

The Black Box Institute

THE CIRCULAR ECONOMY

Part 1: What Is It and Why a Circular Economy?

October 6, 2021

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What is a Circular Economy?



Definition

“ A circular economy is an industrial system that is restorative or regenerative by intention and design ”

Replaces the end-of-life concept with restoration.

Shifts towards the use of renewable energy.

Eliminates the use of toxic chemicals, which impair reuse and return to the biosphere.

Aims to eliminate waste through the superior design of materials, products, systems, and business models.

Main Principles



Design out waste and pollution

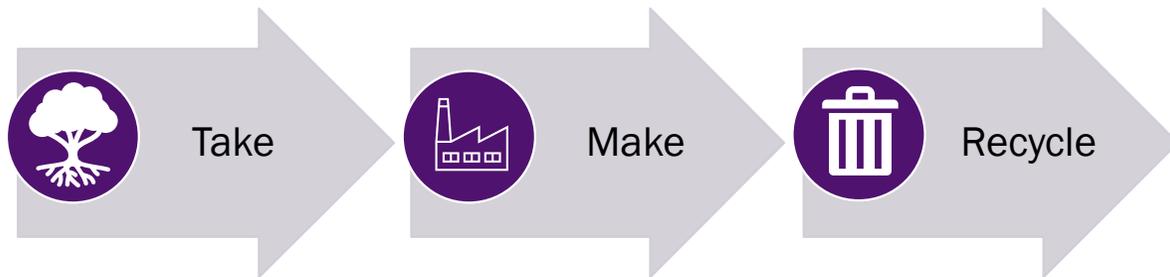


Regenerate natural systems

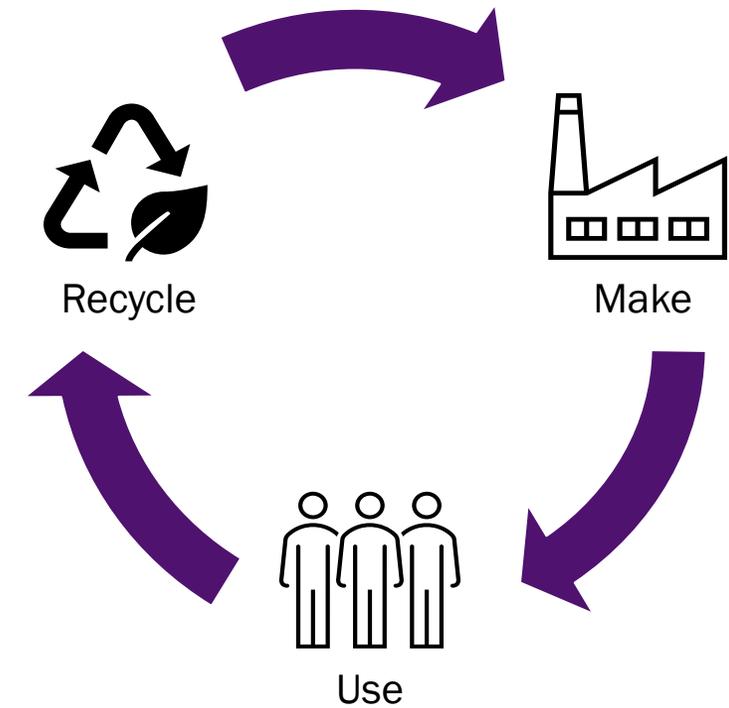


Keep products and materials in use

Linear Model



Circular Model



Circular vs Linear

Key facts:

- **Circular model is more eco-friendly**
 - Efficiency aims to reduce waste
 - Effectivity aims to eliminate waste
- **Circular model is long term**
 - Linear model has 1 life cycle
 - Circular model designs for future cycles
- **Circular model involves consumers**
 - Product-focus promotes single cycle engagement
 - Service-focus retains customer involvement

	LINEAR	CIRCULAR
STEP PLAN	Take-make-dispose	Reduce, reuse, recycle
FOCUS	Eco-efficiency	Eco-effectivity
SYSTEM BOUNDARIES	Short-term, from purchase to sales	Long term, multiple life cycles
REUSE	Downcycling	Upcycling, cascading and high-grade recycling
BUSINESS MODEL	Focuses on products	Focuses on services

Why a Circular Economy?



