CIRCULAR IQ:

enabling circular procurement for the public and private sectors

START-UP DETAILS

Name: CircularIQ
Website: circular-iq.com
Sector(s): ICT / Procurement / Data Management
Established: 2016
Investment-to-date: €800,000
Location: Amsterdam, The Netherlands
Number of Staff: 6

Key messages

- A circular economy demands transparency throughout complex supply chains to assess the circularity of a product. This information, however, is currently either of varying quality or difficult to find.
- Circular IQ, a Dutch EIT Climate-KIC start-up, have developed a cloud-based platform which standardises product and supply chain data, enabling buyers to compare supplier circularity credentials.
- Innovative circular business models are, by definition, unproven at scale, and this can make it difficult to attract investment. Identifying suitable financial vehicles and investors who understand this new economic model is vital.
- Digital innovation alone is not necessarily sufficient to transform existing production systems; it requires support from other system elements (e.g. circular procurement policies which create new markets for circular products).

Introduction

Public procurement – the purchase of goods, services and works on behalf of a public authority – has significant power. It accounts for an average of 12% of gross domestic product (GDP) in OECD countries, increasing to almost 30% in developing countries (1). Sustainable procurement is increasingly recognised as having a key role to play in driving market demand for products and services which can contribute to a reduction in greenhouse gas emissions (GHGs).

In a European context, government spending accounts for 14% of the EU's GDP (2) and efforts by Europe's public bodies to move towards more environmentally friendly procurement, in line with the EU 2015 Action Plan for a Circular Economy (3), are increasing. The circular economy refers to a restorative economic model, which seeks to extend the life of products, components and materials by keeping these in use within the economy for as long as possible. Circular strategies include, but are not limited to: eco-design, re-use, repair, refurbishment, remanufacturing, product-service systems and recycling. Despite efforts to align EU public procurement criteria and procedures with circular economy principles (4), procurement officials face several challenges.

Public procurement operates by way of a tender or competitive bidding process, whereby a call for goods, services or works is announced and the received bids are compared to ensure the best price-quality combination. One of the biggest obstacles that procurement officials face when opening procurement for circular items relates to the lack of reliable and verifiable data for comparative purposes. For example, the information that manufacturers provide on their products' environmental impact varies widely in breadth and quality. Even when a product might be certified as "green" or "sustainable", given the complexity of global supply chains, this does not always reveal much about the raw materials from which it is made. There are also dozens of different accreditation schemes, each with their own criteria and language, making like-for-like comparisons difficult. This makes gathering, verifying and standardising this data for comparative purposes complex.

Circular IQ, a Dutch EIT Climate-KIC start-up founded in 2016, seeks to address these challenges. Circular IQ has developed a cloud-based platform that supports improved decision-making by procurement officials. By collecting and standardising information on the circular performance of products, Circular IQ enables buyers to make like-for-like comparisons of products, materials, and even the suppliers themselves. "We want to increase transparency, because we think this can help spark collaboration. Collaboration and exchange of data are vital pre-conditions for arriving at a circular economy," says Roy Vercoulen, co-founder and CEO of Circular IQ.

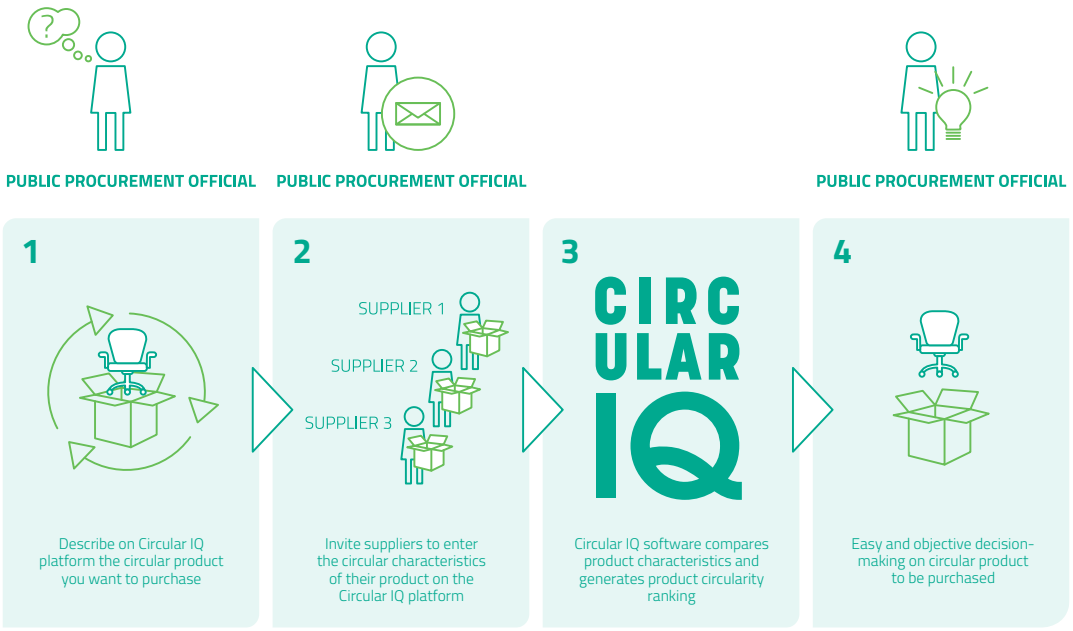

Figure 1: User experience of Circular IQ's platform © Circular IQ

Circular IQ's business model

Circular IQ's platform enables users to directly compare the circularity credentials of products, materials, and even the suppliers themselves. For example, a procurement official choosing between two makes of chair might be presented with a lifecycle analysis by one supplier and a sustainability certification from a programme such as Cradle to Cradle by another. But how can these be compared? Circular IQ's platform provides an answer to this problem.

