



Closing the Circle

Welcome to the panopticon on
circular economy at V-ZUG

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clickable elements



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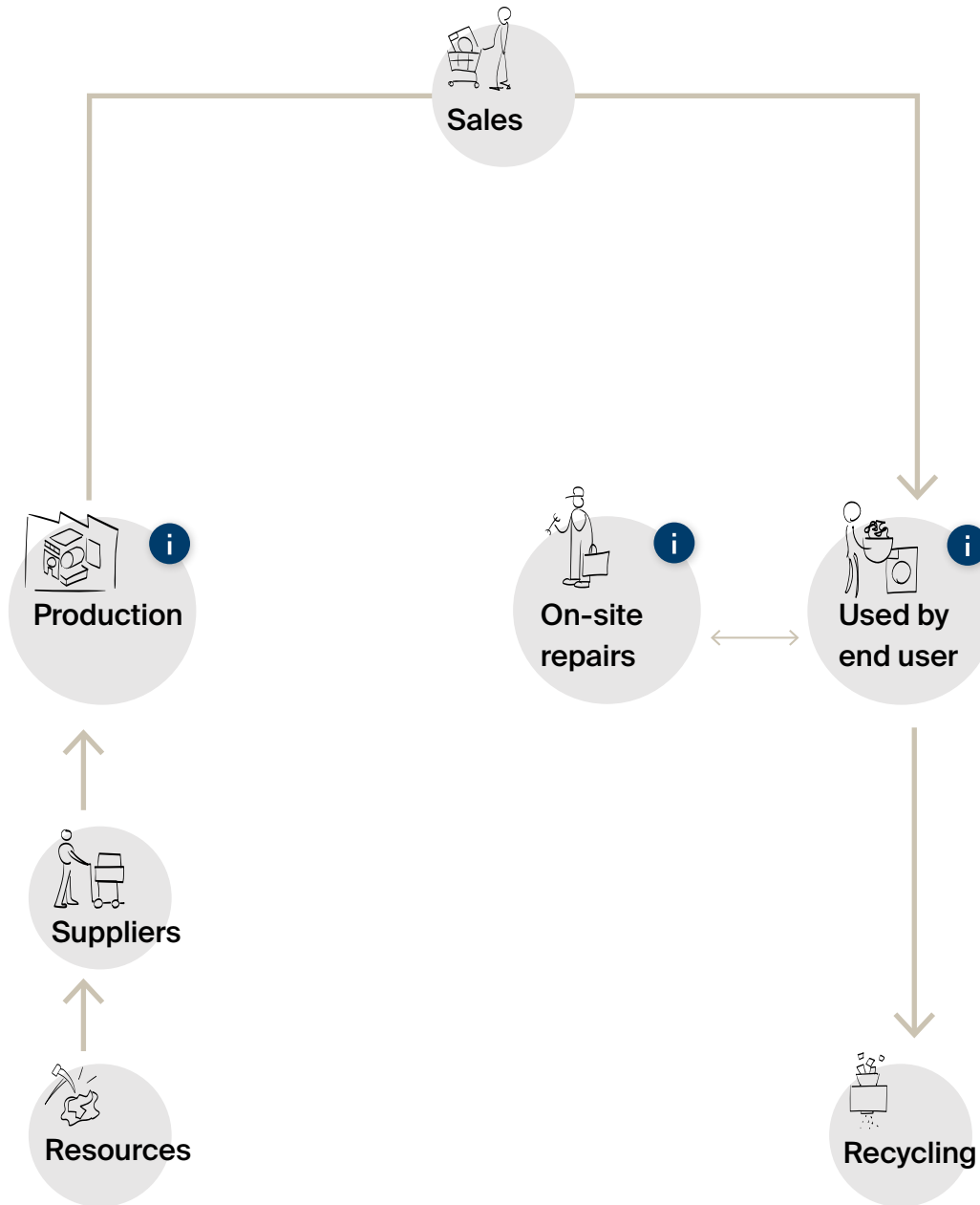
Closing the Circle

Perspectives

Yesterday

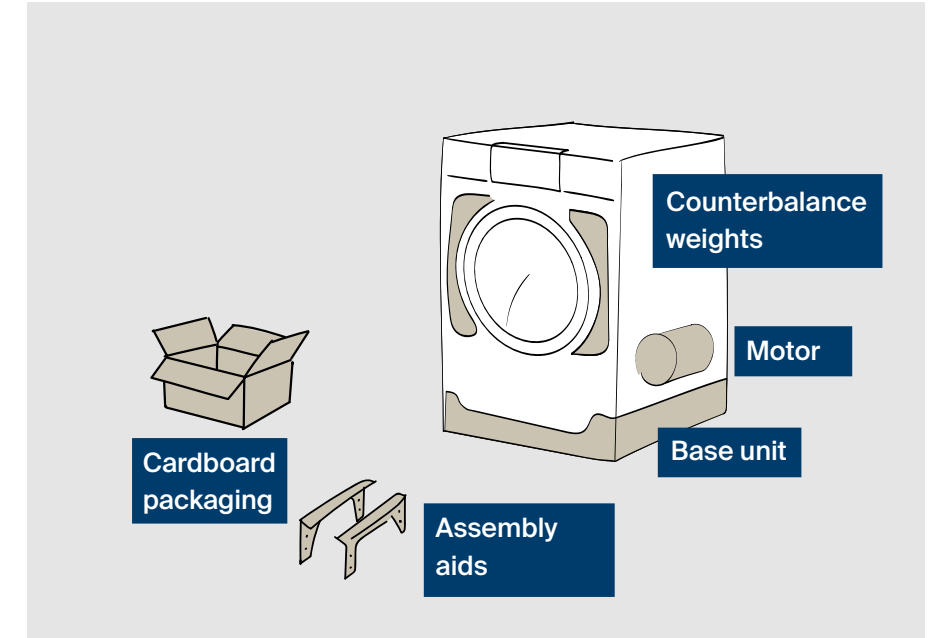
Today

Tomorrow



The recycling economy

The prevailing linear economic model is characterized by a very high requirement for resources and energy. It involves removing natural resources from the earth (take), creating products from them (make) that are subsequently used, and eventually disposing of them (waste). This system has a severe impact on our environment and our planet's finite resources, which is why approaches such as repairing products and recycling materials seek to counteract this. Thanks to Switzerland's functioning recycling system, we can talk of a recycling economy. Contaminants are correctly disposed of, and valuable materials are retained wherever possible. But in many cases (plastics, electronics and mixed materials), it is only possible to downcycle them or recycle them thermally in waste incineration plants. This system therefore still has plenty of potential to maintain valuable resources in tip-top condition.