70%

- The World Bank estimates that by 2050 our **global waste production is predicted to rise by 70%** (3.4 billion tonnes), more than double the population growth over the same period

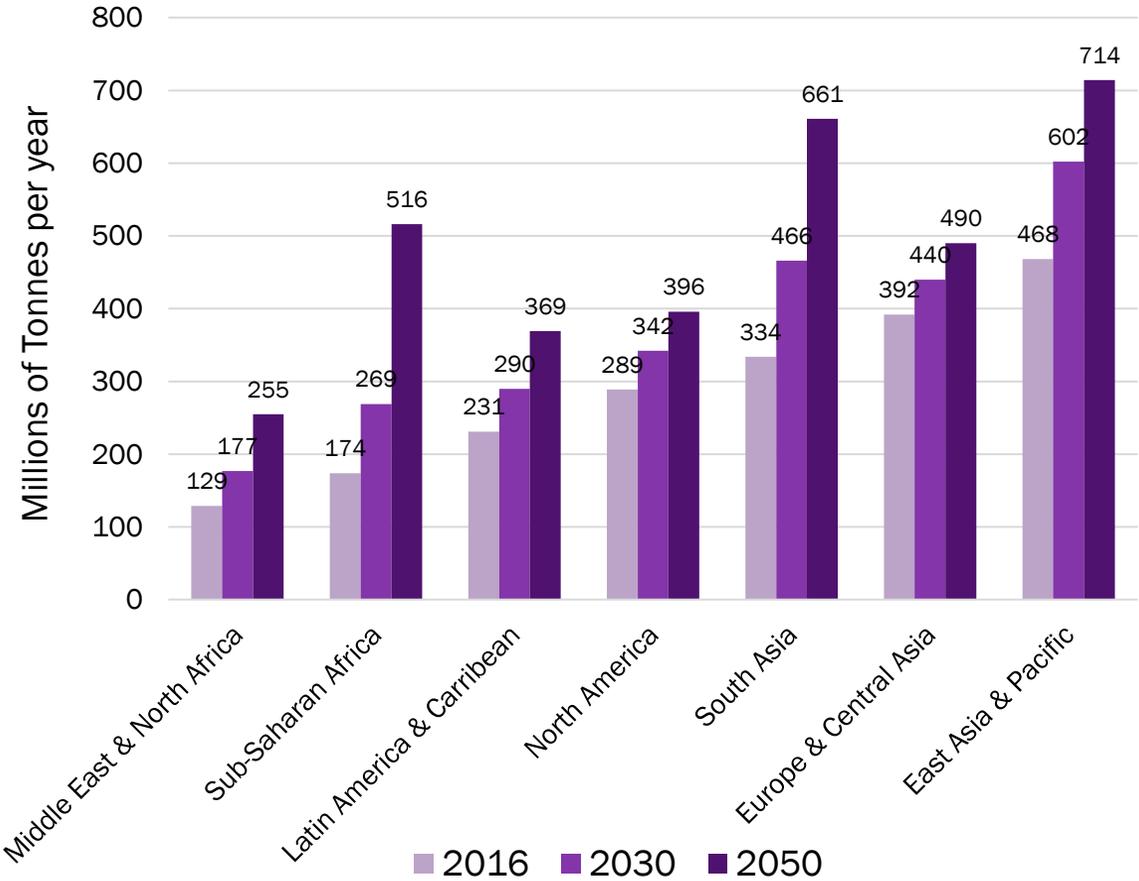
30%

- Canadians produce more garbage per capita than any other country. **Canadians** generate approx. 31 million tonnes of garbage a year, **recycling only 30%** of it

33%

- Humankind currently produces two billion tonnes of waste per year between 7.6 billion people. With approximately **33% of that not managed in an environmentally safe manner**

