game is set up between business and society. In fact, we should remember that the legitimacy of capitalism rests in its claim that the profits acquired by some benefits the many. Only a win-win game can overcome the populist wave that is taking over the world. And, in any case, the only way to move fast enough to avoid a climatic catastrophe is to reach a wide-ranging consensus.

If we know what the goal is, policy imagination can find the solutions.