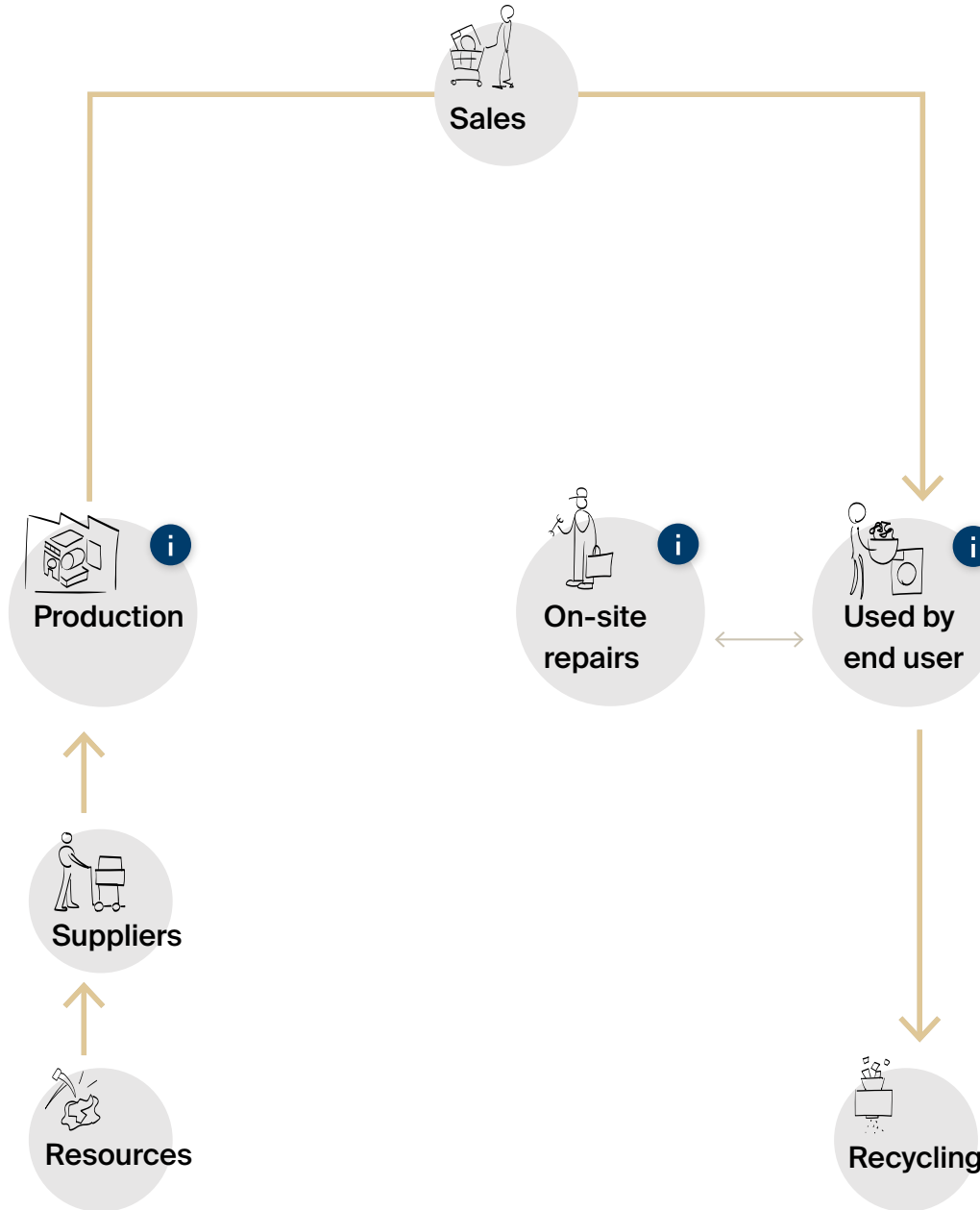
Closing the Circle

Perspectives

Yesterday

Today

Tomorrow

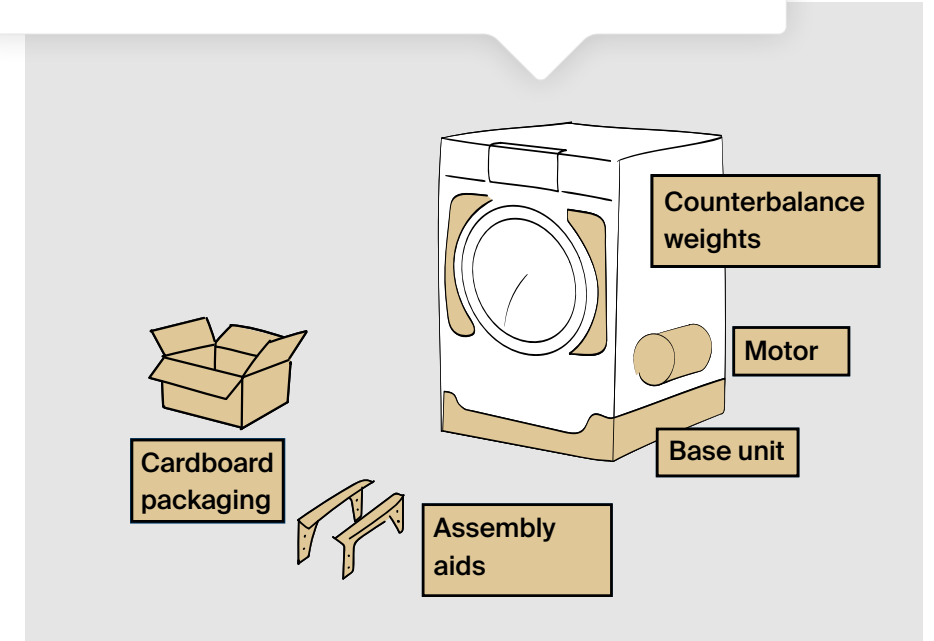


The recycling economy

Untapped potential

In the recycling economy, unwanted and faulty products end up being recycled in their entirety. The recycling rate is already high, but still offers much potential (fridges 85%, large appliances 78%, source SENS 2021)

