



TOWARDS A NEW GOLDEN AGE

Posted by [Frances Coppola](#) on Jun 19th 2014, 10 Comments

At the launch of Nesta's book "Our Work Here Is Done: Visions of a Robot Economy", Carlota Perez described how our current economic troubles are an inevitable and necessary part of the process of technological change. We are at a turning point: if we get it right, there could be a new Golden Age. But for this to happen, there needs to be radical change in current social structures and norms. Do we have the vision and courage to make this happen?

Perez [argues that](#) technological change does not proceed smoothly, but goes in waves or cycles of 40-60 years. She identifies five waves since the late 18th century:

- Starting in 1771 - mechanisation, factories, canals. This is what we usually call the "Industrial Revolution".
- Starting in 1829 - coal, steam, railways.
- Starting in the mid-1870s - steel and heavy engineering.
- Starting in 1908 – oil, cars, mass production. At this point the centre of gravity shifted to America. This is the wave that we are still trying to ride, even though it has actually been superseded by...
- Starting in 1971 – information technology and communications. Perez argues that if history is any guide, this wave still has another 20-30 years to go. What will follow it? Well...
- starting in about 2030 (or sooner), Perez suggests maybe biotechnology, bioelectronics, nanotechnology, new materials. I think perhaps cybernetics and the energy revolution. We shall see. Whatever it is, it is not yet "emergent".

Each wave of technological change produces a great surge of development: growth, employment, new products, new industries, and – most important of all – new infrastructures for carrying goods, energy, people, and information farther, faster, and more cheaply. And although they are very different technologically, each revolution follows a similar pattern of phases and changing business climates.

Perez identifies four phases in each technological wave, with a break in between the second and third. The first phase she calls Gestation, during which the technology is developed and tested, but not widely adopted. The second phase she calls Installation. In this phase financial capital enthusiastically finances widespread use of the new technologies, creating booms. These booms eventually turn to bust, causing financial crisis and destruction of value: the ensuing period of instability and uncertainty she calls the "Turning Point", and

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she comments that it can last years. The longest Turning Point she identifies is the 1930s, when the euphoria of the 1920s gave way to depression and eventually to war. And she argues that we are now in the Turning Point period of the information technology wave.

If she is right, then the future is bright. Indeed, the future could be golden. The Turning Point in each of the previous technological revolutions has eventually given way to a period of Deployment, when the technology is widely used not just to benefit the rich, but to the benefit of society as a whole – a Golden Age. So the Victorian Golden Age was a natural development of the Industrial Revolution: the Belle Epoque grew out of the steam and rail revolution: the Roaring Twenties developed from the heavy industrial revolution; and the post-war “you’ve never had it so good” period grew from the oil and mass production revolution.

But it's not quite that simple. In each age, there is a terrible alternative – social breakdown, famine, war. These were narrowly avoided in the nineteenth centuries and not avoided at all in the 20th: the two 20th century Turning Points both involved cataclysmic wars. Yes, each was then followed by a new Golden Age, though in the case of the 1920s, not for long – but at what cost? Do we have to cross the raging torrent of war and social collapse to reach the next Golden Age?

Whether we reach the next Golden Age relatively painlessly, or via mass destruction, depends on whether we can allow ourselves to transform our social attitudes and institutions. The Installation phase confronts the Mature phase of the old technology, challenging entrenched beliefs and practices. If the beliefs and practices appropriate to the old technology can quickly be discarded in favour of those demanded by the new technology, the period of instability can be short and the transition relatively smooth. But if the cultural norms established to support the old technology fail to adapt – or if powerful interests dependent on the old technology refuse to give way –, the transition is far more traumatic. In the end, the old technology – and the social structures, institutions and belief systems that go with it – must give way to the new: the question is simply how difficult we make this change for ourselves.

In the past, the direction of change has been set by visionaries. In the 1930s, economic thought was led by the British economist John Maynard Keynes, and the American President Franklin D. Roosevelt implemented far-reaching policy reforms. After World War II Keynes' economic ideas, together with the social reforms of William Beveridge, created the social and economic paradigm that helped to bring in the post-war Golden Age. But now, it is hard to see who the visionaries are. “Where is the Keynes of today?” asked Perez at the NESTA presentation.

