

CIRCULAR INSIGHTS

on Design, Procurement
and Sales & Marketing

By the
Capital Equipment Coalition

Davos, January 2020



PACE
PLATFORM FOR ACCELERATING
THE CIRCULAR ECONOMY

CIRCLE
ECONOMY



Circle Economy

We work to accelerate the transition to a circular economy. As an impact organisation, we identify opportunities to turn circular economy principles into practical reality. With nature as our mentor, we combine practical insights with scalable responses to humanity's greatest challenges.

Our vision is economic, social and environmental prosperity, without compromising the future of our planet.

Our mission is to connect and empower a global community in business, cities and governments to create the conditions for systemic transformation.



The Platform for Accelerating the Circular Economy

This report is published as part of the Platform for Accelerating the Circular Economy (PACE). PACE is a public-private collaboration mechanism and project accelerator dedicated to bringing about the circular economy at speed and scale. It brings together a coalition of more than 70 leaders and is co chaired by the heads of Royal Philips and the Global Environment Facility. It was initiated at the World Economic Forum and is currently hosted by the World Resources Institute.

EXECUTIVE SUMMARY

This learning document — Circular Insights by the Capital Equipment Coalition — captures the insights of the members around driving forward the transition towards a circular economy in the capital equipment industry. It focuses on three hot topics of current debate for circularity: Design, Procurement and Sales & Marketing. The learnings address both behaviours and best practice, with a view to helping organisations shift mindsets, as well as align business models with circular economy principles.

DESIGN

In the hierarchy of production and manufacturing, design comes before procurement — first we specify, then we source the materials and components. Design is, therefore, fast emerging as a focus for action and investment.

In order to be strategic and coherent in tackling the various issues involved throughout the supply chain, the starting point for any organisation should be to create and adopt a circular design framework tailored to its own needs. This is not as straightforward as it sounds — fundamentally, there is no one-size-fits-all design solution.

First and foremost, therefore, it pays to select a circular design framework that fits the culture of the company, as well as the context in which it operates. To achieve the best fit will likely call for a degree of customisation. Once determined, this custom framework can then be applied across the organisation to help embed the design principles with rigour and consistency, supported by dedicated training and communication.

PROCUREMENT

Procurement is pivotal to realising the circular economy — turning design intentions into deliverables; and policy into practice. It is how we get what we want, when and where we need it.

That said, circular procurement is still very much an emerging and evolving discipline. So, from a capital equipment perspective, the role of procurement needs to be placed in the context of the broader themes and trends shaping modern manufacturing, as they affect both mindsets and business models.

Markets today are increasingly recognising the importance of scope, since procurement should relate to the function and performance delivered by an asset, rather than just the asset itself. There is a clear move away from transactional interactions with suppliers, too, towards more of a shared business case. Management best practice also champions a holistic approach, that looks beyond the boundaries of departments, or even companies.

What is now needed, therefore, to embed circular principles into this maturing procurement function and equip professionals with the thinking and skills required, is a mix of ambition, strategy and KPIs, combined with training and internal communication, to drive innovation and supply chain collaboration.

EXECUTIVE SUMMARY (CONTINUED)

SALES & MARKETING

The circular economy will not sell itself, though. So, in a competitive marketplace such as the capital equipment industry, sales and marketing teams are vital and good ones valuable.

To steer the conversation around circularity and position any proposal appropriately, it is important first to ascertain the maturity level of the prospect's sustainability or lifecycle strategy — knowing which stage they are at will likely increase the rate of engagement and help align the pitch with their expectations and goals.

The process begins with asking the right questions, before exploring market entry and expansion, plus building awareness and appetite through storytelling. From transparency to technology, though, the challenge is to find a means of keeping the message clear for decision-makers, without over-simplifying complex issues.

WAY FORWARD

In all the discussions around action to preserve and recover value, two priorities appear popular throughout, shared commonly in workshops and case studies across the three hot topics: ultimately, "collaboration" and "communication" are watchwords for the way forward in the capital equipment industry on the circular economy.

"At Enel we have fully embedded innovation and sustainability in our business model and operations, promoting circular economy through an ecosystem perspective. Adhering to the Capital Equipment Coalition will allow us to share best practices and strengthen cross sectorial collaboration, accelerating the transition towards a decarbonised and circular economy."

- *Francesco Starace, CEO Enel*

"It's great to join forces with business leaders with the vision and commitment to drive circular change on take-back and repurposing of capital equipment, assuring overtime that no electronic waste ends up in landfills. The PACE Capital Equipment initiative shares best practices among the wider business community to accelerate the transition to a circular economy. In Philips we made solid progress in 2019 and we are confident to meet our 2020 ambitious targets."

- *Frans van Houten, CEO Royal Philips*

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1. CONTEXT & INTRODUCTION

1.1 WHY IT IS ESSENTIAL TO ADOPT CIRCULAR STRATEGIES IN CAPITAL EQUIPMENT

Capital Equipment represents a broad group of physical hardware products as diverse as data servers, medical scanners, power plant equipment, and ships. These products enable us to meet a wide range of societal needs around the world, whilst also expanding what can be achieved in areas such as connectivity, energy, healthcare and logistics. The manufacture of this equipment, however, uses 7.2 billion tonnes of raw materials globally, per year¹. It is therefore essential to optimise capital equipment stocks and their use through circular strategies, to reduce and minimise environmental impacts, address resource scarcity, build market resilience and develop sector sustainability.

1.2 FROM WHY TO HOW: A SHORT HISTORY OF THE CAPITAL EQUIPMENT COALITION

The Capital Equipment Coalition (CEC) is a group of nine leading companies that have committed to driving action to preserve and recover value from capital equipment. The Coalition was originally established and announced in January 2018, at the annual gathering of the World Economic Forum (WEF), in Davos. Philips CEO Frans van Houten had issued a rallying cry to fellow business leaders and key organisations in the capital equipment industry, inviting and urging them to make a public pledge to work collectively and commit to specifying measurable ambitions around circularity. Together, the newly formed CEC would develop learning and progress action to help make circular business models and operations the new normal for the industry.

Important as the initial pledges might be, it is really the transparent reporting of progress against publicly declared ambitions that is perhaps the most significant aspect of the CEC circularity drive. In this, the annual learning documents serve to share knowledge and insights, but also help underline the business case and communicate the sense of urgency for the capital equipment industry to transition to a circular economy.

1.3 HOW THE CEC WORKS TOGETHER TO SHARE INSIGHTS, PLUS CREATES AND DISSEMINATES LEARNINGS

Over the past two years, Coalition members have gathered to exchange best available practices and discuss market barriers affecting the successful transition to a circular economy in the capital equipment industry. For this year, the specific aims of the CEC agenda were to engage around circularity as follows:

- Focus deep dives around three hot topics for transition — Design, Procurement and Sales & Marketing — with each theme explored in detail and developed in a workshop setting; backed by a fourth workshop concentrating on communications and how best to share the work of the CEC, empower others to make their own pledges, or join the Coalition;
- Share and discuss best available practices; [Circle Economy](#) — an impact organisation working with businesses, cities and governments to accelerate the transition to a circular economy — facilitated workshop sessions² on a rotational basis at different members' operational sites, with this field-visit approach allowing participants to see different circular economy applications in action.