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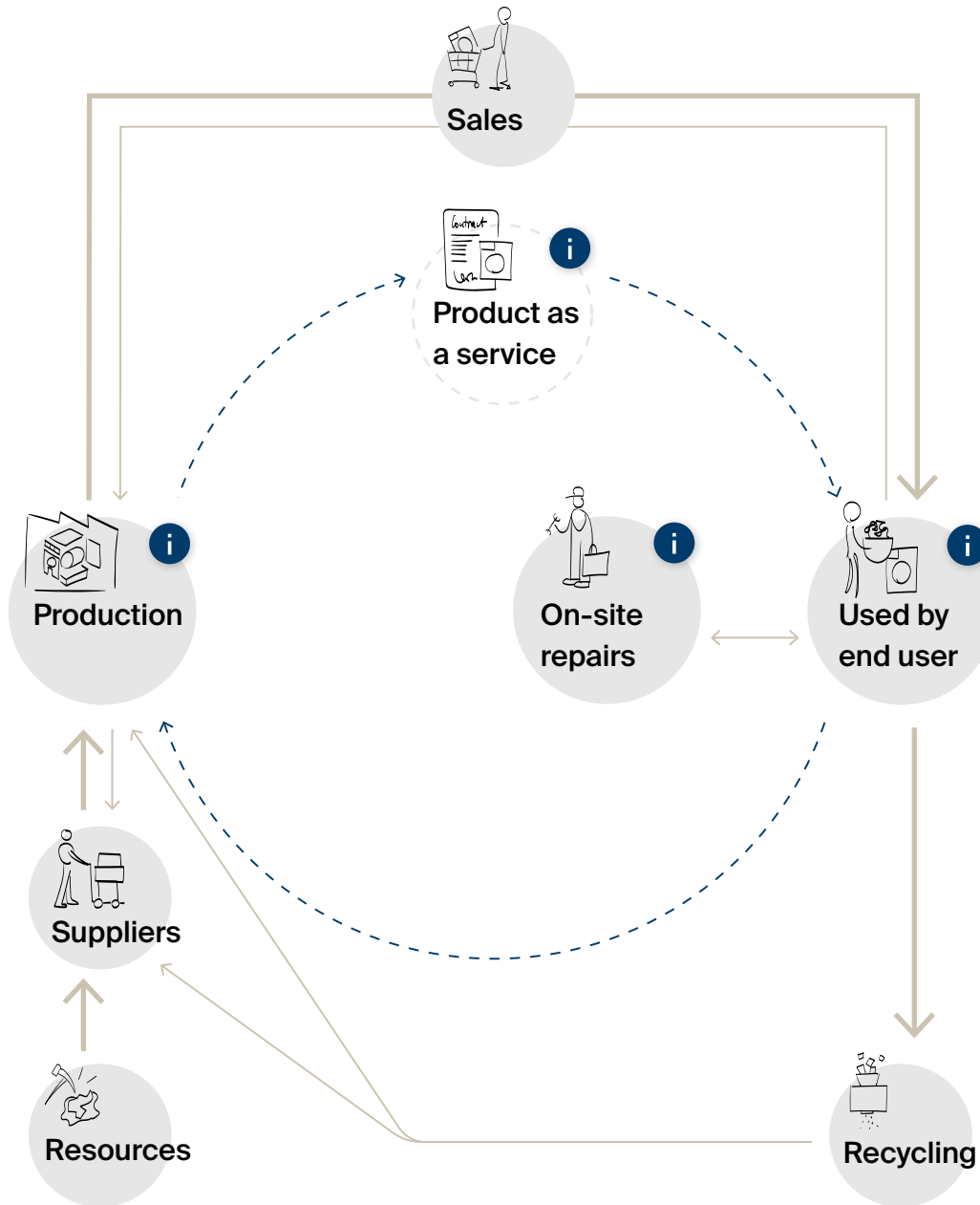
Closing the Circle

Perspectives

Yesterday

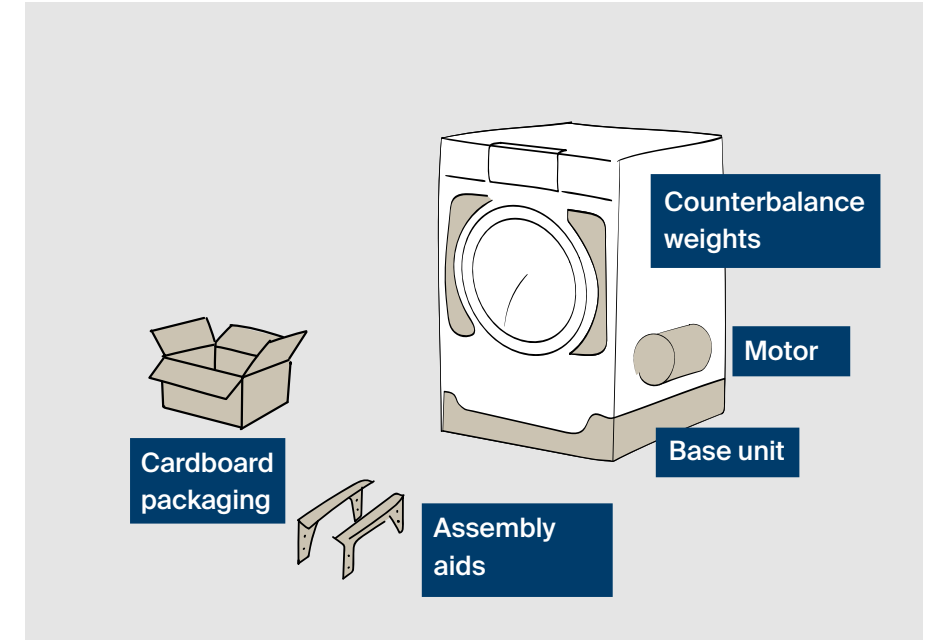
Today

Tomorrow



Moving from recycling to a circular economy

V-ZUG is adopting various approaches to move towards a resource and energy-saving circular economy. For instance, alongside sales it is also providing products as a service. Customers benefit from all-round service and V-ZUG retains responsibility. The major benefit here is that V-ZUG remains the owner of the appliances, and can take them back after the end of the contract period. Approaches such as reusing or reprocessing products, components or parts can then be applied, thereby saving resources and energy. To make a contribution here and now, V-ZUG is working with its recycling partners and other sources of returns (production, service technicians, sales partners, etc.) to keep components and parts from old appliances in circulation for longer in tip-top condition.



