

Introduction to International Innovation

Assessment A

A Sustainable Innovation & Circular Economy Strategy

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Scenario – CMSW (Cymru Manufacturing Solutions Wales) is a business which has a large domestic client base spanning many industry sectors such as automotive, aerospace, and medical device development. Their manufacture capabilities allows them to manufacture using a wide range of material types; polymers, metals, fabrics and composites into a variety of products and subcomponent parts. Their expertise and knowledge in the design and manufacture of innovative products is well recognised by both its customers and competitors, the company has cultured, developed and maintained a strong brand.

Presently at a strategic level, CMSW is considering how to ensure and secure the company's future, whilst at the same time maintaining its commitment to environmental consideration with its intentions of moving away from a linear to a more circular economy-based operation.

As the company's lead Product Development Manager (and a 'champion' of innovation across all the company's activities) you've been assigned by the board of directors to undertake a brief global reflective review of innovative undertakings and activities carried out by companies, organisations, government support agencies, academic institutions and community-based initiatives.

Task Outline - Making discerning and selective use of international literature and other media channels e.g., academic journals, television and newspaper accounts, global business, and sector specific trade magazines articles etc. You are tasked to investigate and prepare a presentation on the following, with a specific focus on the significance of how the innovation is managed, from concept to delivery.

Consideration should be made to:

1. How the cultural and political attitudes differ from country to country, or possibly global regions
2. Identifying how these factors both hinder and benefit new environmentally innovative efforts.
3. Identify common factors that new businesses face in today's world, and how they can seek to overcome these difficulties.
4. Investigate the issues that some businesses have previously faced to establish themselves internationally, consider why their levels of success varied from country to country or region to region.

Circular Economy at a Global Scale

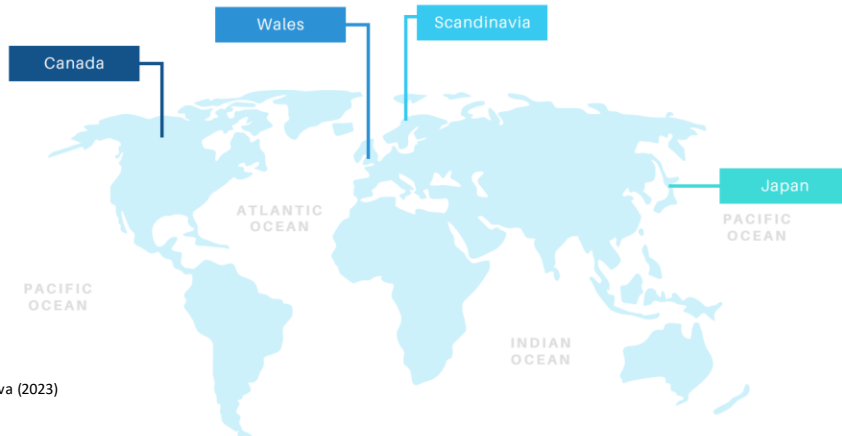


Figure 1 – Canva (2023)

Political attitudes to circular economy in Wales

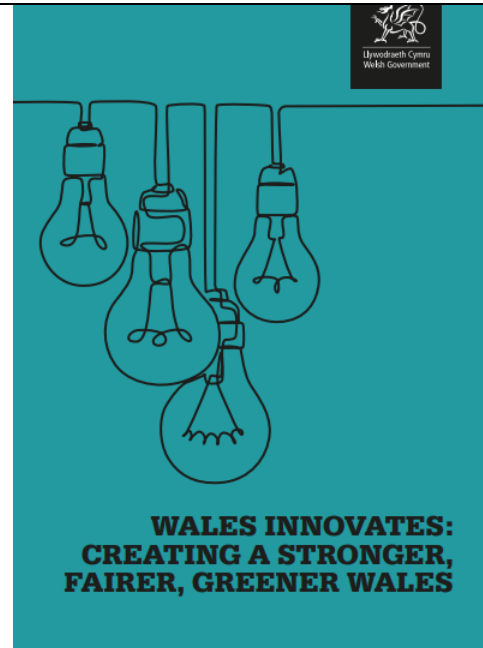
- Wales unveiled its first circular economy strategy in March 2021 - 'Beyond Recycling' strategy – a Strategy to make the circular economy in Wales a reality.
- By 2030, Wales "wants there to be a 33% reduction in waste and a 60% reduction in avoidable food waste. And it wants there to be 'one planet resource use', a 62% reduction in the waste, zero waste, and net zero carbon by 2050' (Langley, 2021).
- 'We recycle 67% of our industrial and commercial waste and 87% of our construction and demolition waste. From the circular business model and innovative hydrogen powered cars at Riversimple, to office furnishings made from difficult to recycle plastics at Smile Plastics, and damp-proof membrane made from recycled material at Capital Valley Plastics, we are a country finding new ways to innovate and keep resources in use'. (Beyond Recycling, 2021)



Figure 2 – Welsh Government (2023)