¹ Circle Economy, 2019, The Circularity Gap Report 2019, circularity-gap.world

² The CEC operates Chatham House rules for discussion and debate, plus Circle Economy ensures meetings are prepared, structured and run in a pre-competitive and collaborative manner, in accordance with competition law.

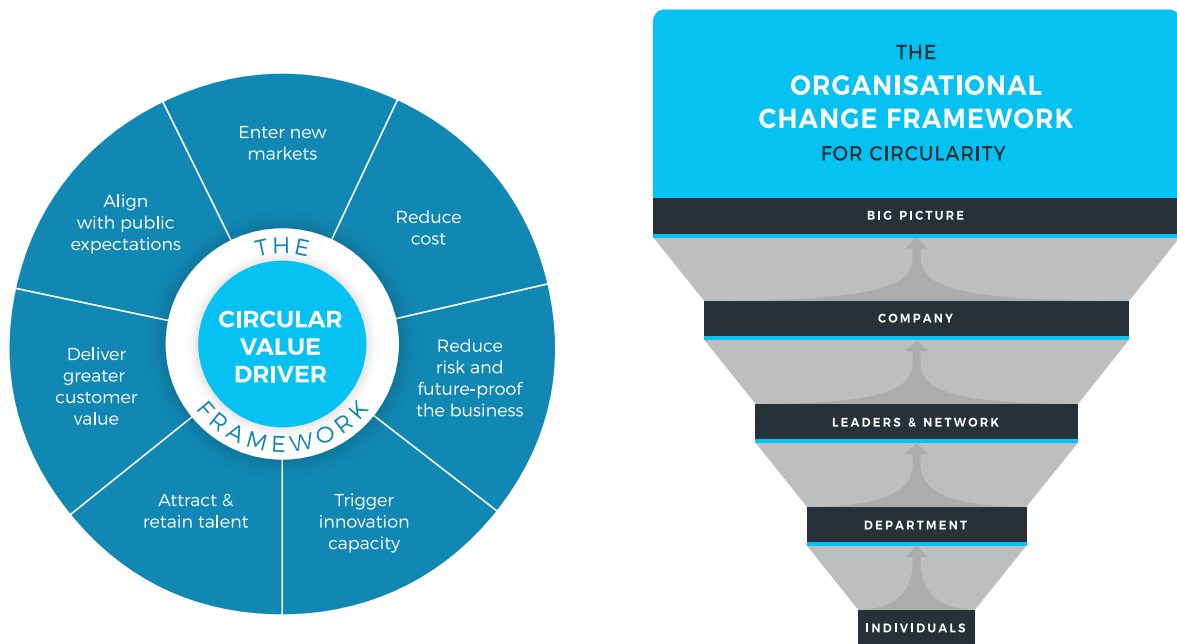
1.4 FRAMEWORKS TO STRUCTURE THE TRANSITION AND EMBED CIRCULARITY

In its first year, the Coalition developed two frameworks to structure the transition and embed circular economy principles into organisational business models and operations:

- The Circular Value Driver Framework highlights seven key considerations that organisations should take into account when developing circular business proposals;
- The Organisational Change Framework for Circularity highlights the need to provide direction and build capacity for change at multiple levels within an organisation.

Detailed descriptions of the two frameworks, complete with illustrative examples for each, are available to read in the [Circular Value Creation](#) report that was the output of 2018, published at Davos in January 2019³. Themes discussed in this original learning document included the value of collaboration, building the business case and circular value drivers, as well as a detailed dive into organisational change, before concluding with some insights into how to make it all stick, by embedding circularity into process and culture.

Figure 1. The frameworks developed in the first year of the CEC



³ Visit the Capital Equipment Coalition page with access to the learning documents via pacecircular.org/capital-equipment-coalition

2. LEARNING AND DOING: PUTTING CIRCULAR ECONOMY INTO PRACTICE

This chapter captures the stories shared and insights gathered from the members of the Capital Equipment Coalition during a programme of workshop sessions. The workshops explored how members support and collaborate with colleagues from across their own organisation, as well as clients and supply chain partners, to embed circular principles into day-to-day best practice. The sessions focused on three key areas:

1. Design;
2. Procurement; and
3. Sales & Marketing.

For each element, the learnings address both circular economy attitudes and activities, with a view to helping organisations shift mindsets, as well as align business models, to drive truly sustainable and systemic change.

2.1. DESIGN

Ultimately, in the hierarchy of production and manufacturing, design comes before procurement — first we specify, then we source the materials and components. In other words, we choose what we use when we design.

So, whilst talk of resource availability has inevitably dominated the early days of business discourse on circular economy issues, design is now fast emerging as a focus for action and investment. Critical to restorative and regenerative thinking, design is increasingly being promoted and understood as one of the primary means by which companies can deliver on their circularity promises.

From architecture to products and from cities to capital equipment, design therefore has a leading role to play in the circular economy. Moreover, this message is increasingly being shared with the corporate community at large — as illustrated by the launch by IDEO and the Ellen MacArthur Foundation of the Circular Design Guide at the World Economic Forum, in Davos, back in 2017⁴.


When it comes to circularity in capital equipment markets, the three key elements driving the design agenda for the CEC members at present are: materials, embedded impact and packaging. To be strategic and coherent in tackling the various issues involved throughout the supply chain, the starting point for any organisation should be to create and adopt a circular design framework tailored to its own needs. This is not as straightforward as it sounds.

Fundamentally, there is no one-size-fits-all design solution; it is simply not feasible to come up with an overarching circular design framework that would apply to any capital equipment company. That said — and mindful of such landmarks in circular design thinking as the cradle-to-cradle principles advanced in the Eighties — perhaps the key lesson to be learned is that, first and foremost, it pays to select a framework that fits the culture of the company, as well as the context in which it operates. To achieve the best fit will likely call for a degree of customisation. Once determined, this custom framework can then be applied across the organisation to help embed the design principles with rigour and consistency, supported by dedicated training and communication.

⁴ Ellen MacArthur Foundation, “New Circular Design Guide launched by the Ellen MacArthur Foundation and IDEO at Davos”, January 20, 2017, <https://www.ellenmacarthurfoundation.org/news/new-circular-design-guide-launched>

CIRCULAR DESIGN FRAMEWORK EXAMPLES

Figure 2. Circular design elements framework – Member examples

	SMART ENERGY CONSUMPTION	Design and promote activity-based power, power management, and energy efficiency features
	STANDARDISATION & MODULARISATION	Make parts and products standard and modular wherever possible to aid in upgradability, repair, and economies of scale
	DESIGN FOR DISASSEMBLY, REPAIR & REUSE	Make components easy to separate and use similar materials to facilitate reuse and recycling
	MATERIAL USE	Decrease material use and incorporate recycled content into products
	SUSTAINABLE PACKAGING	<p>Reduce material use and increase the use of recycled content while maintaining current standards of product protection</p> <p>Reduce foam and plastics packaging toward fibre-based designs</p>