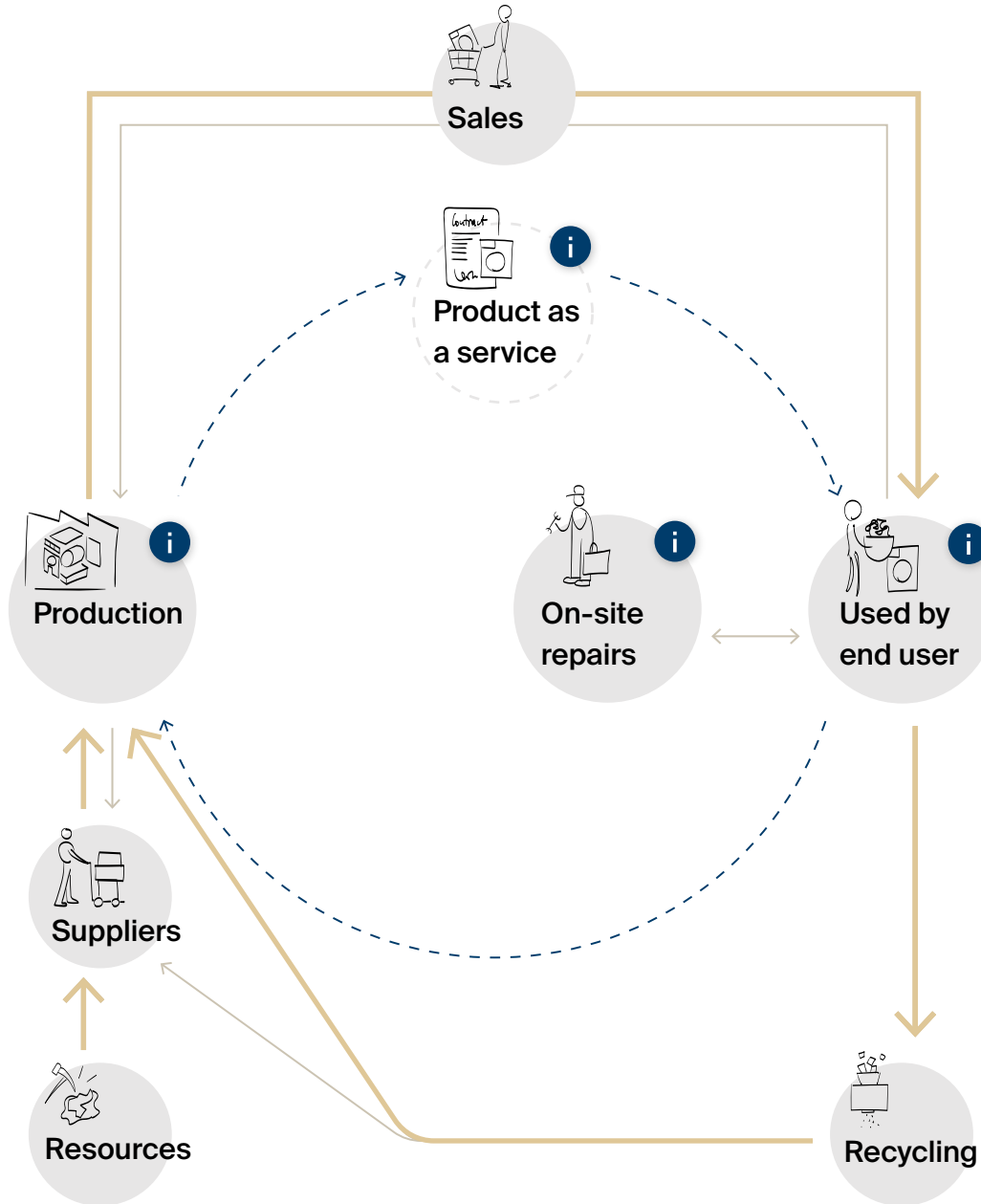
Closing the Circle

Perspectives

Yesterday

Today

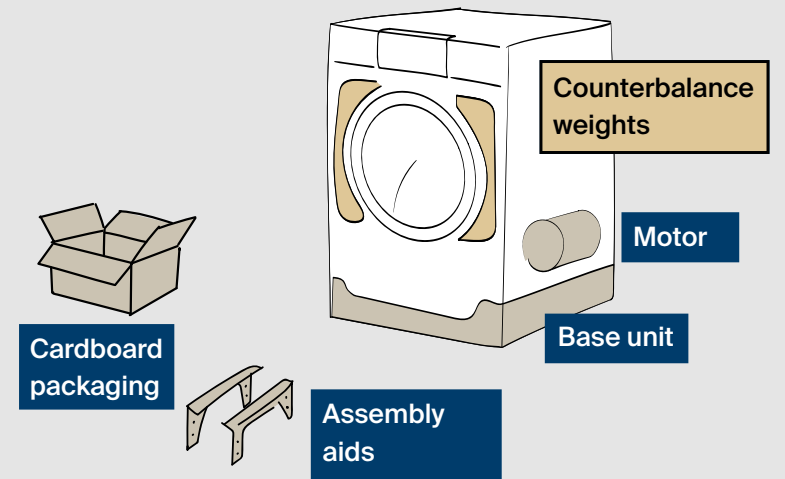
Tomorrow



Moving from recycling to a circular economy

Counterbalance weights (cast iron)

Counterbalance weights are returned to the factory in Zug via recycling partners who remove them from V-ZUG appliances. The weights in V-ZUG washing machines have remained structurally identical for a long time, and are made of robust cast iron. This means they can be directly reused, and there is no need to draw on new resources. Transport routes are also considerably optimized. The supplier of the primary raw material is based over 1,000 km from Zug, whereas the recycling company is just 60 km away.