Buyers can invite any suppliers who have expressed an interest in bidding for a particular tender to upload relevant data on their products into Circular IQ's system. Based on the particular buyer's requirements, Circular IQ extracts the relevant information from these sources and presents it to the buyer in a standardised format, enabling the buyer to compare the products' circular credentials in a straightforward way (See Figure 1 for a visualisation of this process).

Circular IQ's income comes from a fee paid by procurement professionals and contract managers who use the platform; it is free to use for suppliers responding to calls for tenders through the platform. Circular IQ configures its software to meet procurement users' needs, offering pay-per-use services for PDF downloads and benchmarks (5). Feedback from Circular IQ's customers suggests that the development and evaluation of circular procurement projects can – without the use of specialised software - take up to 50% longer than traditional procurement, meaning the Circular IQ platform is fulfilling a significant need while also saving time and money.

After going through several iterations of their business model, with support provided by EIT Climate-KIC's Dutch Accelerator programme, Circular IQ concluded that the core value for their customers is in access to the 'product circularity reports' generated by their platform. These reports display data that present the composition of different products, materials or suppliers, enabling objective assessments by procurement officials. Not only do these reports facilitate benchmarking and support decision-making, they also add value by easing communication between procurement colleagues and suppliers regarding the circularity of products.

Since launching the first iteration of its software in early 2017, Circular IQ has conducted pilot projects with a range of large corporates such as Dutch telecommunication company KPN and Office Furniture Manufacturer Royal Ahrend to ensure it was targeting the right customer segment and creating value for these users. These pilots enabled assumption testing on the ground, and the resulting learnings have been crucial in ensuring that Circular IQ did not rush into product deployment

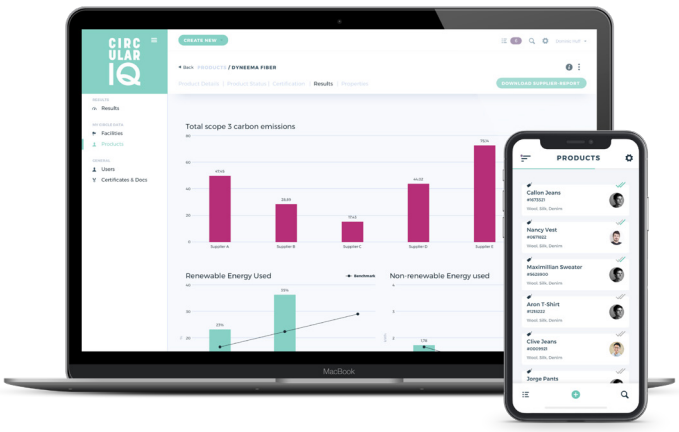

Figure 2: Circular IQ's web and mobile interface © Circular IQ

prematurely. See Figure 2 for an example of Circular IQ's platform user interface.

System Conditions

With climate change requiring urgent and concerted action, there is a need to reconfigure and transform our economies and societies. Revolutionary digital technologies alone will not live up to the mark as they are not guaranteed access to market; it is often the surrounding environment that proves decisive on whether an innovation will flourish or perish. This is because the innovation is a part of a wider system and influenced by key system elements, such as: Policy, Skills, Behaviour, Market Structures, Information Flows, Organisational Governance and Finance. Innovation needs to happen on all these fronts ('systems innovation') in order to achieve substantial system transformation.

Circular IQ: Enablers

Policy

Policymakers and regulators at various levels (regional, national and supranational) can enable the development of new markets for circular products, and circular enablers such as Circular IQ. Prime examples are the EU's commitment to circular procurement through the Action Plan for a Circular Economy, and – at a national level – the Dutch government's 2016 commitment to increase the proportion of circular procurement by public bodies in the Netherlands to 10% by 2020 (6). The implementation of these policies has been a key contributing factor to Circular IQ's growth, as it has increased the relevance of their offering.

Moreover, working with early adopters has validated Circular IQ's platform and conferred credibility to this young business. In 2017, for example, Circular IQ supported the circular procurement of new furniture for the Dutch Ministry of Infrastructure and Water. Circular IQ's software has been used to-date for procurement budgets with a combined value of over €430 million.