- Public and 3rd sector organisations in Wales can benefit from taking part in the Circular Economy Innovation Communities (CEIC) programme which is fully funded for participating bodies. The programme 'is designed to give your organisations the most practical, straightforward and effective way to implement sustainable change for the future and achieve your social, economic and environmental goals'. (CEIC, 2021). However, funding for this programme is currently due at the end of 2023.
- In Wales, they also recently launched the next innovation strategy – 'Creating a stronger, fairer, greener Wales'. The strategy believes that 'moving to a circular economy is one of the great innovation opportunities of our time'. (Welsh Government, 2023)
- The Well-being of Future Generations (Wales) Act is about improving the social, economic, environmental and cultural well-being of Wales. The public bodies listed in the act must think more about the long-term, work better with people and communities and each other, to prevent problems and take a more joined-up approach. This will help us to create a Wales that we all want to live in, now and in the future.

Figure 3 – Welsh Government (2023)



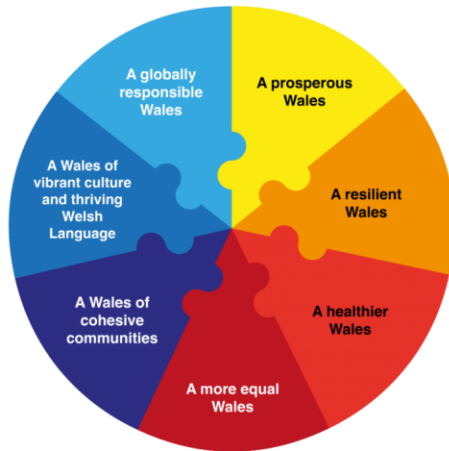


Figure 4 – Welsh Government (2023)

- The Wellbeing of Future Generations (Wales) Act is based around 7 goals.
- 3 of these goals are specifically relevant to the strive for a circular economy.
- **A prosperous Wales** - 'An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately'.
- **A resilient Wales** - 'A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change'
- **A globally responsible Wales** - A nation which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.
- Source: [The Well-being of Future Generations | GOV.WALES](https://gov.wales)

The circular economy in Wales

- 'A study into the benefits of the circular economy and how to unlock them in Wales by the Ellen MacArthur Foundation and commissioned by the Waste and Resources Action Programme (WRAP) on behalf of the Welsh Government, identified that the circular economy could deliver 'manifold' benefits for Wales, including the potential for job creation, a positive economic climate and cost savings throughout industry. It highlights that under specific conditions, the saving could be as much as £2 billion a year in material costs alone – although this would be throughout the whole supply chain, including those parts which are outside Wales'. (Mayne, 2021)
- The Welsh Government are making several key political decisions as they strive to be 'globally responsible'.
- 'Wales is to set up a state-owned renewable energy company to tackle energy insecurity, the cost-of-living crisis and the climate emergency' (Weatherby, 2022)
- In the last few weeks, major road projects in Wales have been scrapped over environmental concerns.

Cultural attitudes to circular economy in Wales

- 'Wales is transitioning to becoming a high recycling nation, where the general public see segregating household waste (metals, paper, glass, food waste, absorbent hygiene products and so on) as the norm, enabling local authorities to collectively achieve a 63% recycling figure'. (Natural Resources Wales, 2020)
- If the people of Wales see recycling as a norm, they are much more likely to engage with further recycling, and circular economy, projects in the future.
- A major barrier to achieving the sustainable management of resources is human behaviour. 'Movement away from the current consumerist, resource intensive, linear economy is required. Instead, Welsh society must consume and use less, and keep items for long-term use. This will require changes to the way our society purchases goods and services, to include leasing and hiring rather than owning products like white goods, cars and so on. Society has become used to many of the items that are convenient and save time, such as disposal nappies'. (Natural Resources Wales, 2020)
- As Lesley Griffiths, minister for environment, energy and rural affairs when the Wales Circular Economy Strategy was launched, "Every child leaving school now will have only ever known a Wales which recycles – it is now a part of our culture and that gives us a solid foundation for accelerated action." (Langley, 2021)

Wales – Good Practice

- **Batri** - Specialises in battery technology and energy storage solutions. Using its sodium-ion battery technology it's enhanced lithium-ion battery processing capabilities, and portfolio of IP built up over 10 years of research, Batri is helping companies and consumers move towards a carbon-neutral future and is revolutionising the battery storage market.
- **Celsa** - Celsa, based in Cardiff, buys scrap metal which they melt in their furnace to produce steel billet, from which their finished products are made. The steel they produce consists of 98% locally sourced recycled scrap metal and 2% ferro-alloys and minerals.
- **Riversimple** - Riversimple aim to provide affordable, hydrogen cars made in Llandrinodd Wells, Mid Wales. However, they will not be selling the cars. Customers can subscribe to the cars, monthly, with one payment covering everything, including insurance and fuel.