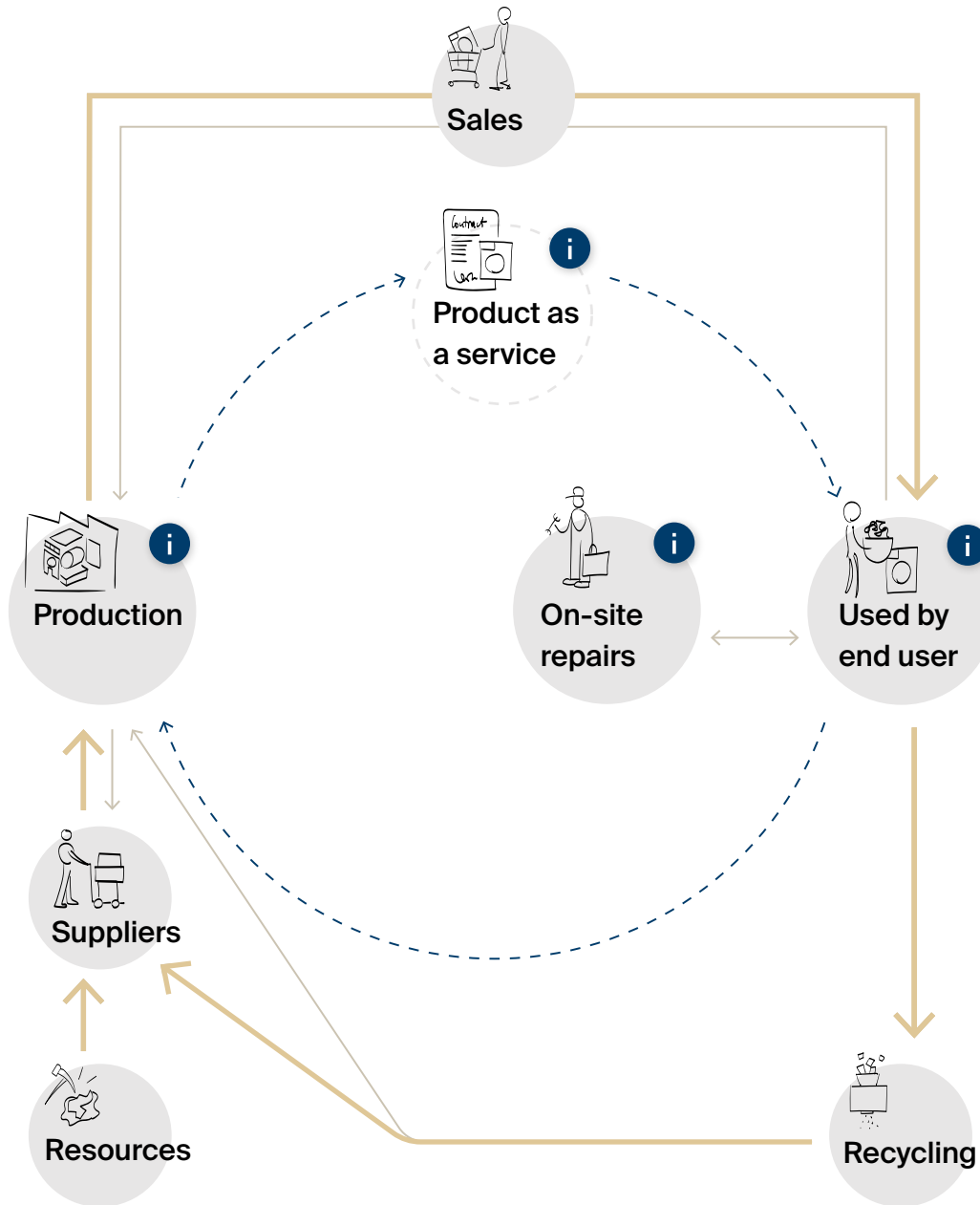
Closing the Circle

Perspectives

Yesterday

Today

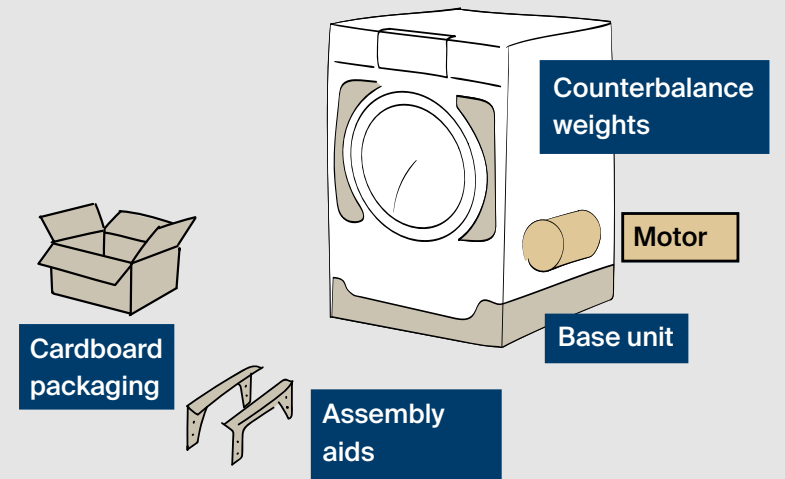
Tomorrow



Moving from recycling to a circular economy

Motors (electronics)

The motors in washing machines are designed to have a very long service life. Washing machines are often sent to be recycled when their motor could still operate for a considerable number of hours. We are currently ascertaining whether and how these motors could be fitted into new machines following a professional inspection process – giving customers consistent quality and warranty coverage. In any case, this approach is also suitable for secondary replacement parts for "product-as-a-service" appliances, for which we retain ownership.



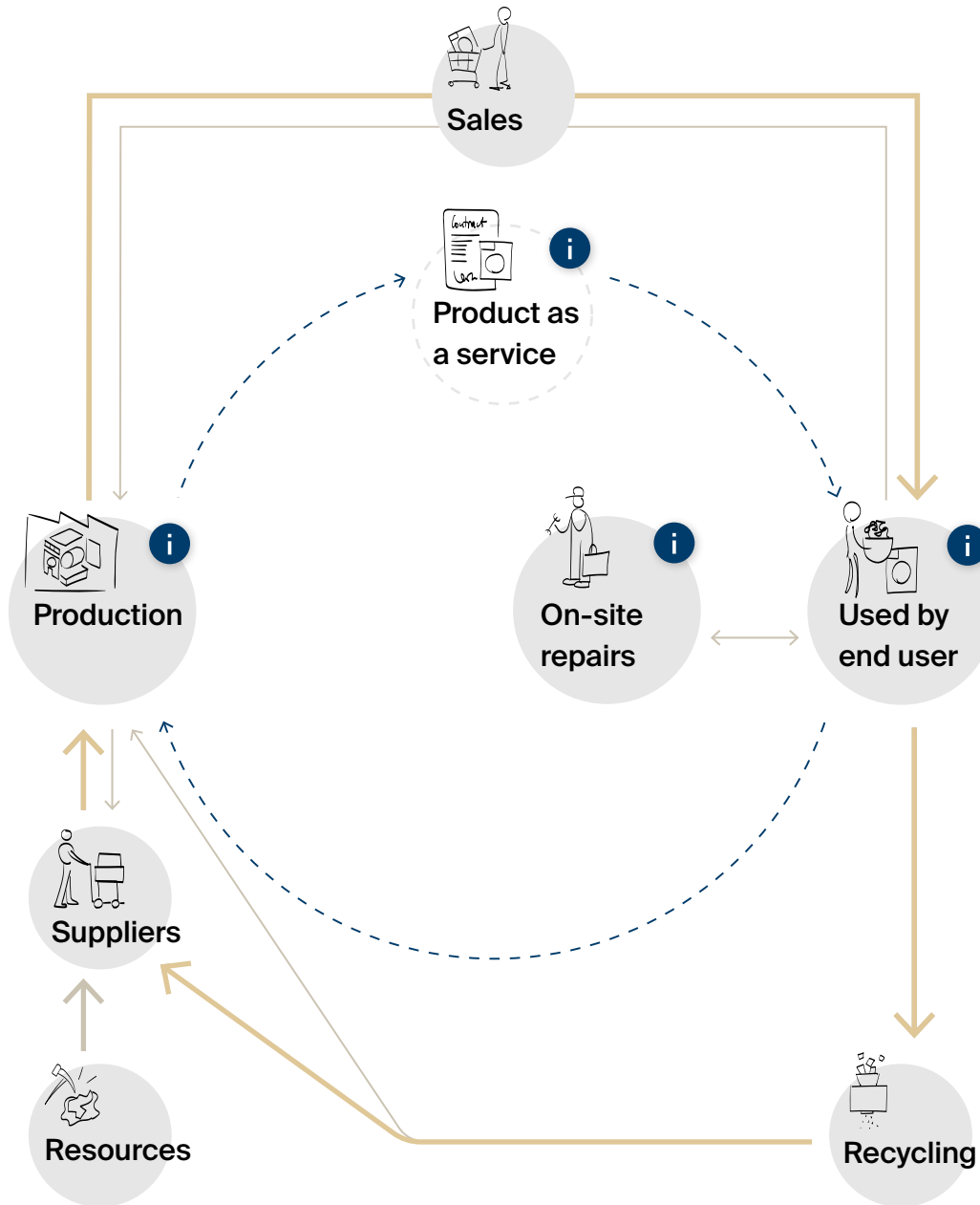
Closing the Circle

Perspectives

Yesterday

Today

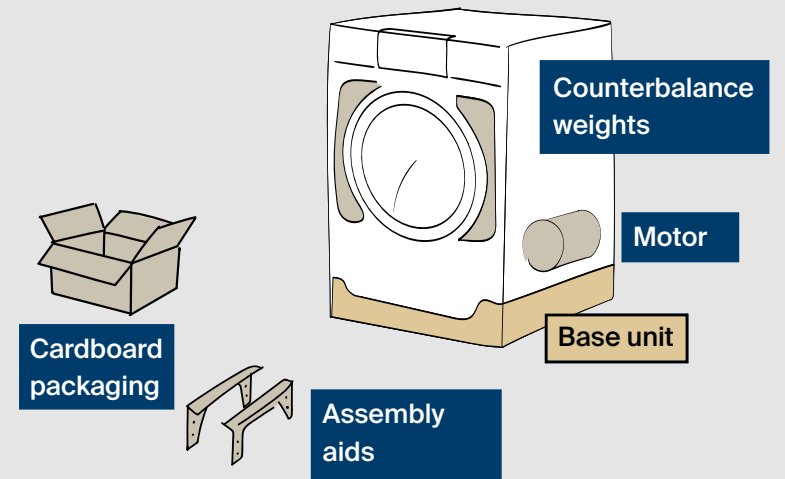
Tomorrow



Moving from recycling to a circular economy

Base Unit (plastic)

Dismantled washing machine base units (made of polypropylene reinforced with 40% calcium carbonate) could be used by our supplier in Bremgarten (30 km away) as the primary material for manufacturing new base units. New base units are delivered to us several times a week and, on the return trip, the supplier could transport used base units and shred them in its plant. This would enable resources to be directly kept in circulation, and no primary resources would be needed. We are currently investigating where and how V-ZUG could ensure base units were returned and how this approach could be implemented.