PHILIPS	SAFETY	<p>Easy to clean, sterilise and restore aesthetic state</p> <p>Secure and private exchanges</p>
	PERFORMANCE	<p>Easy to assess and track performance</p> <p>Easy to disassemble, repair and re-assemble</p>
	OBSOLESCENCE	<p>Modular design for forward and backward compatibility (with future or older parts)</p> <p>Standard (from perspective of refurbishment), durable element selection => regulation requirements</p>
	MATERIAL STEWARDSHIP	<p>Sustainable material selection (instead of virgin)</p> <p>Easy to dismantle back into pure materials</p>



**CONTROL/EXTEND
PRODUCT LIFETIME**

Design for ease of (self-)repair (e.g. standard tools, instructions, access to spare parts)

Avoid using parts that require frequent replacement/repair

Add sensors and diagnostic intelligence to monitor operability

Ensure resistance to dirt/dust accumulation

**SIMPLIFY AND
STANDARDISE**

Minimise product variants

Simplify the product structure

Minimise product size and weight

Use standardized/common industry interfaces in the product

**PREPARE FOR
END-OF-LIFE**

Make products easy to disassemble

**SOUND MATERIAL
CHOICES**

Use materials that are recyclable (material that can be reprocessed into raw material) or biodegradable

Use recycled (non-virgin) materials

Use fasteners (e.g. screws) rather than adhesives (e.g. glue)

Use components made of pure/homogeneous materials (e.g. avoid blends, alloys and coatings)

Use materials with low environmental impact

Use durable materials

Customisation — selecting a framework

In customising its design approach, questions and ideas for an organisation to consider might include the following:

- Begin by asking how you can help individuals adopt a circular mindset and bring circular design thinking into their daily routine — importantly, this process should be both top-down and bottom-up;
- In co-creation mode, go into training sessions armed with a customised design framework with four to five key design principles to guide the conversation; then sit down with the people who will be implementing them, to detail and record approaches, so as to create co-ownership;
- To illustrate and bring the framework to life, it can be more impactful and effective to use real-life examples and start with an organisation's iconic products, and use visuals to help people grasp the concept more easily; and
- Tap into current design trends — for example, focus on upgradeability as a hot topic.

CISCO CASE STUDY

CIRCULAR DESIGN PRINCIPLES

The circular economy is a natural extension of Cisco's own business transformation. As a company, we are moving from product upgrade cycles to a hardware- and software-subscription model. With this same mindset, we aim to harness technology to limit the unintended consequences of one-way consumption. One of Cisco's focus areas for advancing a circular economy is Circular Design. In 2019, Cisco introduced Circular Design Principles for all of our new products to reduce our resource impacts and to improve our ability to repair and reuse hardware over its lifetime. We have launched a goal committing that 100% of new Cisco products will incorporate our circular design principles by 2025. The principles consider five primary areas of focus:

- Material selection;
- Standardisation and modularisation;
- Sustainable packaging;
- Energy;
- Design for disassembly, repair, and reuse.

With active cross-functional input and engagement across our design community, we aim to make these principles part of our design DNA by integrating them into our design practice moving forward.

Training — capability build-up

In rolling out any circular design framework company-wide and even perhaps with supply chain partners, training is essential, both for awareness-building and skills competence. The intention is to foster a mindset for circular product development by prioritising environmental implications at end-of-life and throughout the whole life cycle — and the primary vehicle for this is Life Cycle Assessment (LCA), undertaken against broad environmental criteria, not just carbon.

For design professionals, LCA training is particularly valuable. LCAs provide the practical tools that enable you to develop a holistic mindset and learn to work on a product in its proper context — understanding its role within a circular society, complete with information flows and changing business models.

LCA training therefore provides a means to capture the underlying complexity of circular design principles, in such a way as to make choices simple and sustainability make sense — so enabling decision-making in sourcing and specification. There is also now a growing call to push this externally, to stimulate customer demand and advocate for the establishment of LCAs as industry standard.

PHILIPS CASE STUDY

CIRCULAR DESIGN TRAINING FOR PRODUCT ARCHITECTS

In 2019, Philips developed and deployed tailored circular economy training for all its product architects. This is the first of a series of planned functional-specific trainings that translate circular economy principles to the specific Philips reality of functional experts. The target audience consisted of approximately 500 individuals, distributed across sites globally and across very diverse business units ranging from electric toothbrushes to large medical scanners. The training was developed in-house as classroom training with two main objectives: 1) create awareness and a shared language of circular design options relevant for Philips; 2) start defining granular, business-unit-specific design criteria. After successful planning and alignment amongst the various business unit leaders and innovation managers, the training sessions were held across the globe in the second half of 2019. Architects are now translating the new knowledge into business-unit and product-specific design criteria that will be implemented into the respective quality management systems.

Communication — engagement and sharing

In tandem with formal training, the other primary means of boosting awareness and adoption of a circular design framework is communication. To promote and maintain a strategic and coherent vision for circular design, focus is critical, right from the outset. In this, case studies and real-world examples can help communicate the potential for application of circular design principles in practice — for instance, by identifying the 20 most iconic products and then telling their circular design story.

Messages need to be relevant and marketable, in order to be easy to sell and infectious when shared: successful product stories are powerful tools in winning engagement and driving the circular design agenda for change.

KPN CASE STUDY

DESIGNING CIRCULAR PASSPORTS FOR TELECOMMUNICATIONS GOODS

KPN has the ambition to become close to 100% circular in 2025. This year we started to create circular product passports for iconic products representing KPN with significant volumes of raw materials used. Examples are TV-receiver, modem and remote control.

The circular product passport is visually attractive and contains:

1. An exploded product view with comments showing the design features that are in line with circularity and those still to be improved to reduce material impact.
2. The list of the individual materials with attributes like cradle-to-cradle design and avoidance of virgin materials.
3. The core of the passport shows the level of recyclability by design and in practice after end of life. A gap between these two definitions may trigger further circular design improvements.
4. Options to reduce eco-impact based on science-based eco-cost method.
5. Recommendations from suppliers to improve sustainable design via dialogue.

2.2. PROCUREMENT

Procurement is pivotal to realising the circular economy — turning design intentions into deliverables; and policy into practice. So much more than simply ‘shopping’ for supplies, it is the interface with parties upstream in the value chain. It is how we get what we want, when and where we need it.

That said, circular procurement is still very much an emerging and evolving discipline, although useful tools and aids are now becoming available, such as the online [Circular Procurement Guide](#) of the Dutch Green Deal⁵.

The Changing Role of Procurement

From a capital equipment perspective, the role of procurement needs to be placed in the context of the broader themes and trends shaping modern manufacturing, as they affect both mindsets and business models.

Markets today are increasingly recognising the importance of scope, for instance, since procurement should relate to the function and performance delivered by an asset, rather than just the asset itself. They also favour collaboration, as evidenced by a clear move away from transactional interactions with suppliers, towards more of a shared business case. Plus, management best-practice champions a holistic approach, that looks beyond the boundaries of departments, or even companies.

So, what is now needed to embed circular principles into the processes and culture of this maturing procurement function? Also, how can the procurement professionals themselves best be equipped with the thinking and skills required to understand and apply circularity in day-to-day activities?

ASML CASE STUDY

MAINSTREAM ‘AS-NEW’ MODULES THROUGH SUPPLIER ENGAGEMENT

ASML proactively supports the circular economy concept as we believe it is essential to ensuring the future success and competitiveness of the semiconductor equipment industry.