Figure 5 –DST Innovations, 2023



Figure 6 - (Group, 2023)



Figure 7- (riversimple, 2023)

Other examples of projects in Wales include:

Repair Café Wales – The Repair Cafe in Cardiff supports waste reduction skill-sharing and community cohesion, fixing items which normally would be thrown away. Ran by volunteers, since 2017, over 400 items have been repaired, including bikes, electricals and clothes.

Bombora Wave Energy – With its European operation in Pembrokeshire, Bombora Wave Energy use the power of waves to create energy.

How do these factors impact new innovative efforts?

- In Wales, recycling is becoming the 'norm' with Wales being the number 3 recycler in the country. This consumer engagement is something which should be maximised to develop the circular economy movement in Wales.
- However, a February 2023 report by Innovation Caucus identified that the circular economy 'is a misunderstood term: it should be defined as the movement from linear to circular economy but is often applied reductively to narrow activities such as recycling'. (Clifton et al, 2023).
- There is currently a possible skills gap when it comes to net zero in Wales. Just 17% of respondents to a recent Regional Learning & Skills Partnership (South-West Wales) survey stated they will be looking to recruit job roles aligned to the Net Zero agenda. However renewable energy skills was the highest skill listed when asked what will be required in the future. There is clearly a disconnect between what is happening now, and what is required in the future. If the people of Wales don't have the necessary skills, it will have a negative impact on the country's ability to deliver the circular economy agenda.
- However, there are some whose views are that some Welsh Governments 'climate' policies will have a negative impact on the Welsh economy. The potential negative impact of the policy regarding road building was debated on a recent episode of Newsnight on BBC1.



Figure 8 -(Government, 2023)

Canada's Political Attitude towards Circular Economy

- They see the circular economy as a different way of doing business.
- They know the current way in which their economies extract, use, then dispose of resources is putting pressure on our natural systems, communities, and public health. This is a linear economy—it moves in a straight line from resource extraction to waste disposal.
- They state that nothing is waste, and the circular economy retains and recovers as much value as possible from resources by reusing, repairing, refurbishing, remanufacturing, repurposing, or recycling products and materials.

It's about using valuable resources wisely, thinking about waste as a resource instead of a cost, and finding innovative ways to better the environment and the economy.

(Government, 2023)

The Canadian government is actively working on the circular economy, not only for the Canadians themselves but how this will impact businesses.

They believe the circular economy is a new way of doing business by re-training companies to move away from the current linear economy, resource extraction to waste disposal to circular where nothing is waste.

They state that :

It's about using valuable resources wisely, thinking about waste as a resource instead of a cost, and finding different ways to better the environment and the economy.

The Government reports:

If they improve how they manage plastic waste through the circular economy by 2030, they will:

**Reduce 1.8 million tonnes of
carbon pollution**

**Generate Billions of dollars in
revenue**

Create Approximately 42,000 jobs

It also reports that they have 4 key drivers they are working to:

- 1. INVESTMENT** - Capital flows spur innovation and growth to advance the transition to circularity
- 2. INNOVATION** - New materials, technologies and delivery models support and enhance circular systems
- 3. POLICY** - Legalisations ensure circularity, inclusivity and resiliency across cities and states
- 4. PARTNERSHIP** - Collaboration align interest across multiple stakeholders and create system wide change

(Government, 2023)

Political attitudes Continued:

- The government of Canada has taken a global leadership role in tackling waste, including the launch of Ocean Plastics in 2018 and launched a Canadian-wide strategy action plan on zero plastic waste. Canada also co-hosted The World Circular Economy Forum in September 2021. The government is also proactively looking to bring forward the Right to Repair legislation to extend the life of certain electrical goods.
- On the Canadian government website it states the Canadians are already thinking about the world they now want to live in post pandemic, they want to secure jobs and careers that will not just last for tomorrow but in 2030 / 2040 and beyond.
- They write a cleaner and more competitive Canada is within reach, the Canadians themselves have the know-how, the skills and the technology and the will, but Canada needs to accelerate climate action now. The government aims to serve the communities by working through five pillars:
- Making the places Canadians live and gather more affordable by Cutting Waste Energy
- Making Clean, affordable transportation and power available in every community
- Continue to ensure pollution isn't free and households get more money back
- Building Canada's clean industrial advantage
- Embracing the power of nature to support healthier families and more resilient communities.

(Government, 2023)

1. The government website states:
 - They have taken a global leadership role in tackling waste.
 - They went on to host for the 2nd year in a row the World Circular Economy Forum -2021 (which is also referred to on a further slide)
 - They say Canadians are thinking about the world they live in compared to world they want to live in, not only for tomorrow but for the years to come ...
 - They write about a cleaner and more competitive Canada, making places more affordable by cutting waste energy
 - Making Clean, affordable transportation and power available in every community.