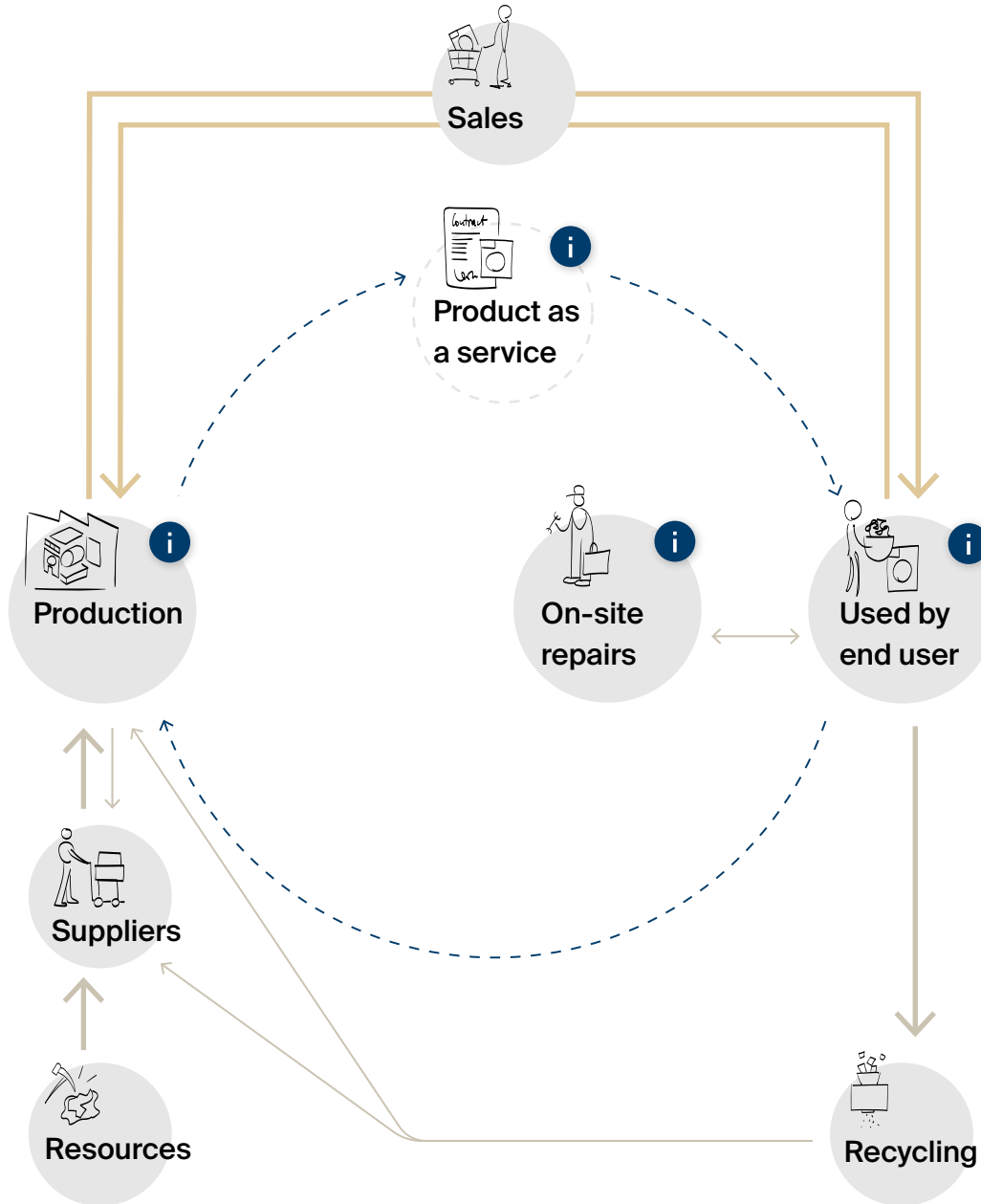
Closing the Circle

Perspectives

Yesterday

Today

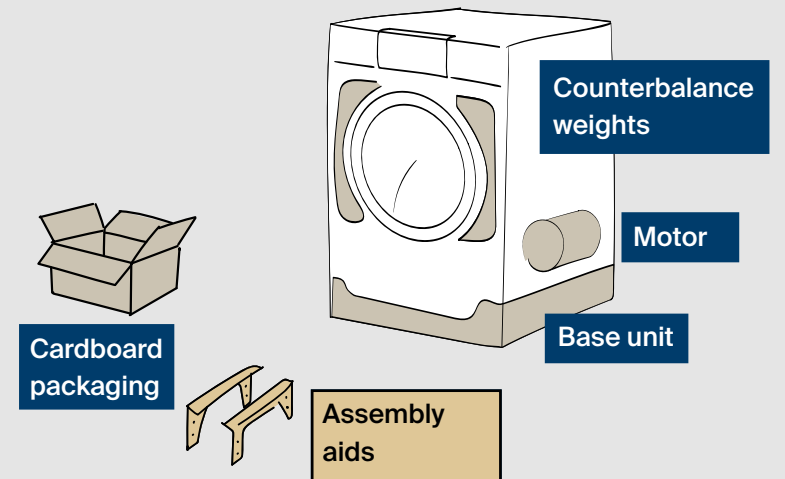
Tomorrow



Moving from recycling to a circular economy

Assembly aids (metal and plastic)

When appliances are installed, assembly aids are sometimes needed. Since this is not clear in advance, they are supplied with every product. If these parts are not required, they are now returned by our service technicians. In this way, the parts can be directly returned to the warehouse. We are currently looking at how we can ensure they are returned when appliances are installed by specialist external partners.