In 2019, we further engaged with our suppliers in order to introduce ‘As-new’ modules into our mainstream manufacturing. ‘As-new’ modules are suitable for multiple product lifecycles: they are returned from field upgrades and, after a thorough re-qualification process, restored to as-new conditions and performance.

Over the past year, we successfully set up re-manufacturing plans in collaboration with more than 10 of our largest suppliers.

This resulted in an improved material availability for our supply chain, a positive environmental impact, a deeper insight into the reliability of our products and opened the way to a new shared business model.

Because of the positive feedback on common value creation, we are now working on opening the conversations with the rest of our main suppliers to further scale ASML’s circular economy efforts.

⁵ Access the Circular Procurement Guide (in English) via <https://wegwijzer.gdci.nl/en>

Ambition, strategy and KPIs

First off, any vision for procurement must keep in mind what is primarily being procured, perhaps making a distinction between supply chain procurement and product or service procurement. Obvious as this may sound, it is important to take account of the market context and tailor general principles to fit the specific organisation's reality — whether that involves procurement of raw materials, manufacturing, or finished products and services.

Then, to prepare the procurement function for circular practices which deliver on ambition and KPIs, an organisation needs to ask itself three priority questions:

- 1. Who feels ownership?** Ownership of any circular ambition should extend beyond the life of the product, both before and after.
- 2. Do long-term goals align?** From an investment perspective, long-term impact projects should be prioritised. R&D and procurement will therefore need to team up to ensure a sense of shared responsibility and ownership, so helping to embed circularity principles in deliverables (either products or services). The supplier focus of procurement professionals is complemented by the design focus of R&D.
- 3. How can collaboration happen and help?** Collaboration should extend beyond the usual players — both further up and down the value chain. Operating at the two-way interface, procurement professionals have a pivotal role to play, reaching out beyond the current Tier 1 and direct customer links, to include suppliers' suppliers and customers' customers. In this more expansive community, alignment is important to help close loops and build relationships for long-term impact. The key here is to focus on the function performed by a product, rather than the product itself. This facilitates business models that favour access over ownership.

DAMEN SHIPYARDS CASE STUDY

REUSE - REDUCE - RECYCLE PROGRAMME (REFURBISHMENT PROGRAMME)

Since its origin, Damen Shipyards has produced approximately 5000 vessels in many market segments. The goal of Damen is to deliver vessel solutions which have the longest economical as well as technical lifetime. Therefore, services such as maintenance packages, maintenance and usage training programmes, as well as repair and refit operations have been provided to Damen vessel owners for many years.

However, after long or intensive usage periods, assets do get to their technical maximum lifetime. The result could be that performance decreases or assets become obsolete, and for this reason are no longer economical to use or worth minor repairs. Damen has solved this challenge by developing a refurbishment programme with the goal of providing a second life to vessels which have reached their technical end. The aim of the programme is to reuse high capital assets, reduce the waste of decommissioning or building new, and create the opportunity to recycle in a sustainable matter. In order to do so, the Damen organisation is transitioning into a lifecycle-oriented company where conventional functions are attributed to new parts of the value creation process. Currently, five vessels have already been fully refurbished and got a second life in similar operations.

Training and internal communication

To help create organisational change in procurement, a combination of continuous awareness-building and stakeholder interaction is needed. This can best be achieved through a mix of internal communications and formal training, that together foster understanding and contribute to the development of the skills required to bring circular economy principles into practice on the ground.

Accordingly, a practical training curriculum for procurement professionals in capital equipment companies, that helps them understand the value of circular economy for their function, should cover the following main topics:

- 1. Quantification:** How to calculate product lifecycle costs, benefits and risks; plus, offer analysis to help distinguish precisely what circularity means per spend category — this will enable more meaningful and focused engagement with suppliers on the topic;
- 2. Supplier buy-in:** How to communicate the needs of the organisation to suppliers; plus, why collaboration is important — future partnerships between suppliers and procurers will be function-, rather than product-oriented, so scoped on a much longer time horizon and required to embrace a more holistic approach;
- 3. Contracting:** What skills are needed to negotiate circular contracts;
- 4. Environmental impact:** How to assess circularity potential in the choice of designs, materials and specifications, to trigger different ways of thinking;
- 5. Ecosystem development:** How new ecosystem players or partners, up and down the supply chain, can create value via collaboration and alignment on incentives.

When it comes to implementation of circular procurement practices, there are then numerous best-practice communication techniques to employ that help explain and embed matters further. Visibly drawing the inputs and outputs process flow, for example, can prove very useful in making the role of procurement and the wider supply chain organisation upstream transparent.

Involving stakeholders beyond procurement is another good idea, engaging them on topics such as design, sourcing options and other relevant knowledge, including alternative contractual arrangements. In this, it is important to embrace mindsets and encourage motivation that trigger the 'new' behaviours and relationships between suppliers and your organisation in line with circular economy principles.

Finally, storytelling is vital to share lessons learned with procurement teams — not only including such positives as best practice around sourcing, but addressing key challenges, as well. Underpinning these stories with data and facts, plus illustrating them with visuals and graphs, will enable procurers to learn and understand what circular economy means in practice and identify opportunities for improvement.

Innovation and supply chain collaboration

Whilst onboarding of new suppliers can purposely be aligned with the circular agenda from the outset, it is the existing supplier relationships that arguably provide the most critical opportunities for organisational and cultural change. Engaging with suppliers already on the books calls for a combination of collaboration and innovation, if the transition to circular

This is where the “Circular Value Driver Framework” comes into play as a guiding framework⁶, as manifest in the ‘innovation’ and ‘supply chain collaboration’ drivers. In terms of delivering the circular transition, it should be noted that there is a distinction to be made here between incremental change and disruptive change — that is to say, between making small changes to existing products and practices, as opposed to developing new products, services or business models that are fully circular and break with old ways. Bearing this in mind, the priorities are as follows:

- 1. Product Portfolio:** Separate product from non-product components — requirements for non-business-critical parts (such as tools and packaging) are generally less strict, thus allowing for learnings and pilot projects for incremental change to circular procurement practices;
- 2. Functional requirements:** To know the material specification, it may be necessary to go two to three levels deep into the tiers of the supply chain in order to make the required change towards circular materials (for example, switching to post-consumer plastics as in the Vanderlande case study) — the question is who in the value chain really understands the material and its properties and is therefore best positioned to propose changes; in all of this, availability of lifecycle data can speed decision-making;
- 3. Policy & Regulation:** Whilst the one thing required in the current regulatory landscape might appear to be compliance, the watchword for the future is preparedness — so, products and services must align with both current and future requirements, with such sustainability built into all types of procurement, as standard;
- 4. Risks & Benefits:** There is a perception of risk associated with the quality of final products involving recycled and re-used content — in a spirit of transparency and mutual trust, suppliers therefore want customers to be made aware of the issue, so as to set the right expectations; and practices such as changing a product label to ‘refurbished’ or ‘remanufactured’ can help overcome initial resistance.