The website goes on to say that Canadian businesses are seizing circular economy opportunities to:

Design
products for
longer life

Use recycled
material

Recover &
refurbish used
products

Repurpose and
sell waste
materials

From coast to coast, they are seeing new technologies and innovative ideas that:

Increase
resource
productivity

Create New
Jobs

Make Supply
chains greener

Use clean
technology to build
a sustainable and
competitive
Canadian Economy

(Government, 2023)

Cultural Attitudes to circular economy in Canada

A survey carried out in 2022 by Capterra has shown the following results in cultural attitudes:

Note: Results are based on over 1000 people surveyed

- 87% acknowledged that their behaviour has a direct impact on the environment. This survey was mirrored by the same 87% reportedly also favouring buying products from companies with active circular economy measures in place.
- 63% buy second hand products
- 79% sold their used items at least once.
- 79% separate their recycling from normal waste
- 78% use recycling grocery bags

(Capterra, 2022)

Canada - Key Points

- The innovation ecosystem is well advanced, with plenty of access of funding and financing to take designs from concept to scale
- Universities and applied research centres are world leading in areas such as materials innovation, AI, digital platforms and more
- Canada houses some of the world's largest and most innovative technology companies and are well placed to help resolve any obstacles on the uptake of circular business models through digitalisation.
- In addition to the above, there are also many small-scale disruptors and innovators actively advancing technologies and new business models in areas such as circular supply chains, product life extension and sharing platforms

How is Canada moving forward with the Circular Economy and what initiatives do they have in place?

- Examples below of some of the initiatives:

2009



Figure 9 - (CCME, 2023)

2013



Figure 10 - (Waste, 2023)

2016



Figure 11 - (Step, 2023)

2020



Figure 12 - (Ecopreneureu, 2023)

CCME

In **2009** – The Canadian Council for Ministers of the Environment (CCME) originally formed in 1964 but re-established in 2009. The council is made up of 14 ministers that meet annually to discuss national environmental priorities and determine the work to be carried out to achieve this priorities.

In **2013** -The National Zero Waste Council was founded, bringing together governments, businesses, and non-government organisations to advance waste prevention in Canada.

The Natural Step

In **2016** - The Natural Step is a national charity with over 25 years experience of advancing science, innovation and strategic leadership aimed at fostering a strong and inclusive economy that thrives within nature's limits.

WCEF Side Event

In **2020** Canada co-hosted the WCEF (world circular economy event) Side Event, this event focused on the opportunities, issues and challenges associated with advancing North Americans circular transition. This was organised in partnership with the

Circular Economy Leadership Coalition, The Ellen Macarthur foundation and MIT Solve.

Canada- Regional Circular Economy

Ontario

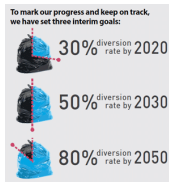


Figure 13 -
(Ontario.ca, 2023)

Ontario's Government reported in 2014 that 11.5 million tonnes of waste were generated in the province. That's nearly a tonne of waste per person per year. (Murray, 2017)

In the years following this report, Ontario became the first jurisdiction to enact a comprehensive circular economy law, RRCEA – Resource Recovery and Circular Economy Act, 2016, a declaration that there is value in protecting the natural environment through innovative waste disposal and reduction methods. (Law, 2016)

Ontario Government reported in 2014 that 11.5 million tonnes of waste were generated. That's nearly a tonne of waste of per person per year!
In the years following this report, the government of Ontario became the first jurisdiction to enact a comprehensive circular economy law – the Resource Recovery and Circular Act 2016.

- In 2021 Ontario then went onto launch the Circular Opportunity Innovation Launchpad (COIL), a new circular business accelerator.
- This incentive is focused on growing 49 businesses in 2024 through circular economy training and mentorship. This is in addition to the 50 companies that are already existing on this project.
- Businesses can receive up to \$30,000 in grants and finance to support business operations
- A further contribution can also be made of up to \$10,000 for additional resources for example staff time.

(Vitello, 2021)



Figure 14 -
(Toronto, 2023)

The City of Toronto is working on the basis of instead of taking from the planet, their approach will allow the community and businesses to be part of the planet. A circular society that connects people, creates jobs and respects the planet.

(Toronto, 2023)

1. Toronto's circular economy framework is positioned to become a major tool in creating economic growth for the city.
 2. The annual purchasing contracts amount to approx. CAD 2 billion in value which represents considerable potential for suppliers who have long-standing circular economy offerings or who are beginning to integrate this into their current business models.
 3. Toronto's government are looking to offer circular economy training that helps businesses recognise the opportunities for their businesses.
- (Foundation, 2023)

Canada – Good Practice



Figure 15 -
(Canada, 2023)



Figure 16 -
(Celestica, 2023)



Figure 17
(Lafarge, 2023)



Figure 18 - (Foods, 2023)

- Ikea Canada announced a partnership with Setsune, a Toronto based social enterprise who make textiles entirely from salvaged materials that have been upcycled. Ikea also aims by 2030 to be a circular business built on clean, renewable energy and regenerative resources, decoupling material use from growth.
- Celestica, a multinational electronics manufacturing service company has achieved 100% waste diversion
- Lafarge is Canada's largest provider of sustainable construction materials. Their mission is to provide construction solutions for better cities and communities.
- Save on food is a major retailer in Canada with decades long-commitment to addressing climate change. Their goals include 1) eliminating food waste by 2022 2) growing contributions to the circular economy 3) building stronger climate change response systems (Leaders, 2023)

1. Ikea – have teamed up with a social enterprise company that makes textiles from salvaged, upcycled materials. They are also aiming to be a circular business by 2030
2. Celestica - an electronics manufacturing company has already achieved 100% waste diversion
3. Lafarge – Canada's largest provider of sustainable construction materials. Their mission is to provide construction solutions for better cities and communities
4. Save on Foods – A major retailer in Canada are already established as a long committed company addressing climate change.