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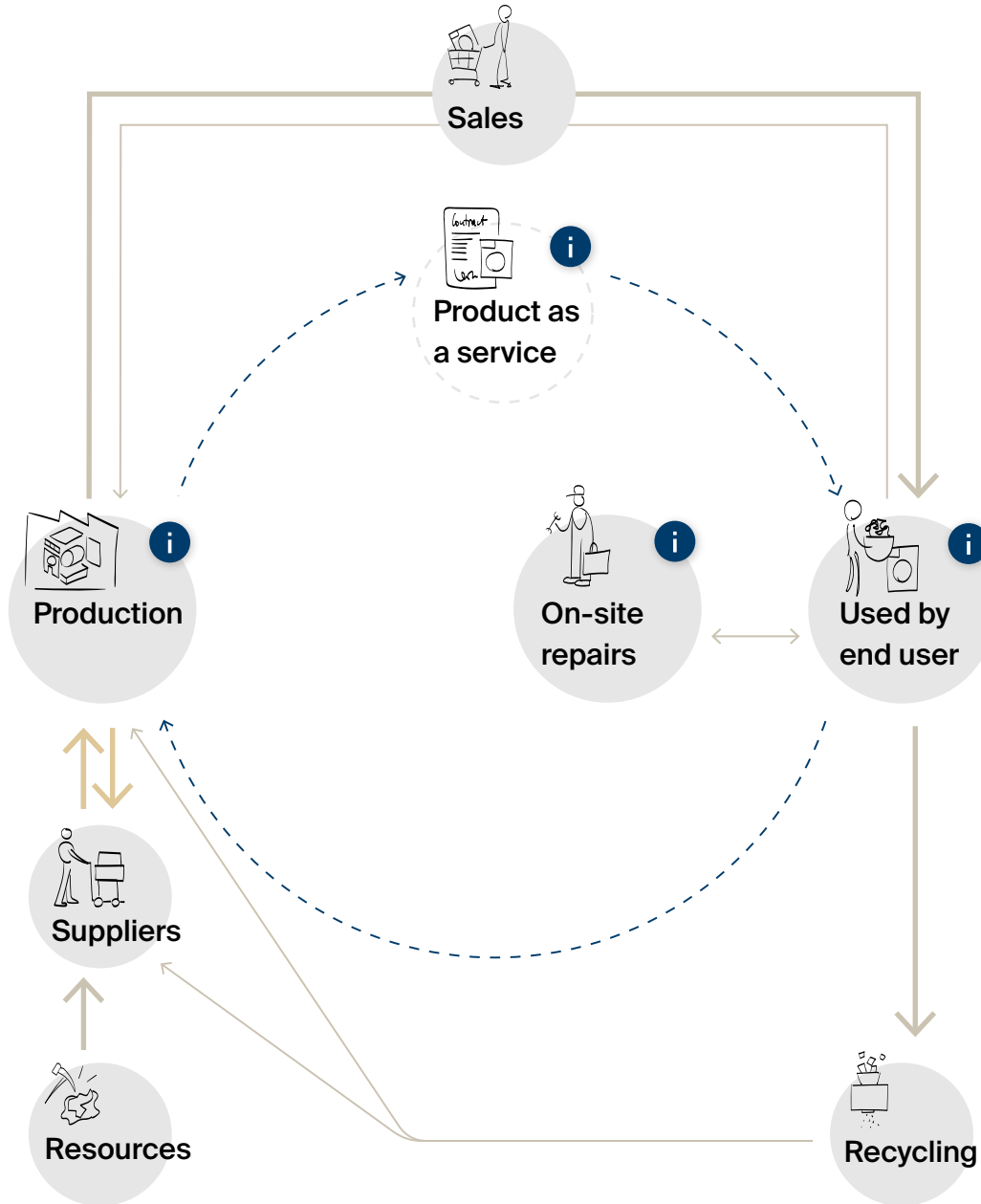
Closing the Circle

Perspectives

Yesterday

Today

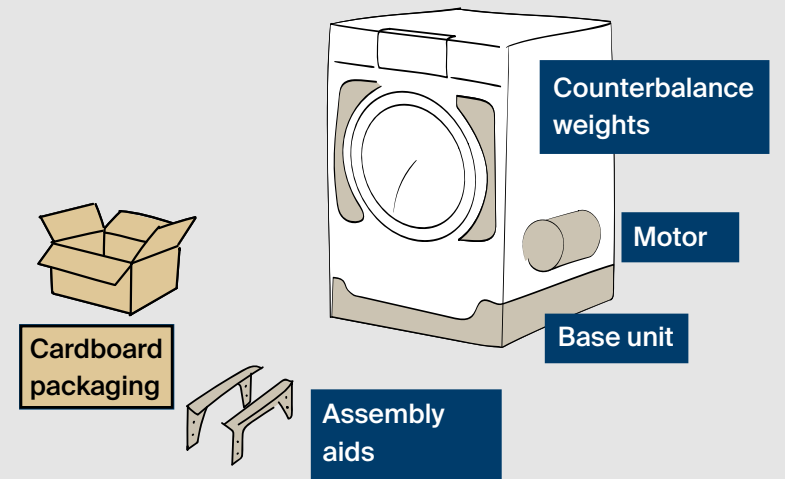
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Moving from recycling to a circular economy

Packaging (recycled cardboard)

Our cardboard packaging supplier delivers new packaging for our appliances (70% recycled cardboard) three times a week, and at the same time we fill the truck again for the return trip with cardboard that has accumulated in our factory. After being suitably processed, this is once again used as the primary raw material for our recycled packaging. This results in a circular flow between V-ZUG and its supplier (50 km away). Virtually no resources go to waste, and transport is optimally utilized.