Market Structure

Prior to launching Circular IQ, Vercoulen worked for the Cradle to Cradle Product Innovation Institute, which confers its own well-respected sustainability accreditation. His knowledge of the sector prompted an early insight when setting up Circular IQ: despite the many different certification schemes used by suppliers, up to 80% of the criteria used by these schemes were directly comparable. To make it possible for users to select a set of criteria that works for them, the start-up decided to incorporate and streamline overlapping criteria from some of the leading standards (Cradle to Cradle, Hazardous Substances Data Bank and US EPA, for example) – see Figure 3 for an example of a 'product circularity report'. In addition, Circular IQ works with third parties like Lloyd's Register (7) to independently verify the data that has been provided by suppliers (8).

Circular IQ: Challenges

Information Flows

Circular IQ initially underestimated the difficulty and complexity involved in digitising supply chain data. Having initially outsourced this activity to keep costs down, the lack of digitised information flows in supply chains prompted Circular IQ to bring its software development in-house.

Data security presents another challenge related to ensuring smooth information flows. Working with multinational companies' data, for example, will require a significant ramping up of the level of security provided by Circular IQ's platform. One avenue the start-up is exploring to address this challenge is the incorporation of blockchain technology into its platform to ensure the traceability and certification of every component throughout a supply chain, from manufacturer to end-user (9). While such solutions might require significant investment upfront, it is expected that in the long-term they will increase the value of Circular IQ's offering and generate new business opportunities.

Finance

Attracting finance can prove difficult for innovative circular businesses. Circular IQ has had challenges attracting further investment even after having secured over 40 paying public and private procurement customers from government organisations to corporates like DSM, ABN AMRO, and Accenture, among others (10). In the period 2018-2019 the start-up has been raising pre-seed investment with a target of €600k for this round. However, in terms of maturity, there is a gap between what funders are looking for and what Circular IQ offers. Conversations with venture capital firms have sparked interest but "they wanted us to come back when we had 100 paying customers", says Vercoulen. In an effort to bridge this funding gap, the company has widened its focus to also include informal investors, such as business angels, and had already secured €525k of their original €600k target by the end of 2018.

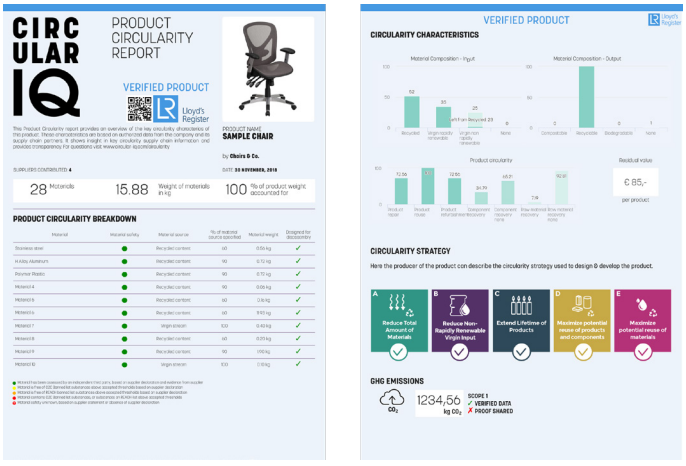

Figure 3: Sample Product Circularity Report, audited by Lloyds register
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Conclusion and lessons learnt

Circular IQ's cloud-based platform is becoming one of the leading platforms for circularity data management, enabling circular procurement. Using the Circular IQ solution, procurement officials can compare offers, using clear and validated information.

This start-up's journey has not been without its challenges; the technical complexity involved in gathering, verifying and standardising circularity data is far greater than their initial business model assumed. Key lessons learnt thus far:

▪ **Policy and regulatory frameworks have a key role to play in creating demand for circular products.** Public sector procurement within Europe has the scale and potential to be a major driver of the transition to a circular economy. Governments play an important role, not only as policymakers, but as early adopters demonstrating best practices and developing guidance for other actors.

▪ **Access to data is key to accelerating the transition to a circular economy.** The circular economy requires smooth information flows among value chain actors – but as Circular IQ's example shows, aggregating and standardising the necessary data from a variety of different sources can pose a sizeable and resource-intensive challenge.

▪ **Circular business models built on data need to invest in cyber-security and data protection.** Scaling business models built on information technology requires a significant increase in skill and investment in order to comply with cyber-security and data-protection requirements.

▪ **Raising capital for innovative circular businesses can be challenging.** . Innovative circular business models are, by definition, unproven at scale, and this can make it difficult to attract investment. Circular IQ, despite starting-off with a sizable customer base, were still faced with challenges trying to access finance. Identifying suitable financial vehicles and investors who understand circular business models is vital.

Improving transparency across global supply chains is a prerequisite for accelerating the transition to a circular economy. Circular IQ represents an innovative circular economy enabler; this platform supports decision-making by facilitating the comparison of circularity performance and is a game-changer for scaling circular procurement.

About

EIT Climate-KIC is Europe's largest public-private partnership addressing climate change through innovation to build a net zero carbon economy. The Climate Innovation Insights are one of the most knowledge sharing prominent formats of EIT Climate-KIC since 2016. Building on innovation endeavours of EIT Climate-KIC start-ups and partner institutions, the Insights are intended to share learnings and provide a platform for reflection and discussion.

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Endnotes:

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