How do these factors impact new innovative efforts?

Canada - General

- The Government are actively working with the Canadians themselves on how they want their future to look, not only in their communities but how that reflects on the businesses around them and the security this could hold for long term employment. This should portray a good grounding for future innovations
- Another great benefit is that 87% of the survey conducted shows the communities understanding of their behaviour having a direct impact on the environment. However, it has been reported in a case study that the current recycling structure is not adequate and equipped enough to meet the full needs of circular economy. (Anthony, 2022) so no matter how much the communities are for this new way of living the government need to act faster on having a more enhanced infrastructure in place.

1. With the government actively working with the Canadians themselves on how they want their future to look, not only in the communities but within the business sector too, this should be a good grounding for future innovations in Canada
2. This is backed up with the figures shown earlier, in that 87% of the survey understand how their actions directly impact the environment
3. However, it has been reported that whilst the government is actively working with the Canadians, the infrastructure of the current recycling system is not adequate enough to meet the full circular economy needs.
4. So, no matter how much the people of Canada want to directly contribute to this, the government need to act faster with a more enhanced recycling system.

Japan - Circular Economy

Driven by high population and lack of landfill due to rocky mountains, Japan started changing to circular economy in 1870, but only produced result since the government started introducing laws in 1991.

Fundamental and Enabling Laws	Year
Resource efficient law	1991
Environmental law	1993
The law of separate collection and recycling of container and packaging	1995
Vehicle recycling law	2002
Recycling based society law	2002
Revision of waste management act	2010
Small home appliance recycling act	2013

Figure 19 -
(Olabode 2019, p27)

- In 2007, 98% of Japan's metals were recycled and just 5% of its waste were landfilled
- Enforced consumer responsibility for returning electrical equipment resulted in a recovery of about 74%-89% of the materials
- Effective collaboration between consumers and manufacturers

(Olabode 2019, p27)

Japan - Circular Economy

Below are important steps taken by the Japanese government to ensure circularity;

- Creation of educational courses on awareness of environmental issues in schools, companies, and communities, which is the foundation for CE development.
- Provision of recycling laboratories in schools.
- Provision of enterprises' circular trading markets.
- Provision of incentives, enhancing public collaboration, and creating customer-friendly collection of old appliances.
- Provision of waste recycling station

These initiatives have given Japan a firm foundation for Circular Economy!

(Olabode 2019, p27)

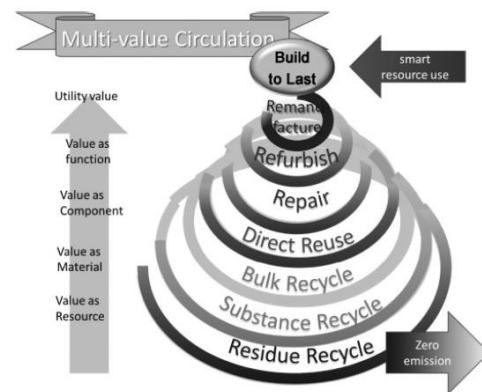
Cultural attitudes to circular economy in Japan

Launched in June 2018, there is a forum created in Japan for circular economy called 'The Forum of Global Multi-Value Circulation'. Companies that are involved with manufacturing, supply and distribution, along with universities, join to discuss the concept of circular economy.

Items discussed include;

- Technical base of material recycle of plastics
- Circular Economy of our company
- Global trend of Circular Economy
- Technological development for remanufacturing

(Kohmei, 2020, p867-868)



Pictorial concept of Multi Value Concept

Figure20 -(Kohmei, 2020, p867-868)

Japan Case Studies – What are other companies doing for the Circular Economy

➤ Enhanced use of recycled resin

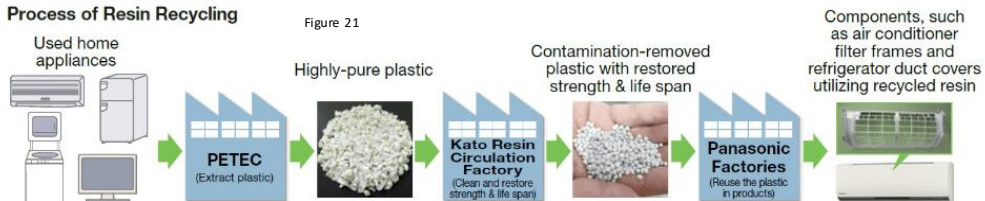
Company: Panasonic Corporation

(J4CE 2021)