ENEL CASE STUDY

ENEL CIRCULAR PROCUREMENT

The Enel Circular Procurement strategy aims to improve the circularity of products and services we buy through a three-step approach:

- 1. Definition of metrics and KPIs:** quantify, assess and validate Environmental KPIs deriving from the lifecycle of a product (e.g. smart meters, wind turbines, etc) through the EPD (Environmental Product Declaration) system;
- 2. Implementation of K factors:** Rewarding the suppliers through tender-specific instruments for their commitment in transition towards the Circular Economy — for example, in 2019 Enel implemented a K factor to reward suppliers that carry out projects related to alternative use of waste produced;
- 3. Co-innovation:** launch co-innovation projects together with suppliers in order to review the lifecycle of products and change the purchasing methods according to circular economy — for example, in 2019 Enel X started a project with suppliers to reuse for maintenance activities the spare parts recovered at the end of life of EV recharging infrastructure.

⁶ Read more about the Circular Value Driver Framework developed by the CEC in the 2018 learning document, Circular Value Creation. Find it via pacecircular.org/capital-equipment-coalition

2.3. SALES & MARKETING

The circular economy will not sell itself, at least not yet. In a competitive marketplace such as the capital equipment industry, sales and marketing teams are vital and good ones valuable. So, where do you begin?

Starting the conversation on sales and marketing

Well, first it is important to ascertain at what level the conversation is being held, in order to position any pitch on circular economy issues appropriately. To best meet customer needs, it may be helpful to fill in a maturity matrix⁷ for their sustainability or lifecycle strategy — knowing which stage they are at will likely increase the success rate for engagement and help align the pitch with their expectations and goals.

A judgement can then be made as to how transparent you may want, or need to be towards customers, for instance on matters such as the use of refurbished or remanufactured parts. Such principled decision-making might be determined by broader sustainable or responsible procurement agendas, including how important it is to source an ethical supplier with a social impact agenda.

Scoping out the conversation overall, it may also be beneficial to involve engaged employees as ambassadors, for example, in support of market-facing teams on sustainability.

Fundamentally, though, the two burning issues for sales & marketing teams are:

- What kind of demand for 'circular' products and services are you experiencing in your target market(s)?
- How do you help your market-facing colleagues to onboard customers with circular value propositions?

Asking the right questions

Success in sales and marketing starts with an open dialogue. This boils down to asking the right questions to start the right conversation with your customer — this is not always easy and will depend on the customer relationship. Yet, providing the platform to share what is important to each party when it comes to sustainability, will open up avenues to explore circular value propositions that, crucially, both meet your customers' needs and fit their sustainability maturity level, too.

Of importance here is the ability to secure access to decision-makers and influencers within the C-Suite, starting at CEO level. It also helps to involve in the conversation those counterparts on the customer side who may have a positive attitude on the topic. It is best to avoid discussion about sustainability and circularity becoming an isolated exchange only had between subject-matter experts on both sides. Everyone should be able to have the conversation — so, try to identify and equip sustainability ambassadors throughout the organisation to get involved, so enabling all customer-facing colleagues to contribute; but, be mindful of the potential for greenwashing in the process.

⁷ Baumgartner & Ebner, 2010, Corporate Sustainability Strategies: Sustainability Profiles and Maturity Levels, Sustainable Development 18, 76-89; doi:10.1002/sd.447

Market entry and expansion

Sales and marketing teams should be able to select from an extensive menu of different pitch elements and case-study examples to support a tailor-made proposition to put to their customers around circularity, proactively shaping a market through understanding their needs. Selling points can include such benefits as:

- Refurbished or remanufactured assets provide budget alternatives for customers;
- Circular resource solutions, compared to extracting virgin materials, help tackle scarcity concerns;
- Product lifecycle services, such as extended warranty and support for assets already in use, can extend product lifetime and increase the return on investment;
- Sustainable procurement and tenders with specific requirements on recycled and refurbished content are a win-win and are to be encouraged.

All in all, circular solutions represent fertile ground for strong customer relationships and added value, delivering benefit through such features as extended lifecycles and predictive maintenance to avoid downtime. An illustrative example of added value might be a proposal to upgrade direct at the customer site — circularity can be integrated seamlessly into their lifecycle management programme, however, any such proposition must be not only convenient, but also credible (for instance, offering a good and transparent solution for takeback of old equipment for re-use and recycling).

Cost is another potential selling point for circularity. It is standard practice in most sales scenarios for value-based discussions to be held around such topics as budget constraints and spending limits on the customer side. The good news is that refurbished or remanufactured products with as-new or better-than-new quality could actually be the solutions that fit customer needs, both in terms of performance and the financials. Such offers can be mutually beneficial — on the manufacturer side, it includes various benefits to maintain the value of products, a genuine win-win for circularity.

LELY CASE STUDY

ACTIVATE CUSTOMERS FOR REMANUFACTURED EQUIPMENT

Context: Lely operates within an early adaptors market with highly innovative solutions for dairy farms. The robots are robust and sustainable, but today's innovations go faster than our customers' investment cycles. Customers therefore only want to buy the newest models when it is time to reinvest.

Goal: Create trust and activate new customers to make the step to robotisation with refurbished equipment. With this, Lely wants to make full use of the durability and reliability of the robot and contribute to a circular economy.

Next steps: To create trust, Lely introduces a certified label Taurus for refurbishment to be rolled out in Franchise Network. To create access Lely will launch an open trader platform in 2020.

Lesson: To introduce a successful refurbishment programme it is key to organise processes of the remanufacturing itself and set up a customer-facing programme to create market at the same time.

Storytelling and external communication

The story of your organisation's sustainability and circular economy strategy is certainly one that needs telling; but it needs telling well. Even when that story is complex — perhaps especially then — it is critical that you use accessible language and an understandable narrative. This does not mean it has to be a simple version, per se, but the message must be clear and the style engaging.

Such framing and shaping may mean you adapt the story differently for different audiences. The goal is to find common ground and interest, plus the right language — and these lessons apply to all storytellers involved, from sustainability experts and brand ambassadors, to the salesforce on the road, behind the counter and on the phone.

Involving engaged employees, for instance as ambassadors to support market-facing teams on sustainability, can also help ease the pressure and share the workload when there is limited human resource capacity available. This comes with a myriad of benefits: not only does it help embed organisational change and drive transformation; but individual employees get to work on their personal development and growth; plus, fostering such collaborative teambuilding spirit can boost morale and even productivity.

Finally, it is also worth remembering that selling on circular economy or sustainability benefits is in many ways no different from any other traditional sales scenario — calling for appropriate salesforce incentives, adequate time and training resources, plus realistic targets for new products and propositions. To build competence and confidence, it is important only to call upon sales teams and talents when and where there is real opportunity.

In short, have the right people tell the right story to the right customer at the right time, if you really want to write good business.

DELL CASE STUDY

EXTENDING THE MESSAGE OF THE CIRCULAR ECONOMY

At Dell Technologies, we believe and see that our commitments to advancing sustainability, cultivating inclusion, and transforming lives with technology are of great interest to our customers. It is becoming increasingly important for customers across the public and private sectors to do business with an ethical and responsible company who shares their values.

We want our customer-facing teams in sales and marketing to understand and be able to share our programmes in their engagements with customers and stakeholders. Therefore, we are building a programme of CSR Leaders and Ambassadors for team members across functions who are interested in these topics and would like to go the extra mile in sharing this work with colleagues and customers. Through a programmatic approach that includes webinars, newsletters, trainings, and coaching, we support our team members globally to be ambassadors of our social impact programs and our true values as a company.



