

CIRCULAR ECONOMY CASE STUDIES & SNAPSHOTS



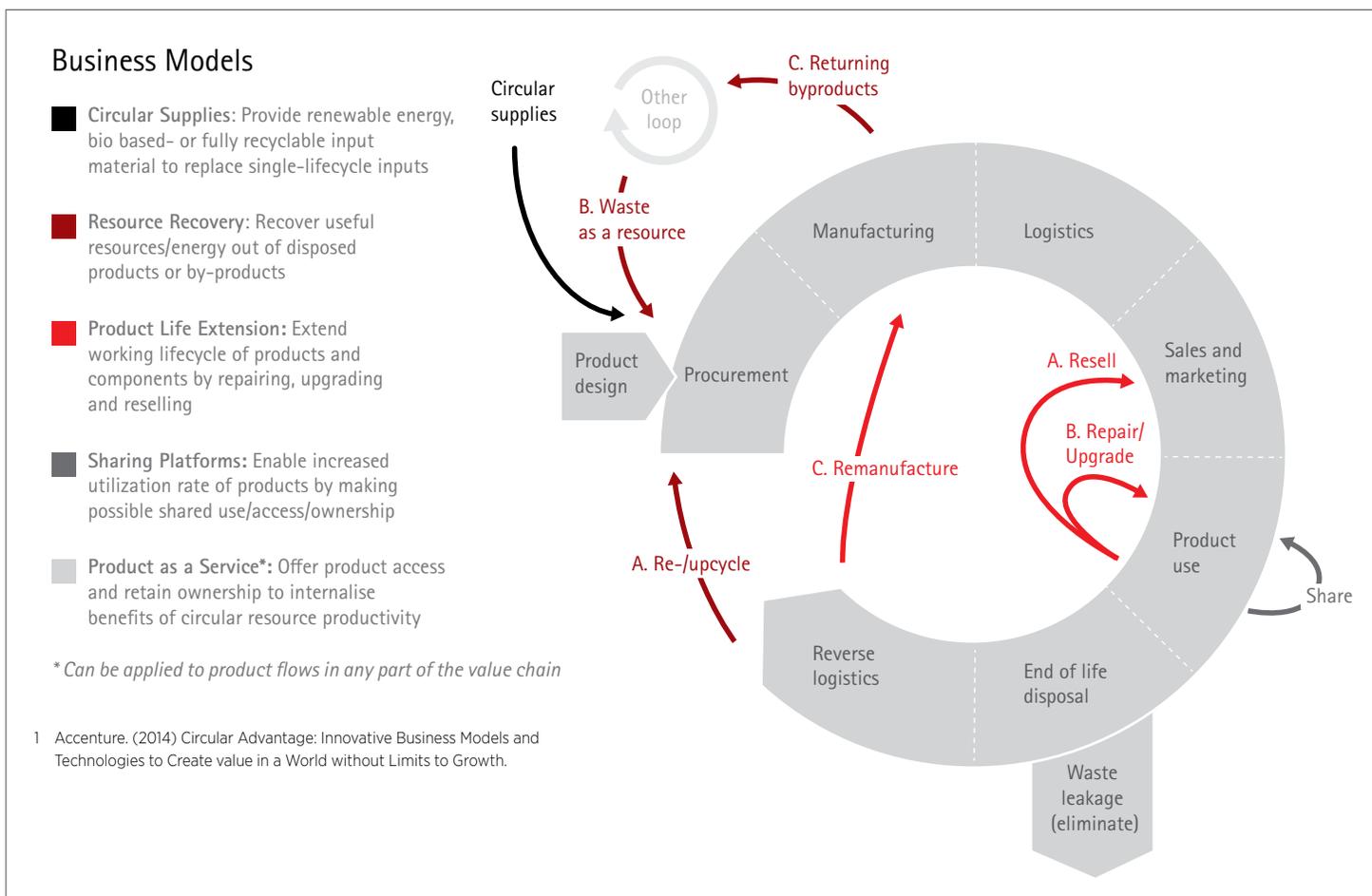
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Canada united in the achievement of zero waste, now and for future generations

INTRODUCTION

The National Zero Waste Council Circular Economy Working Group, in collaboration with the British Columbia Ministry of Environment, commissioned circular economy case studies within a North American context to understand opportunities for scaling circular economy business models in Canada. To showcase a range of business models, they selected the business listed below which provide at least one example of the five circular economy business models identified in the 2014 Accenture report titled *Circular Advantage*. Product-as-a-service is a cornerstone business model for the circular economy; therefore, instead of providing an individual case study, several business snapshots were selected to showcase how product-as-a-service can be a successful business model across all sectors.