- Panasonic Eco Technology Center Co (PETEC) and Kato Plastic Recycling Factory (KPRF) of the Appliances Company work together to efficiently utilize resin recovered from used home appliances, in addition to metals such as iron, copper and aluminum.
- Using near-infrared technology, PETEC can separate the materials received back from consumers to the 3 main types of polymers; Polypropylene (PP), Acrylonitrile butadiene styrene (ABS), Polystyrene (PS)
- These single resins are then transferred to KPRF to be further purified to processed to recover their chemical properties.
- Resin typically loses life over time, therefore the development within KPRF to recover their chemical properties demonstrates good practice for the circular economy where material can be re used in products

Process of Resin Recycling

Figure 21



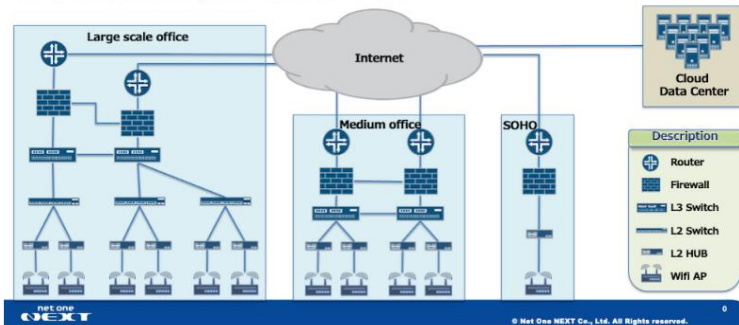
Japan Case Studies – What are other companies doing for Circular Economy

➤ Network as a service

Company: NetOneNEXT

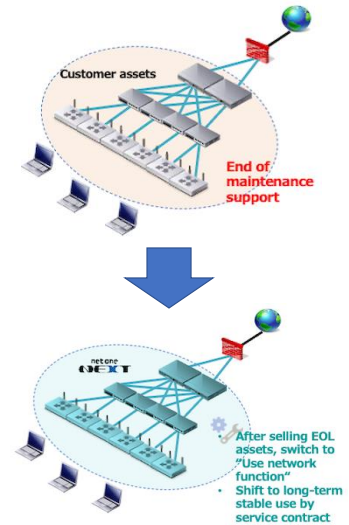
Office LAN has already been standardized

With the maturation of network technology and the shift to cloud services, office LAN has already been simplified and standardized.



(JACE 2021)

Figures 22-24



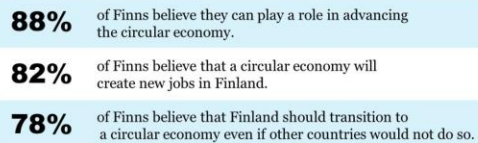
Political attitudes to circular economy in Scandinavia

- **Sweden** - 'Sweden is aiming to become the world's first fossil-free welfare state. To get there, the country has developed a National Strategy for the transition to a circular economy. It addresses 4 focus areas: Sustainable production and product design, sustainable consumption and use of materials, products and services, non-toxic circular circuits, innovation and business'. (Simenstad, L, 2020)
- **Norway** - In March 2020, the Norwegian Prime Minister Erna Solberg declared that *"Norway shall be a pioneer in the development of a green circular economy that utilizes resources better and establish a national strategy for circular economy."* (Simenstad, L, 2020)
- **Denmark** – The Danish Government's 'Strategy for a Circular Economy' 'paints a beautiful picture of an ideal world' (Simenstad, L, 2020). 'The Danish government has pointed out where the development should start: Business and industry will be the primary driving forces. The public sector shall create the framework for the private sector. This is where the municipalities enter the picture once again'. (Simenstad, L, 2020). '

Cultural attitudes to circular economy in Scandinavia

- David Silberstein, from central Stockholm:
- 'A big part of it is thinking about what kind of environment our daughter is going to have in the future. I am a kid of the 1990s and not recycling is kind of abnormal for us, but for Charlie's generation it will hopefully go even further.' (Sweden, 2022)
- In Finland, education plays a huge role. 'Circular economy education starts in day care, where children think about reducing food waste and learn how to sort waste correctly. It continues through primary and secondary school all the way to higher education as it becomes embedded in an individual's way of living'. (Järvinen, 2021).

What do Finns think about the circular economy?



Source: Circular economy citizen survey, Finnish Innovation Fund Sitra, 2021.

Figure 25 - (Forum, 2023)

Scandinavia – Good Practice

- **Agito Medical** - 'Europe's largest provider of preowned medical equipment. The company specialises in purchasing, refurbishing, remarketing and reselling used medical equipment (for example MRI, CT and ultrasound systems, X-rays etc.)'. 'This circular business model secures an extended lifespan of the equipment through re-using what would otherwise be discarded. In particular, the refurbished equipment is an affordable alternative to new equipment for less privileged countries' (Kjørboe et al, 2015)
- **Volvo** - 'Volvo is also joining forces with Sweden's Northvolt AB to create a factory in Gothenburg that will soon be able to supply batteries for 500,000 electric vehicles a year. It is trying to cut its reliance on Chinese components. "Just-in-time manufacturing in the East and shipping to the West is over," Rowan says'. (Arlidge, 2023)



Figure 26 - (Medical, 2023)



Figure 27 - (Volvo, 2023)

How do these factors impact new innovative efforts?