VANDERLANDE CASE STUDY

ENABLING SALES TO HAVE THE RIGHT DIALOGUE

Accelerating the circular economy requires new ways of thinking. The way we measure the performance and the impact of our performance in a linear economy is not the same as in a circular economy; and determining 'how' to measure this is extremely challenging. Also, the way we discuss our solutions with our customers changes; and incorporating these changes on how the sales force approaches circular business models has proved to be hard work. This is why we have partnered with the Technical University of Eindhoven in a joint PhD project to develop a series of tools to create integrated assessment methods of circularity and sustainability of product and business model design of capital equipment, along with tools that enable our sales teams to have the right dialogue with our customers. Collaboration with academia is critical for these kinds of transitions, and we are confident that it will give us new insights for strategic decision making in our company.



3. THE WAY FORWARD: A CALL TO ACTION

Across all three of the hot topic themes — Design, Procurement and Sales & Marketing — there appeared a couple of keywords and ideas in common throughout, shared consistently in workshop discussions and illustrated comprehensively in case study examples from members of the CEC. These are the twin pillars of collective changemaking: namely, collaboration and communication.

As a coalition, the CEC is dedicated to bringing together organisations behind a shared commitment to preserve and recover value from capital equipment, so driving forward the transition towards a circular economy. The principles of collaboration and communication therefore lie at the very heart of the ethos of the Capital Equipment Coalition, as it strives to develop learning and progress action, working to help make circular business models and operations the new normal for the industry.

So, recognising collaboration and communication as the way forward for the capital equipment industry — and for business in general — the CEC concludes this second learning document with a Call to Action.

The Capital Equipment Coalition Call to Action:

- The Capital Equipment Coalition aims to build on its achievements through 2020, operating under PACE. A key focus for the CEC going forward will be the exchange of specific insights that can facilitate rapid learning and accelerate the implementation of circular solutions.
- We, the CEC, encourage businesses in the production and supply of capital equipment goods to embark on their own journeys towards the circular economy. This learning document is intended to provide guidance for practical implementation and a summary of topics to consider.
- We invite companies in the capital equipment space to share with us their ideas on how to further build and disseminate the learnings and good practices, plus ways in which they might contribute towards this initiative. If you would like to discuss matters further, please reach out to us via email: capitalequipment@circle-economy.com.

4. PLEDGES

This section presents the pledges made by 9 leading businesses, first launched at Davos in January 2018. It describes the progress companies have made on their pledge and what next steps they are taking.

ASML



DAMENI

DELLTechnologies

enel



PHILIPS

VANDERLANDE



CONTEXT

ASML believes a circular economy model is essential to ensuring the future success and competitiveness of the semiconductor equipment industry. We are keen to play our part and already have initiatives that contribute to a circular economy. As a result of our products' modular design we ensure products in use at our customers can be upgraded to a higher performance level thereby extending their useful life. After use in the most advanced chip factories, we further extend the lifetime of our products by refurbishing systems and repurposing them for other customers and semiconductor environments. A well-maintained ASML lithography system has a useful life that is measured in decades and around 95% of systems produced by ASML over the lifetime of the company are still in use today. With regards to service and upgrade parts, we have started executing on initiatives to ensure modules can be restored and qualified to an as-new condition for re-use within our systems.

PLEDGE STATEMENT

Over the coming years, in collaboration with our customers and suppliers, we aim to transform the re-use of parts used 'as-new' in our systems, from pilot project to standard way of working and further develop opportunities, initially in our Mature Products & Services business. Hereby, we expect a significant decrease in the waste generated in our value chain. the next years, in collaboration with our customers and suppliers, we aim to transform the re-use of parts used 'as-new' in our systems, from pilot to standard way of working and further develop opportunities, initially in our Mature Products & Services business. Hereby we expect a significant decrease in the waste generated in our value chain.

PROGRESS MADE IN 2019

ASML works together with suppliers to remanufacture used system parts for all of our business lines and products, so these can be reused as if they were new parts (referred to 'As-New') in our modular designs. Our As-New modules, suitable for multiple product lifecycles, are now being integrated into our mainstream manufacturing lines.

For mature products, we extended our guaranteed service roadmap from 2022 to 2030 to support customers who are continuing to use the current PAS 5500 installed base. It is worthwhile to note that around 95% of all machines ever sold by ASML are still active in the field.

We are improving the reuse of packaging, locking and transport materials from the field and factory, aiming to return and reuse 80% or more in the next install or relocation. The concept is driven by an automated circular process, making the process sustainable and allows for scaling up the reuse of packaging. In 2019, around 1.5M kg of packaging materials were received for reuse. We are involving ASML manufacturing sites around the world to standardise best-practices and maximise the programme's impact.

NEXT STEPS IN 2020

- Our ambition is to increase the application of As-New modules in our systems. To this end, we are constantly investigating which modules can be integrated in the As-New program.
- Reuse of packaging started with our EUV systems, but we are now expanding the Return4Reuse programme into our DUV systems.
- In 2019, we set an ambitious target of cutting our amount of waste per revenue by 50% by 2025. Achieving this target requires a change in mindset.
- We are shifting our ways of working to become circular right from the start by, for instance, designing products and packaging for reuse, and buying services (performance) rather than physical products.
- Limiting waste is also a focus in our approach to real estate. For example, we are aiming for BREEAM certification for our planned new campus at Veldhoven. We ensure that as little as possible is thrown away during the building process, and materials are reused where possible.



CONTEXT

Network and Communication Equipment and Services: Cisco is the worldwide leader in IT. We help companies seize the opportunities of tomorrow by proving that amazing things can happen when you connect the previously unconnected. At Cisco, customers come first. We create long-lasting customer partnerships, identify customer needs, and provide solutions that create customer success. Cisco has been a sponsor of the circular economy since 2011.

PLEDGE STATEMENT

100% Product Return

- Provide product return pickup and transport at no cost for any customer worldwide upon request.
- Establish alternative commercial models that promote product return, including purchase trade-in, banked credit, leasing, and product-as-a-service.
- Offer comprehensive warranty, replacement, service and repair for all products to extend useful product lifetime and minimise obsolescence.
- Repurpose returned product, subsystems, components and commodities, including closed-loop return to new product manufacturing.

PROGRESS MADE IN 2019

In 2019, we continued to scale our circular economy programme. Cross-functional teams are working together to increase accountability for returns and to expand our channels to reuse products. We continue to invest in our systems and tools to facilitate our forward progress; and are using pilots to ensure these changes are meeting expectations before we bring them to scale.

Our progress in 2019 included:

- Introducing Circular Design Principles to reduce our resource impacts and improve our ability to repair and reuse hardware and materials from the very beginning of the design process. Our goal is that 100% of new Cisco products will incorporate these principles by 2025.
- Announcing plans for Cisco Refresh, our certified remanufactured equipment program, to launch a Repair Partners Network in Africa. By working with selected distributors to repair and restore Cisco hardware and make high-quality, refurbished technology accessible, especially for small and medium-sized organisations, the Network will help create jobs and a secondary life for equipment, saving resources and reducing waste.

