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Square peg in a circular economy hole

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Since the birth of the industrial revolution, the global economy has been based on a linear "take, make and waste" model. It was taken for granted that the resources needed to drive growth would be available forever.

But it has become clear that these resources — from water and land to energy and food — are, in fact, facing severe constraints. This has led to the concept of the circular economy, which promotes a way of doing business that tries to decouple economic growth from the overuse of resources, gaining traction.

Interface, the carpet-tile maker, is attempting closed-loop material use. In rural coastal areas of the Philippines, fishing nets are recycled into carpet tiles

According to the UK's Carbon Trust, the environmental advisory organisation, there are three main approaches. The first is a move from buying and owning products to leasing or renting the service the product provides instead. This model is already well developed in products ranging from farm machinery to aircraft engines, but it is being applied to other products as well.

Philips, the Dutch conglomerate, recently won a contract to provide "lighting as a service" to Schiphol airport in Amsterdam. The deal means that Schiphol pays for the light it uses, while Philips retains ownership of all fixtures and installations and is responsible for the performance of the system and for recycling it at the end of its life.

Frank van der Vloed, general manager of Philips Lighting Benelux, says: "We believe that more and more forward-thinking businesses will move to a 'light-as-a-service model'. After all, most of us are used to this kind of model — for example, I drink water but I do not have a reservoir in my basement."

The second approach is remanufacturing, where products are taken back at the end of the product's life and reconditioned for resale. Renault, the carmaker, operates a dedicated remanufacturing plant just outside Paris. Its remanufactured parts use 80 per cent less energy, 88 per cent less water and cut waste by 70 per cent, the company says. With parts being sold at 50-70 per cent of their original price, the plant has turned remanufacturing into a €200m business.

Interface, the carpet-tile maker, is attempting the final approach, closed-loop material use. In an attempt to reduce its environmental impact, the company started taking back its tiles in 2007 and recycling the various components so they could be reused.

"Everything to do with carpet is oil based," says Rob Boogaard, chief executive of Interface. "We are basically an extension of the petrochemical industry."

But while a few companies have embraced the idea, it is an area that has attracted little attention from the financial sector.

"Financial institutions are still thinking fairly traditionally. They are not that far along with their thinking yet. We need them to redefine their views on risk and value," Mr Boogaard says.

"Rethinking finance in a circular economy", a new report from ING, the Dutch bank, looks at how growth in circular business models could affect the finance sector.

Now, with the principles of the circular economy moving into the mainstream, the financial community is taking a closer look at the issue and the opportunities and challenges it could create.

"It is early days at the moment, but we recognise that an increasing world population and the increasing consumption of a growing middle class mean we need to address the issue of scarce resources," says Koos Timmermans, vice-chairman of ING.

However, the circular economy is very different to the linear economy, says Jamie Butterworth, partner at Circularity Capital, the private equity fund, and former chief executive of the Ellen MacArthur Foundation, a global hub for circular economy innovation set up by the round-the-world yachtswoman.

"You tend to see different business models that are able to use assets or products very differently."

And just as the circular economy could prove disruptive for traditional companies, it will present some fairly fundamental challenges to the finance sector as well.

These include banks having to cope with the changing nature of company cash flows as customers switch from paying for a product in full at the start of its life to a series of payments over the lifespan of a product. Cash flows become more important than the underlying value of an asset and contracts become a much more important part of doing business, as does the creditworthiness of customers.

Companies switching to selling services rather than products will also need more up-front capital to fund their growth at the same time that they have less concrete inventory to offer as collateral.

On the other hand, secondhand markets for remanufactured products and waste, which are often not included in linear business models, can create considerable value and make circular business models more viable, says Mr Timmermans. Longterm lease arrangements also protect companies from raw-material price volatility to an extent.

Banks should consider what the circular economy means for their own business as well as their customers', says Gerben Hieminga, senior economist at ING.

"That means adopting longer time horizons and being aware of the potential of concepts such as product life extension, end-of-life use of assets and performance-based business models. It could also mean getting involved in supply-chain finance to help companies 'close the loop' for their products," he says.

Not everyone is convinced the sector is ready for this. "They [financial institutions] are stuck in this old way of thinking, but in this new model there is a broader opportunity for them. If I was them, I would be really digging in to that opportunity," says Mr Boogard.

The banks are "not that intellectually equipped to take part in this at the moment", adds Mr Butterworth, "partly because they have spent so much time investing in the linear economy. On the other hand, they are very good at seizing opportunities, so if you can demonstrate it makes money, they will jump at it".

But Mr Timmermans points out that there is still work to be done to make the circular economy a reality at the consumer level.

"At the moment, it works better for [business to business] than [business to consumer]. In consumer goods, the circular model often works well for the producer, but they forget the customer. It needs to be cost competitive.

"But banks are facilitators for the economy. If the economy changes, we have to make sure we adapt our products," he says.

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