CASE STUDIES *	BUSINESS SNAPSHOTS *
■ Enterra Feed Corporation	■ BMW Drive Now
■ Enviro Image Solutions	■ Frogbox
■ Nico Spacecraft	■ Philips
■ Toronto Tool Library	■ Rent frock Repeat



CASE STUDY ANALYSIS

Four circular economy case studies were analyzed for common themes to understand opportunities for innovating and scaling circular economy business models. A number of key themes were identified. They are summarized below.

KEY THEMES

General Characteristics

All case study businesses are past start-up and are moving into growth and scale stages. All are working within established, conventional industries, creating alternative products to existing products. Their diverse business models from social enterprise, to clean technology commercial businesses, to small business, include a combination of business to business (B2) and business to customer (B2C) arrangements.

Social Purpose

All are social value businesses, with corporate purposes to create solutions to societal problems through their core business. They all have an explicit environmental intent alongside commercial objectives.

Social Entrepreneurs

All ventures are led by visionary and broad- and forward-thinking entrepreneurs who possess systems thinking, collaboration and innovation skillsets and mindsets. They can see the big picture and notice paradoxes and disconnects between the good life and how we are living it. They are out of the box thinkers with the courage and inspiration to challenge the status quo, conventional wisdom, existing mindsets and entrenched habits and behaviours.

By looking at large systems from a fresh point of view, they observe problems and inefficiencies with the way manufacturing, production and consumption is currently organized, or our “take, make, waste” approach to life. This enables them to see underutilized assets, cost inefficiencies, systemic malfunctions, long-term negative consequences, externalized costs, constraints and the solutions to be found in nature’s approach to design in order to create new design guidelines and parameters, cost-efficiencies, new customer propositions and value creation opportunities.

Often the initiators had a counter-cultural perspective or insight, from a new generation, a different cultural experience or a different sector (NGO – non-governmental organization) which enabled them to see the system in a fresh way. Equally they were able to harness the insights and resources from different sources and diverse disciplines (engineering, science, public sector, NGOs, etc.).

They can foresee and are impatient to realize the future we want. They are curious, relentless inventors on a mission to both grow their business and realize societal benefits. Some, but not all, have prior sustainability knowledge and literacy which informs their analysis and world-view. They are all driven by the intent to be disruptive, challenge incumbent business models, re-think industrial processes and re-conceptualize systems of production and consumption.

Innovation Cycle

All of the case studies revealed a common researching, experimenting, testing and piloting phase, some over the course of many years and others following a more rapid prototyping model.

It is notable that all case studies showed continuous cycles of innovation as a result of applying an environmental, sustainability and circular economy lens to existing practices. It appears that a sustainability mindset can find multiple ways to create additional customer and marketplace value. By applying a sustainability lens to all stages of production and consumption, up and down the value chain, new opportunities for innovation can be spotted and realized. As well, one single sustainability innovation can be a gateway to many add-on customer benefits and features, whether sustainable or not.

Indeed, it is often the case that the innovation ideas exceed the capacity and resources of the business to accelerate and scale their innovation. They have more opportunities and ideas than they can realistically pursue given the need to maintain business viability.

Customer Reception

These four case studies are all oriented to meeting existing customer needs in new ways, rather than creating new, possibly artificial, customer needs and wants.

