

Closing the Loop: The New Syndustrial Revolution

By Wayne Visser

The Industrial Revolution – a term popularised by English economic historian Arnold Toynbee – signalled the tectonic shift from a predominantly agrarian, subsistence-based economy to an increasingly mechanised, market-based economy, following the invention of the steam engine. The Information Revolution of the 20th century marked another fundamental shift, driven by computers and the internet.

Now, once again, our industrial society is transforming due to what I call the Integration Revolution (or Syndustrial Revolution), which is driven by the confluence of three innovation trends, driven by renewable, sharing and smart technologies. We see this disruptive change occurring along intersecting fault-lines, namely the shifts from a surfeit to a sharing economy, from a linear to a circular economy and from an atomised to networked economy.

This Integration Revolution is the subject of a feature-length documentary called *Closing the Loop*, which I am currently filming together with Emmy Award winning director, Graham Sheldon¹. For the past 8 months, we have been visiting pioneers and prophets of the Integration Revolution – in Europe, Latin America and Africa – to record their stories and predictions.

In this *Closing the Loop* article series, I will be unpacking what the Integration Revolution really means – i.e. the business models behind the smart, sharing and circular economies – and showing how companies and governments around the world are already taking steps to tap into this \$4.5+ trillion market opportunity². To get us started, it is worth paying tribute to some of the intellectual progenitors of the Integration Revolution.

For example, British economist Kenneth Boulding introduced the concept of a 'spaceship economy' in 1966³, 'in which the earth has become a single spaceship, without unlimited reservoirs of anything, either for extraction or for pollution, and in which, therefore, man must find his place in a cyclical ecological system which is capable of continuous reproduction of material form even though it cannot escape having inputs of energy.'

Fast-forwarding through the decades, we then saw the practice of life cycle analysis emerging in the 1970s (promoted by the US Environmental Protection Agency), industrial ecology in the 1980s (popularised by Robert Frosch and Nicholas E. Gallopoulos⁴), cleaner production in the 1990s (promoted by the UN Environment Programme), cradle to cradle in the 2000s (conceived by William McDonough and Michael Braungart⁵) and now, the closed-loop, or circular economy (being championed variously by the Ellen Macarthur Foundation, World Economic Forum and UN Global Compact's Breakthrough Project).

So what is this Integration Revolution really? Is it smart cities and autonomous networked cars? Is it ride-sharing services like Uber and Lyft? Is recycling, or upcycling or zero-waste initiatives? Is it the shift from buying products to leasing services? Is it moving from a take-make-waste linear economy to a circular economy? In fact, it is all these things and more, which is what makes it so confusing.

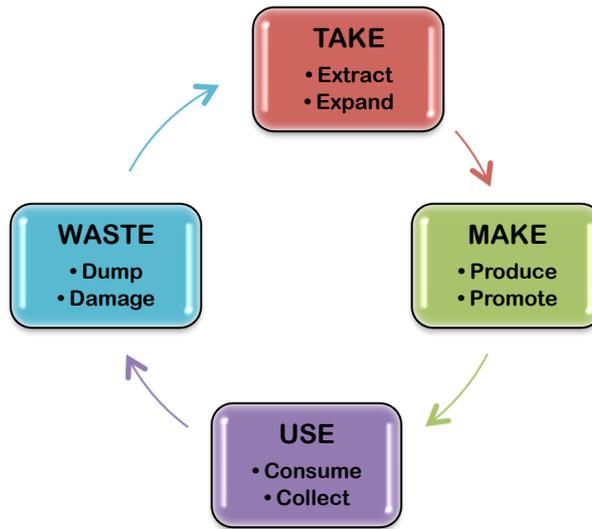
So I'd like to propose a simple model, which I will use to frame our discussion in this series. I call it the New Syndustrial Model, because it is really a new economic paradigm and set of business models to create better synergies in our industrial society. A high-synergy society does not build economic capital by destroying natural capital, eroding social capital and exploiting human capital in the way that our current win-lose-lose-lose capitalist system does.

In the Old Industrial Model (see Figure 1), we take, make, use and waste:

- We Take – by depleting non-renewable resources and over-use renewable resources (Extract) and by striving for limitless economic growth (Expand);

- We Make – by producing any products and services that the market demands (Produce) and persuading customers to buy and consume more (Promote);
- We Use – by buying more than needed, leading to overconsumption (Consume) and by individually owning what could be shared (Collect); and
- We Waste – by turning consumed products into trash and pollution (Dump) and by creating toxins and impacts that harm people and nature (Damage)

Figure 1: Old Industrial Model

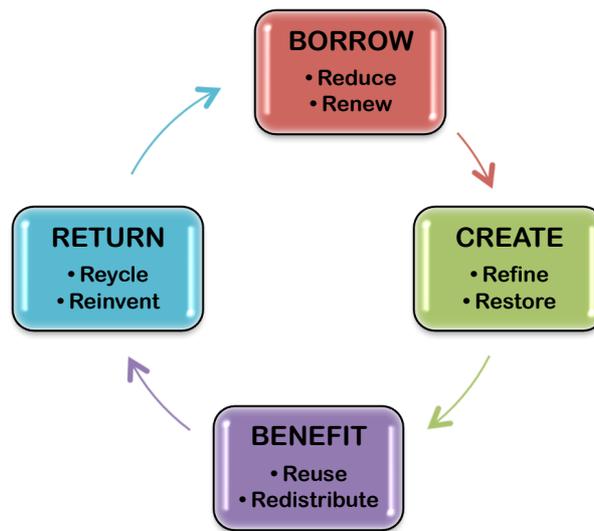


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In the New Syndustrial Model (see Figure 2), we borrow, create, benefit and return:

- We Borrow – by conserving all natural resources (Reduce) and increasing renewable resource use (Renew);
- We Create – by designing and making products with no negative impact (Refine) and innovating products with positive impact (Restore);
- We Benefit – by extending the product by repairing and reusing (Reuse) and by improving use by leasing and sharing (Redistribute); and
- We Return – by using end-of-first-life (EOFL) materials to recreate the same products (Recycle) and to create new products (Reinvent).

Figure 2: New Syndustrial Model



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Over the coming weeks and months, I will use this model to share what we have discovered during our filming of Closing the Loop. To be sure, many companies and economies are still stuck in the Old Industrial Model and we have a long way to go before we reach the New Syndustrial Model, but our explorations have showed that not only is it possible and preferrable, but this new industrial revolution is already happening.

Article reference

Visser, W. (2016) Closing the Loop: The New Syndustrial Revolution, *Huffington Post*, 17 Oct.

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¹ We expect to finish filming by the end of 2016 and to release the documentary for streaming and download by mid-2017.

² According to Accenture analysis in [Waste to Wealth](#), by Jakob Rutqvist and Peter Lacy, the circular economy could be worth \$4.5 trillion by 2030

³ Boulding, K. E. (1966). The economics of the coming Spaceship Earth. Environmental Quality in a Growing Economy: Essays from the Sixth RFF Forum. H. Jarrett. Baltimore, John Hopkins University Press: 3-14. Note that Barbara Ward and Buckminster Fuller also wrote about 'Spaceship Earth' around the same time.

⁴ Frosch, R.A. & Gallopoulos, N.E. (1989). Strategies for manufacturing. *Scientific American*. 261 (3): 144–152.

⁵ Braungart, M. & McDonough, W. (2002). *Cradle to Cradle: Remaking the Way We Make Things*. New York: North Point Press.