I think I have an answer. One of the defining features of the information technology and communications revolution is the decline of the individual decision-maker and the growth of collaboration, teams and sharing. We have seen this most obviously in music-making, where much of the greatest music of the late 20th Century was created not by individual composers but by groups. But we are now seeing the same phenomenon in other areas too. The “hive mind” created by social media and similar technologies is far more powerful than any individual could possibly be, and from it can come not only original ideas but a real impetus for change. The “visionaries” of this technological age are not individuals, but groups. That is why they are hard to see. But it is also why they are hard to resist.

We saw this effect in action at the launch of NESTA's book. In the Q&A after the presentations, the entire panel agreed that some form of basic income would best address

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of the instability and uncertainty of the Turning Point into the new Golden Age. I have to say things don't look good at the moment: entrenched belief in the importance of people doing work, any work, just to survive seems to be winning the day at the moment, along with archaic ideas about the role of government and the nature of money. But work as we know it is changing fundamentally: money as we know it is changing fundamentally. The forces driving these changes are beyond our control: eventually government and social structures, too, must also change fundamentally.

Perez observes that market fundamentalism today is as much an obstacle to change as state fundamentalism was in the 1970s and 1980s. Indeed it is. Artificial antagonism between market and state, private sector and public sector, is a major obstacle to progress. In keeping with the new paradigm of collaboration and sharing, the state should be redefined as a player in the market, rather than a controller of the market, and partner rather than competitor of private sector businesses.

There will be a new Golden Age. And we can have it sooner rather than later, if we are prepared to abandon outmoded ideas and institutions.

But eventually, in its turn, the information technology wave will mature and die, being replaced by something we can't yet see. I hope that when the time comes we will learn from the mistakes of the past. The death of a technological wave does not have to mean mass unemployment and destruction of whole communities. We must find ways of supporting people through these transition times. Technology must die, but people need to be enabled to live.

Related reading:

[The changing nature of work](#)

[Our work here is done: visions of a robot economy](#) – NESTA (book)

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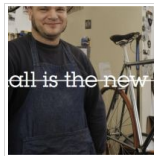
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Posted by Timothy Chambers on Jun 23rd 2014 22:49

The 1920s twenties Golden Age was an American phenomenon, for sure, and as an American, I am well aware of my own history. It was also a time when American labor markets were flooded with poor immigrants and wages were falling drastically, as they have been for the last thirty years. I am sure that to most of the world all Americans appeared to be rich by comparison with themselves, just as they do today, but those huddled in urban tenements and rural shacks and mining towns had a very different perspective then, just as they do today. The wealth that one sees in poor people's home is paid for with easy credit at rates that are usurious and guaranteed to keep them poor.

If bankers (not their lowly clerks) don't benefit from bubbles, then who exactly does? If they don't benefit, then why do they wish to keep markets deregulated so that bubbles will continue to occur?



Posted by Frances Coppola on Jun 22nd 2014 10:50

Timothy,

I would seriously suggest you read Perez's work. And some history, too. The foundations of the modern welfare state were laid in the late 19th/early 20th century - the state old age pension, for example, dates back to 1908. And things we take for granted such as universal sanitation also date back to that time. I am talking about the UK here, of course - one of the criticisms of Perez's theory is that the pace of technological change varies from country to country and its social effects also vary. The 1920s Golden Age was really an American phenomenon: Europe,

"Civilization" is built by people who have a grand plan for "humanity". It is some person's vision, usually some man's vision, that he makes real by rallying political support for his plan of large scale social organization. As the god of his own world, the visionary is the architect and ruler of the civilization he founded. He directs the affairs of the society according to his vision. His "government" serves his vision, and administers it upon the masses who have been organized under his ruling authority. Civilization is inherently and essentially hierarchical and oligarchic. People do not form consensus unless some dominant mind or power drives the consensus. Historically, religions have been the molders of the consensus that justifies rule by the rulers. Civilization has never existed without a priesthood preaching sophistries to the ruled masses, manufacturing consensus in conformity with the ideology that justifies the society's hierarchical social structures.

Since WWII the priesthood role has moved from a religious ideology to an economic ideology. Economists