We continue to provide customers with Smart Net Total Care with comprehensive warranty, replacement, service and repair for all products to extend useful product lifetime and minimise obsolescence. More than 99% of equipment taken back is reused or recycled.

More information on Cisco's circular economy programme is available on our [website](#).

NEXT STEPS IN 2020

In 2020, we will implement multiple ongoing projects to improve our tools and systems, as well as evaluating the results of pilots to identify opportunities to further accelerate returns and reuse. We will also continue to drive progress toward our goals in design and operations.

DAMEN



CONTEXT

In society today, sustainability is increasing as an important and essential subject. As a family-owned company Damen Shipyards has always taken a sustainable long-term view on its businesses. This includes ensuring the wellbeing of our personnel, the maritime eco-system in which we operate and the world as a whole. Additionally, Damen is assuming responsibility for developing and delivering solutions that add value in a sustainable manner throughout the entire value chain within the maritime industry. From its relatively humble roots as a Dutch shipbuilder, Damen has grown to become a full lifecycle provider of maritime solutions, ranging from design, build, service and maintenance, to repair and conversion in many market segments. Increasingly, the focus of Damen is on providing vessels with better sustainability characteristics. For example, by developing lower or zero emission vessels by applying alternative fuels, hybrid and fully electric power propulsion systems. The Damen philosophy is in delivering vessels based on integrating modular-, standardised- and proven designs, thereby using resources in an efficient manner. As an integrator of systems, Damen already does and will more actively align with sustainable and circular oriented partners in order to stimulate the transition process.

In general, ships are characterised by long lifecycles as a result of high initial capital investment and limited series or one-off production. Damen extends the value of its clients' existing and new assets, by maintaining vessels worldwide and extending their lifetimes through conversions, refits and refurbishments also called second life, while reducing the waste generated in its operations.

CONTEXT (CONTINUED)

Moreover, Damen continues in contributing towards a clean and circular industry, by providing insights for asset owners and showing the economic viability of sustainable solutions within the entire maritime ecosystem.

PLEDGE STATEMENT

- Full organisational adoption of the United Nations Sustainable Development Goals (SDGs) as a framework of reference for decision making.
- Developing a blueprint learning module for increasing employee awareness and skill in the field of circular marketing, sales, design, and procurement.
- Commercially offer the possibilities for asset owners to carry out second life operations.
- Developing services to assure end-of-life requirements are carried out in a responsible and circular manner, when necessary at the assets end of technical and economic life.
- Contribute to the development of indicators for the asset's sustainability and circularity level.
- Continuing fully closing the loop on lifecycle support to our clients by 2025. Therefore, digitalising Damen-built vessels to gain insight into the full lifecycle of the vessel and advice on optimal use to extend asset lifetime.
- Expanding the green passport services of our portfolio and focusing on creating this service as a standard for our vessels.
- Last but not least, secure and maintain last year's Circularity statements.



CONTEXT

The founding concept of Dell was democratising technology to help advance human progress on a global scale. Now, technology is more accessible, more connected and more powerful than ever before – and the progress has been incredible. Yet, as we all know, there is so much more to do. And at Dell Technologies, we are just getting started. Sustainability is central to this vision of making our progress real, and a big part of that is our efforts to accelerate adoption of the circular economy. We want to eliminate the concept of waste – rethinking, redesigning, reusing and recycling our way to a better future.

PLEDGE STATEMENT

As part of Dell Technologies' Progress Made Real Plan, we set ambitious goals for 2030, including:

- For every product a customer buys, we will reuse or recycle an equivalent product;
- 100% of our packaging content will be made from recycled or renewable materials;
- More than half of our product content will be made from recycled or renewable materials.

In support of this goal, Dell Technologies pledges to actively take back equipment of any condition and will assume full control to ensure all materials are repurposed in a responsible way.

PROGRESS MADE IN 2019

Where do we stand now?

- We have recovered more than 2.1B pounds (950M+ kg) of used electronics since 2007.
- We have used 100M pounds (45M+ kg) of sustainable materials in our products since 2013. This includes closing the recycling loop by turning plastics from used electronics into new product components (125+ models) and recovering rare earth magnets from old hard drives and recycling/reforming them for use in new hard drives. Dell was the first to accomplish both of these innovations.

NEXT STEPS IN 2020

With our new 2030 Progress Made Real goals in place, we will accelerate our shift to the circular economy.

We will continue to focus on expanding our services and scaling our usage of recycled-content materials in both products and packaging. We will also continue looking at new ways to structure our business offerings to maximise the efficient return of materials to keep them circulating – either through refurbishment or recycling.



CONTEXT

Enel has made the circular economy a driver of its strategy and is developing systematically concrete initiatives across different business lines.

The focus on renewable energy is an important pillar of the circular economy and combined with electrification enables the shift towards zero emission models in sectors like mobility, heating and cooling, contributing to the objective of decarbonisation. Moreover, together with other technologies related to electric mobility, energy efficiency and network digitalisation enable a sustainable and innovative transformation of the energy system in line with our vision of a circular city.

In order to be fully circular and sustainable, we are applying a circular approach to manage our asset considering all the lifecycle, starting with design and construction phases (e.g. focusing on land use, impacts of natural resources and local communities during the construction of renewable power plants) and continuing until the decommissioning (e.g. our smart meters, already installed globally, are made with recyclable materials, mainly plastic and copper and are currently managed in a responsible way towards recycling and reuse).

PLEDGE STATEMENT

- Enel aims to achieve, by 2022, a 60% share of renewables on total capacity. It will be developed according to a sustainable construction site model and the principles of circular economy (focusing on renewable energy used in the construction, water saved or reused within the worksite and minimisation of waste produced).
- By 2022, Enel will achieve nearly 47M smart meters installed. Therefore, it will be necessary to manage the end of life of old smart meters, recovering recyclable materials thus reducing impact on new resources. Furthermore, Enel is moving forward on applying a circularity-by-design approach to the network devices development process. This will ensure a 'closing the loop' strategy with the possibility to reuse material recovered from the disposal of old devices, to be reintroduced on the production supply chain of brand new grid components.
- By 2022, Enel X will achieve globally nearly 736,000 recharging points for electric vehicles. Through its boosting programme, Enel X will continuously improve the circularity of this infrastructure with innovation projects on key aspects such as the recovery and reuse of spare parts at the end of life and the use of recycled material in inputs.



CONTEXT

We are passionate about offering secure, reliable and future-proof networks and services, enabling people to be connected anytime, anywhere, whilst at the same time creating a more prosperous and cleaner world.

PLEDGE STATEMENT

KPN is implementing a programme to reach its ambition of having close to 100% circular operations by 2025. For major parts of our business and throughout the lifecycle of our equipment and products we are looking for circular solutions, focusing on reducing the use of scarce virgin materials, optimising and extending the lifetime of our products and ensuring a high-end second life. This will reduce residual waste to an absolute minimum in our operations. Our scope will include network equipment, office facilities and customer premise equipment.

PROGRESS MADE IN 2019

For inflow of materials, we are in the process of improving the circular design of 10-20 KPN products. In 2019, we started using product passports based on Life Cycle Analysis. We collaborate with our suppliers and value chain partners to improve circular design and material impact. We have improved the circularity of following products: two types of TV receivers, a remote control and a street cabinet. We have also introduced smaller and modular packaging in the consumer market. Finally, we now also incorporate circular requirements in our Requests for Proposals.