All products and services are price competitive, cheaper or cost-saving over the long-term compared to alternatives. Many financial benefits are realized by customers immediately and are a top driver of customer take-up. Notably, it appears that initial customer drivers are quality and price, while the

environmental benefits are secondary but ultimately a very attractive feature. The environmental benefit, however, is a factor in customer loyalty and retention. Once they understand the environmental features, customers value the environmental “story” and often are able to use this to build their own brand or identity.

Typically there is a customer education and trialing period to overcome perception and habitual barriers because customers need to be encouraged to adopt new ways of thinking and action.

Early adopter customers are also important actors in the innovation’s success. Sometimes first customers are even involved in the experimentation process providing useful feedback on how to tailor and adapt the product for improved functionality.

As well, there is a focus on product extensions and value-added benefits once the first product is launched. This serves to increase customer interactions, deepen customer relationships, foster loyalty and build stickiness, not to mention generate new revenue opportunities.

Funding and Technology

Most case study businesses relied on outside capital. In two instances the capital providers (including investors, donors, governments and foundations) were values- and sustainability-aligned funders.

All innovations were advanced through sweat equity contributed by the founders conducting research and trials in the pre-commercial phase.

Most examples harnessed technology to drive their innovation, sometimes using off-the shelf technology (e.g. tool library software, de-packaging machinery) or building their own proprietary technology.

Collaboration

Collaboration is a strong feature of all the case studies. Customers, suppliers, the public sector and investors were mentioned as collaborators and partners to co-create, launch, grow and scale the business. The social purpose of the enterprise and recognized circular economy trend was a frequent factor in attracting and developing partnership opportunities.

Impact

All ventures are focused on scaling and extending their reach, influence and impact, often by expanding the market opportunity. Many have or are executing plans to expand in North America and internationally. They all believe (some backed up by projections) that by expanding they are multiplying their sustainability benefits correspondingly.

While all are generating important sustainability impacts, they do not have a comprehensive approach to measuring their environmental or social benefits. “Tonnes of waste diverted” is a common metric, but greenhouse gas emission reductions or other environmental benefits are under reported.

Even though their environmental benefits are not thoroughly quantified, all of the organizations are focused on limiting or reducing the overall negative environmental impacts of their operations.

With regards to social sustainability, all demonstrate modest job creation potential (2–32 employees) including both entry and professional level positions. However, most ventures are in early growth stages so the job creation impacts could become significant over time.

Waste

While the case studies were chosen to be representative of the Accenture five Circular Economy Business Models¹, they all demonstrated holistic waste prevention and diversion practices over and above the particular Accenture business model. They were all taking deliberate measures to close the waste loop on their enterprises, upcycling and repurposing their wastes, extending the life of product inputs, recovering energy from by-products, and practicing resource recovery. Some of these efforts reduce their operating costs and create new revenues and product lines.

All rely on and use the local recycling system to divert waste by-products. This often involves considerable research to understand or build the local recycling infrastructure or network. They are all engaged in designing and creating the waste infrastructure necessary to support their zero waste, circular economy and waste prevention and diversion objectives, which for them has become a cost of doing business. However, this is largely a one-time expense, and becomes a proprietary and replicable feature of their business.

¹ Accenture. (2014) Circular Advantage: Innovative Business Models and Technologies to Create value in a World without Limits to Growth.

Business Benefits

In addition to the main business benefits of products and service innovation, revenue generation and customer acquisition, the following business benefits of their circular economy models were revealed by the case study businesses:

- **Employee attraction and retention** – Employees seek out and value the opportunity to work for a solutions-oriented business
- **Brand and reputation** – Circular economy businesses generate media attention and industry awards enhancing their credibility and improving public recognition, as a form of earned media

- **Partnership opportunities** – Circular economy businesses attract partners and collaborators who are excited about the new economy and wish to support it
- **Government support** – Some jurisdictions eagerly provide assistance to pioneering social purpose business and seek to create an enabling environment to accelerate the circular economy

Other business benefits from circular economy business models, such as cost savings, security of supply, access to resource inputs, and price stability and predictability, appear to be realized by others in the supply chain, rather than these four case study businesses.



Developed by the National Zero Waste Council in collaboration with the Ministry of Environment.

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