Product Waste Generation, by region





Satisfy changing customer needs and expectations



Develop new markets and gain new customers



Build loyalty with your customer base



Build your brand and reputation as an innovative organisation



Capture more value from your materials and resources



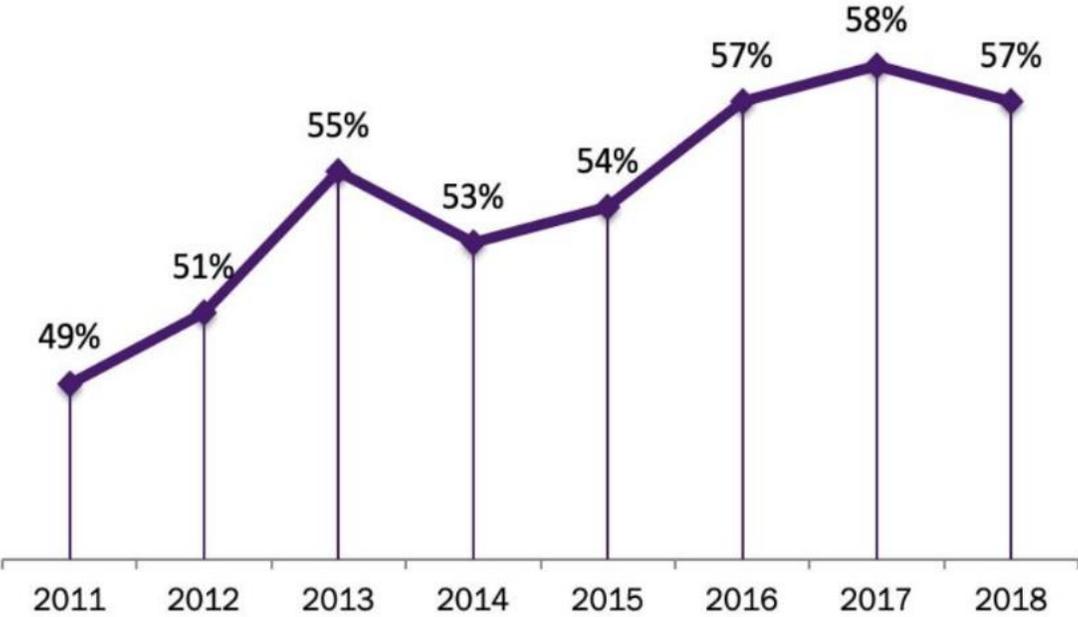
Increase the security and price stability of your supply chain



Provide more return and lower risk to your investors



Exceed government regulations and stay ahead of new requirements



Percentage of global Internet users who say they would pay more for sustainable / eco-friendly products.
Source: Global Web Index.

80%

- A Nielsen survey indicated that over 80% of respondents strongly believed that businesses should play a role in protecting nature

57%

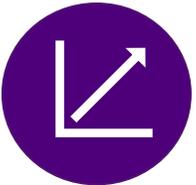
- Statistics indicate an increased consumer awareness of sustainability, adjusting their purchasing habits as a result, with 57% of global internet users suggesting they'd pay more for eco-friendly products

86%

- In 2014, the Tork Green Business Survey showed that 86% of Canadians were actively buying green



A significant reduction of input costs translating into higher revenue growth and margins: according to The Ellen MacArthur Foundation, the circular economy can generate an annual net-materials cost-saving up to USD 630 billion for the durable goods industry in the EU whilst for fast-moving consumer goods, the annual net-materials cost increases to USD 700 billion globally.



Gain competitive advantage that leads to long-term company growth: The World Economic Forum estimates that over the next 15 years, businesses who have incorporated the circular economy framework into their business model would likely gain an increasing competitive advantage as they can extract much more value from each unit of resource.



Become a more resilient company, less susceptible to supply shocks and other economic turmoil: given that the world population continues to grow, the pressure on the demand for finite resources will also continue to increase. This will inevitably lead to higher volatility in resource prices and increase supply chain risks in the future. Transitioning to a circular business model will allow for more efficient use of raw materials which reduces dependency on resource markets and therefore, protecting profits.



Circular economy business models are harder to develop, as most investors are still working under a linear economy logic and sometimes upfront investments are required.



New business models may be challenging to implement and develop because of laws and regulations that aren't prepared for this kind of innovations.



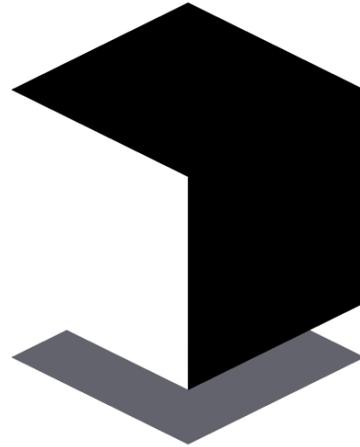
The demand for circular products and alternatives is still small.



Many companies still have goals and appraisal systems that focus on short-term value creation, whereas the circular economy model is a long-term value creation model.



There aren't still many qualified professionals with technical or 'information and communication technology' (ICT) knowledge.



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