- In Scandinavia, a huge emphasis is placed on education, embedding the benefits of a circular economy at a young age. The future's 'bright', but what about the present?
- In Scandinavia, a big emphasis is placed on incentivisation.
- 'The towns of Gjøvik in Norway and Kalmar in Sweden are using BetterPoints' unique blend of behaviour change incentivisation and gamification to motivate local people to travel more actively and sustainably and help improve air quality' (Grimes, 2020). 'Participants are rewarded in ways that are meaningful to their situation, and local retailers and business can offer and redeem rewards through the app seamlessly, using bar code scanning and our innovative *Tap&Clear* technology'. (Grimes, 2020)
- In 2019, 97% of all plastic bottles in Norway were recycled. How? 'The nation has given recycling a value it didn't once have. Today, it's often cheaper to create new plastic than it is to recycle old plastic, so without a financial incentive, why would companies and consumers bother to do the right thing for the environment? The answer is, of course, money. Norway's model is based on a loan scheme, which means when a consumer buys a plastic bottle, they are charged a small additional fee equivalent to about 13 to 30 US cents. This fee can then be redeemed in a number of ways'. (Cassella, 2019)

European Union

- 'To tackle climate change, the European Parliament adopted the European Climate Law, which raises the EU's 2030 emissions reduction target to at least 55% from 40% and makes climate neutrality by 2050 legally binding. The Climate Law is part of the European Green Deal, the EU's roadmap towards climate neutrality'. (Society, 2023)
- In March 2022, the EU 'proposed the first package of measures to speed up transition towards a circular economy'. 'The proposals include boosting sustainable products, empowering consumers for the green transition, the review of the construction product regulation, as well as a strategy on sustainable textiles. (Society, 2023)
- Longitude, part of the Financial Times Group, surveyed 15,000 customers in 11 countries across Europe, Asia-Pacific and North America in 2019 to find out consumer attitudes towards the circular economy:
 - '59% are influenced by a product's environmental impact when they decide what to buy' (Field, 2020)
 - '83% of consumers believe their behaviors and purchasing choice can have a positive impact on addressing global environmental challenges' (Field, 2020)
 - However, it wasn't all good news. 'The research shows that most of them are perfectly willing to take the necessary steps, as long as they're convenient. For example, 41% think renting clothes would require a lot more effort and 36% say time is a barrier to repairing devices'. (Field, 2020)

I will now talk about 3 international organisations who will have a huge impact on the move towards a circular economy

Denmark, Finland and Sweden are part of the European Union (EU). Iceland and Norway are part of the European Economic Area (EEA), which means that they are part of the EU's single market.

The Green Deal is the EU's answer to the ongoing climate crisis and is a roadmap for Europe becoming climate-neutral by 2050.

United Nations Sustainable Development Goals



Figure 28 - (BITC.IE, 2023)

- The United Nations is an international organisation founded in 1945 and is currently made up of 193 member states. The United Nations is, according to their website, the one place on Earth where all the world's nations can gather together, discuss common problems, and find shared solutions that benefit all of humanity.
- The linear economy has led to the development the UN Sustainable Development Goals, '17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests'. [THE 17 GOALS | Sustainable Development \(un.org\)](https://un.org/sustainabledevelopment)

Ellen MacArthur Foundation

- 'We're a charity committed to creating a circular economy, which is designed to eliminate waste and pollution, circulate products and materials (at their highest value), and regenerate nature. (Ellen MacArthur Foundation, 2023)
- They create evidence-based original research on the benefits of a circular economy, and how it can contribute to solving global challenges like climate change and biodiversity loss. We explore the opportunities across stakeholders and sectors, and highlight examples of how circular economy principles are being put into practice today'. (Ellen MacArthur Foundation, 2023)
- They also offer formal learning courses (the CEIC programme ran in Wales) uses several of the foundation's principles and resources.
- Over the years, the foundation have been able to convene the world's leading circular economy network, including GUCCI, IKEA, Coca Cola, VISA, Google and IDEO (amongst many other partners).

Figure 29 – Ellen MacArthur Foundation (2023)



A huge 'stakeholder' within the movement towards a circular economy is the Ellen MacArthur Foundation.

- The fact that they are a charity, and have a wide variety of stakeholders, means they can engage with all 'actors' in the system – government, big business, innovators, academics, regions and cities.
- The foundation concentrates on 7 areas (all linked to their impact on the circular economy); Biodiversity, cities, climate, fashion, finance, food and plastics.