For the outflow of materials, 75% of the weight of equipment and materials was reused or recycled in 2018. Various actions are executed to improve the value chain impact and reduce waste towards 2025. For example, we introduced a trade-in offering for mobile phones. These phones are refurbished for reuse or used for component harvesting.

NEXT STEPS IN 2020

In 2020 we will continue to execute on our roadmap. On the inflow side we will leverage our impact on circular economy via the industry-wide initiatives as the Joint Audit Cooperation (JAC) and the International Telecommunication Union (ITU). We will expand the number of product passports as a basis for performance dialogues with our suppliers. Furthermore, we will make a heatmap of critical raw materials in our supply chain.

In our business-to-consumer market we continue to work towards a closed-loop supply chain. For operations we focus on continuous improvement of reuse and recycling of our outflow.



CONTEXT

Lely is working towards a long-term, sustainable, enjoyable and profitable future in the agricultural sector. The company develops high-quality robots and data systems, which put the cow first, and are designed to improve animal welfare as well as the flexibility and productivity of dairy farms. Lely is a leader in the worldwide sale and service of automated systems to successive generations of dairy farmers. Lely is continually inspiring its employees to offer customers innovative solutions, and act as trusted partners for long-term advice and support.

PLEDGE STATEMENT

For Lely the biggest impact we can create is by making the processes at our customers more circular. At Lely we aim to develop a new manure treatment system by 2025 that will nearly close the mineral loop at dairy farms and reduces the CO₂-eq emissions by 7% per cow.

We have a programme running in which we reuse, re-furbish, repurpose and recycle our returned milking robots. By 2025 we will expand this programme to all capital equipment returned to Lely.

PROGRESS MADE IN 2019

Contributing to the emissions challenges dairy farms are facing today, but with a long-term ambition to close the mineral loop on farms, we speeded up the development of new manure treatment system and aim for launch in 2020.

NEXT STEPS IN 2020

- Set up ambitious sustainability programme, to gain focus on various sustainability topics and to speed up and increase circularity of Lely's production process as well as on Lely customers' dairy farms themselves.
- Launch open trader platform, for refurbished and secondhand Lely robots – create trust and acceptance to activate new customers to opt for robotisation.
- Expand and further roll-out Taurus refurbishment program.
- Launch new manure treatment system which will dramatically reduce emissions on farms.



CONTEXT

Royal Philips is a leading health technology company, focused on improving people's health and enabling better outcomes across the health continuum from healthy living and prevention, to diagnosis, treatment and home care. As a leader in innovation, Philips takes an approach which integrates systems thinking and looks beyond the linear 'take, make, dispose' model to a circular model of regenerative product design, new business models, reverse logistics and enabling technologies. As part of its Healthy people, Sustainable planet strategy, Philips has a target to deliver 15% of total revenues from circular solutions by 2020. Over the last decade, Philips has returned some 7,000 tons of refurbished medical imaging equipment to the market and incorporated 6,000 tons of recycled plastics into its new consumer products.

PLEDGE STATEMENT

By 2020, Philips will fully close the loop on all large medical systems equipment that becomes available to us; and we will continue to expand these practices until we have covered all professional equipment. By 'closing the loop', we mean that we will actively pursue the trade-in of equipment such as MRI, CT and Cardiovascular systems and we will take full control to ensure that all traded-in materials are repurposed in a responsible way.

PROGRESS MADE IN 2019

In 2019, we have seen the results of a global roll-out of our Trade-in functionality. Many additional Philips systems are offered back to us. We have also made good progress in reversed logistics, adding global return flow from markets that we did not have before. We have established global purchasing requirements for local recycling, allowing us to repurpose responsibly and efficiently. In addition, we have expanded our parts recovery activities, allowing us to re-use more.

NEXT STEPS IN 2020

We are on track to have closed the loop in large medical equipment in all of our markets.

VANDERLANDE



CONTEXT

Vanderlande is the global market leader for value-added logistic process automation at airports, and in the parcel market. The company is also a leading supplier of process automation solutions for warehouses. To minimise the ecological footprint of the company's and our customers' systems and maximise the effectiveness of its operations, Vanderlande utilises a three-phase programme to support its interests. Each phase is an amalgamation of themes, ambitions, initiatives and a corresponding timeline. Themes include Cradle to Cradle® and circular economy principles aimed to offer truly circular services. With this in mind, it is already developing tangible prospects to upgrade products, facilitate refurbishments, offer leases on a pay-per-use basis, and explore other business models, as managed services. Vanderlande plans to progress steadily through each phase and will gradually enhance the capabilities of all employees in realising this common goal.

PLEDGE STATEMENT

By 2021 Vanderlande will successfully launch new solutions and services that fully close the loop by utilising innovative business models, such as the recently launched FLEET concept. We will report our progress on this journey based upon GRI reporting principles and to set our management goals and target.

PROGRESS MADE IN 2019

We have learned valuable lessons about the dos and don'ts in creating awareness and acceptance of circular business models in the airports market segment. We have successfully launched our FLEET solution, yet, creating market acceptance of our new concepts has proved to be hard work. Based on the co-creation sessions started in 2018, we have come up with adjustments in the circular business models to fit certain requirements of the market, while keeping the circularity principles. The combination of strong leadership and supporting, listening and collaborating with our customers, to understand their specific challenges, is critical. Early adopters are essential to build credibility and factual evidence. The FLEET trial at Dallas Fort Worth (DFW) Airport (<https://www.youtube.com/watch?v=YWSSFMHHkNY>) is an illustration of these efforts.

A joint programme with the academic world has been initiated and started to build more theory and objective models and benchmarks to support the specific circular business models using real-world business-use cases as encountered by Vanderlande. The programme includes the development of sustainability assessment methods integrating product design and business model design of capital equipment. This collaboration with academia is critical for these kinds of transitions, and we are confident that this collaboration will give us new insights for starting the right dialogue with customers and strategic decision-making in our company.

In our other market segments, warehousing, parcel and post, we have made important steps in standardising our solutions with what we call 'building blocks', where we are moving from customised engineering to customised solutions with standard technology building blocks. This has been proven to lower production, procurement and installation costs, and to simplify the product lifecycle management. It also allows for easier and less expensive repair, refurbishment and recovery processes. These factors support the journey to close the loop and embed circular design principles into our products. For example, in 2019 we started to re-design the industrial trays of our automated case picking to make use of 100% of post-consumer polypropylene, for which we expect to source over 500,000 kg of recycled plastic in 2020 and 2021. We will report on our progress by early 2020 by releasing a new GRI compliant Sustainability Report.

NEXT STEPS IN 2020

In 2020, the release of the GRI-compliant Sustainability Report will set new targets for 2025 along with longer-term targets (2030-2035). We are exploring new ways of creating circular business opportunities in each market segment in which Vanderlande is active; and will continue to involve key customers and their stakeholders. We will continue to promote internal awareness and embedding of circular practices in our daily routines by training, auditing on adherence, along with improved reporting. We will also continue working with our platform approach, to continue standardising our solutions in different market segments, to simplify the processes to close the loop.



PACE

PLATFORM FOR ACCELERATING
THE CIRCULAR ECONOMY