Summary of Findings

There are several recurring themes from the research across the various countries and organisations we have looked at:

- All countries we looked at, and most countries worldwide, will have some form of government or associated body policy in place relating to striving to be 'globally responsible'. However, there are differing levels of policy, and engagement in the movement in different countries. There is not a 'one size fits all' answer.
- The term circular economy means different things to different people. In Wales for example, they called their circular economy strategy 'Beyond Recycling', to raise awareness of the breadth of the subject.
- There is a real strive to meet needs closer to home, rather than over-reliance on the West.
- The surveys we have looked at indicate that the public fully acknowledge the impact their behaviours and actions have on the environment
- Education is key and there are multiple examples of fantastic education programmes being introduced so that the circular economy becomes 'the norm' for current, and future, generations.
- There are lots of fantastic examples of 'good practice' across the world, and everyone is keen to share, and learn from each other.

There are also other issues that new businesses need to factor in from today's world, such as :

On expanding our searches, it has become evident that not all companies that have launched internationally have succeeded in every country they reached out to.

As an example, Starbucks failed in Israel having not checked out the cultural differences, Israel having their own strong coffee market already which favored espresso and Turkish coffee over American filtered coffee. It's reported that an Israeli entrepreneur offered advice to meet local tastes, but Starbucks did not act on this (Bond, 2022). However, Starbucks is very successful in China as a comparison of their successes, offering local items on its menu and they also spent time well-executing their relationship with Chinese partners (Zakkour, 2017)

Also, Walmart failed in Germany, having to sell their 85 outlets after a 9-year struggle. It's reported that their business model was not suitable for the Germans. Walmart claimed that Germany's business environment was difficult for them to obtain the scale and results they desired. The company failed to convert shoppers and regulators to its low-price American style trading. It also faced accusations that it was using short term predatory pricing to put small shopkeepers out of business. The regulators ordered Walmart to increase the price of basic foods, such as Milk, Flour and butter. (Guardian, 2023) However, Walmart's website states that it's successfully located in 24 other countries around the world each country with its unique cultural, economic, social & political institutions. (Walmart, 2023)

- Starbucks failed in Israel having not checked out the cultural differences.
- Israel already had their own strong coffee market – which included espresso and Turkish coffee, which was preferred over American filtered coffee.

However:

- As a comparison, Starbucks is very successful in the likes of China where they offer local items on the menu and also spent a lot of time building on their relationships with Chinese partners.

Also to look at a further example:

- Walmart failed miserably in Germany, having to sell 85 outlets after a 9 year struggle
- Its reported their Business Model was not suitable for the Germans
- The company failed to convert shoppers to low-price American style trading
- The regulators ordered Walmart to increase their prices on certain items in fear of them trying to use short term low prices to put small shopkeepers out of business.

However

- On Walmarts website it states they are trading successfully in 24 other countries

- Alongside these examples, current climate issues should also be taken into consideration, such as:

Inflation and Economic Downturn

Increase in Data and Device attacks

Supply Chain Issues

- **Inflation and Economic Downturn-** The headlines are continuously reporting the skyrocketing inflation and that it's likely to continue in 2023. Many businesses will need to prepare for this in allowing for turnover to possibly shrink or stagnate. (Marr, 2022)
- **Increase in Data and Device attacks** – It has been reported that over the last 12 months, ransomware attacks in the UK alone affected 73% of businesses. This was a 15% increase from the previous year. Companies are being pushed to ensure they backup their data, install malware prevention software, use strong passwords and to continuously check the company's digital footprint. (Centre, 2023)
- **Supply Chain Issues** – Whilst there has been sign of supply chain issues easing since the pandemic, other global factors are a potential new risk such as 1. Spill over Impacts from Russia – Ukraine Conflict. 2. Limitations on Air transportation, especially over Russia Airspace 3. Possible rebound in US port congestion as and when Chinese output increases again. (Morgan, 2022)

Alongside these examples, the company should also consider the current climate issues which are constantly being highlighted at this volatile time :

1. Inflation and Economic Downturn – Its reported that inflation will continue to rocket in 2023 and businesses should prepare for lower turnovers in reaction to this.
2. Increase in Data and Device attacks - It has been reported that over the last 12 months, ransom ware attacks in the UK alone affected 73% of businesses. This was a 15% increase from the previous year. Businesses are actively being told to secure their businesses from such attacks.
3. Supply chain issues - Whilst there has been sign of supply chain issues easing since the pandemic, other global factors are a potential new risk such as 1. Spill over Impacts from Russia – Ukraine Conflict. 2. Limitations on Air transportation, especially over Russia Airspace 3. Possible rebound in US port congestion as and when Chinese output increases again.

This brings our presentation to a close and we welcome any questions you may have ?

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The information presented to you was gathered as follows:

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Adam researched Wales, Scandinavia, EU, UN, & Ellen McArthur Foundation

- Ryan Thomas

Ryan researched Japan

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Bernadette researched Canada and Regions of Canada

- The Summary of Findings

Researched and reported on by Adam & Bernadette