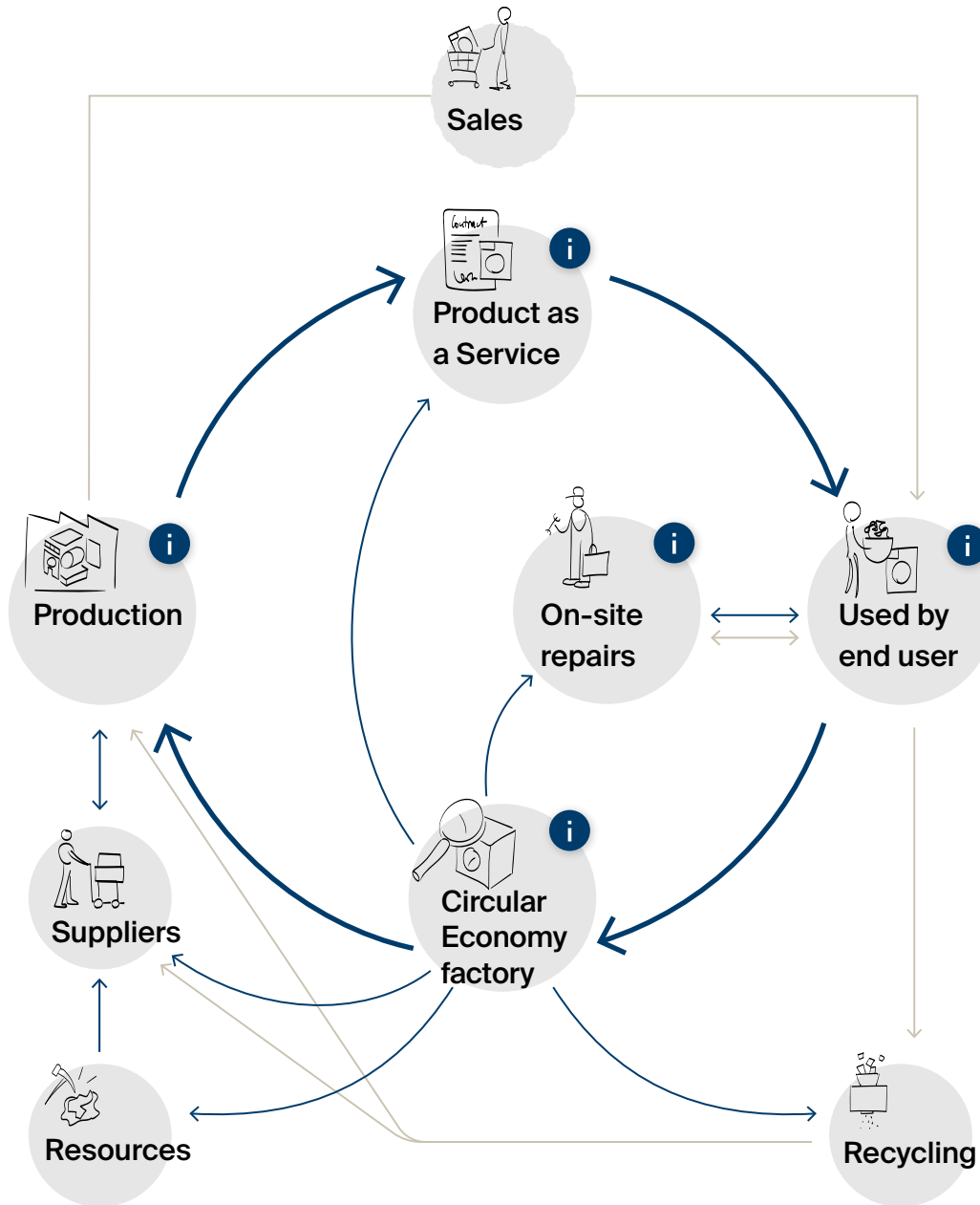
Closing the Circle

Perspectives

Yesterday

Today

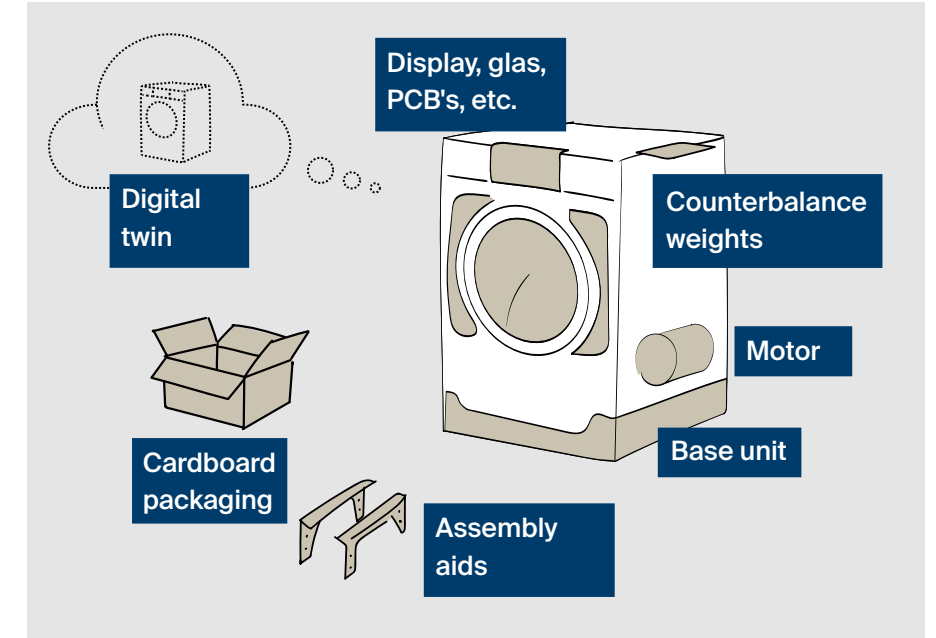
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"Closing the circle" vision – the circular economy is implemented

The majority of V-ZUG appliances are no longer sold, but instead made available in the form of products-as-a service. These appliances remain the property of V-ZUG and are therefore returned to the factory in Zug, where they are triaged (examined and sorted). The aim is to integrate appliances, components and parts into a circular flow and keep them there for as long as possible, in order to save resources and energy. To ensure this happens, we want to convert our production facilities into a manufacturing plant that is fit for the circular economy.

Unlike the linear economy, this model is no longer predominantly based on primary resources, but instead on resources that have already been exploited in the past, integrated into our products. The circular economy therefore decouples economic success from resource consumption, thereby contributing to a reduced environmental footprint and a sustainable economy and society.



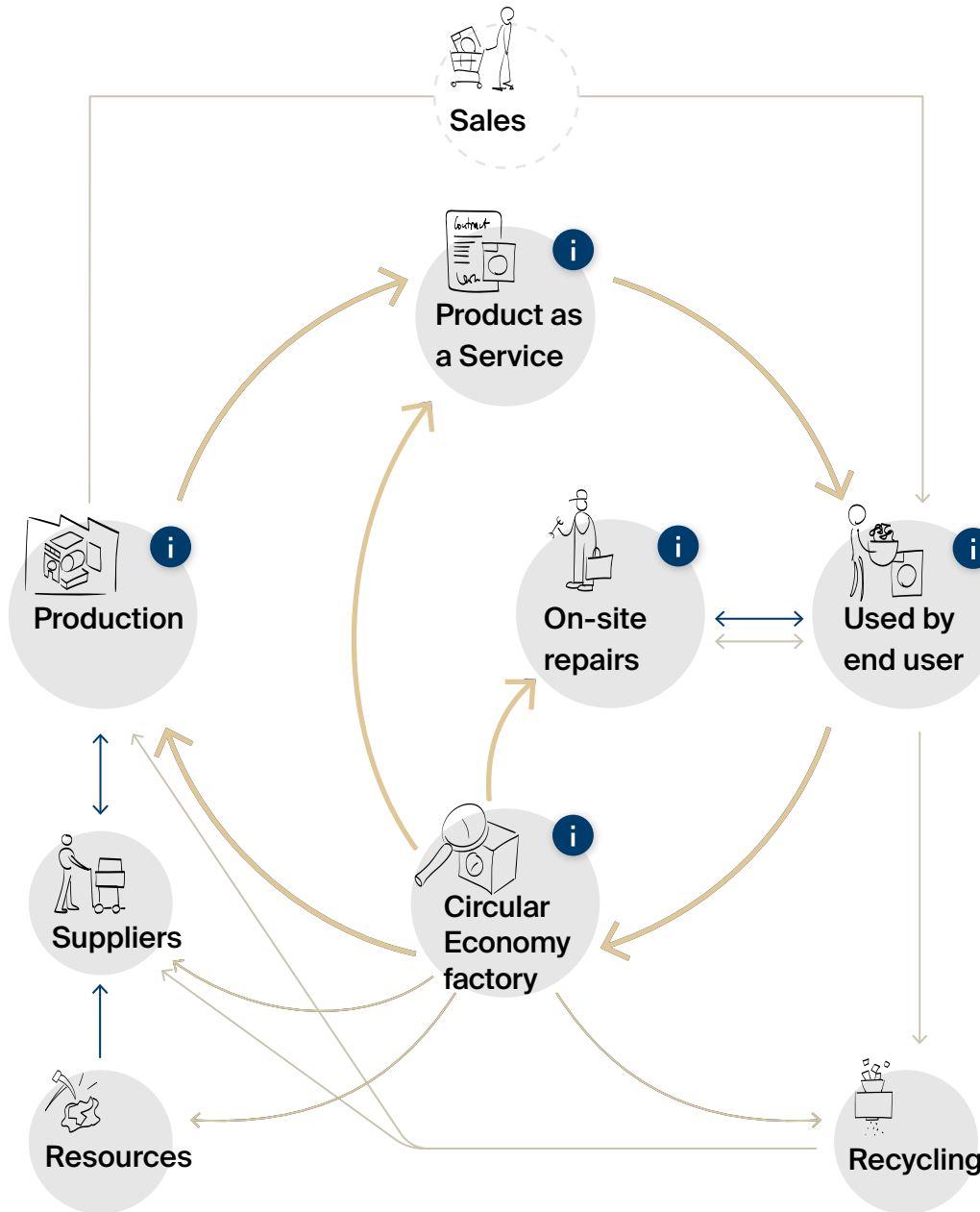
Closing the Circle

Perspectives

Yesterday

Today

Tomorrow

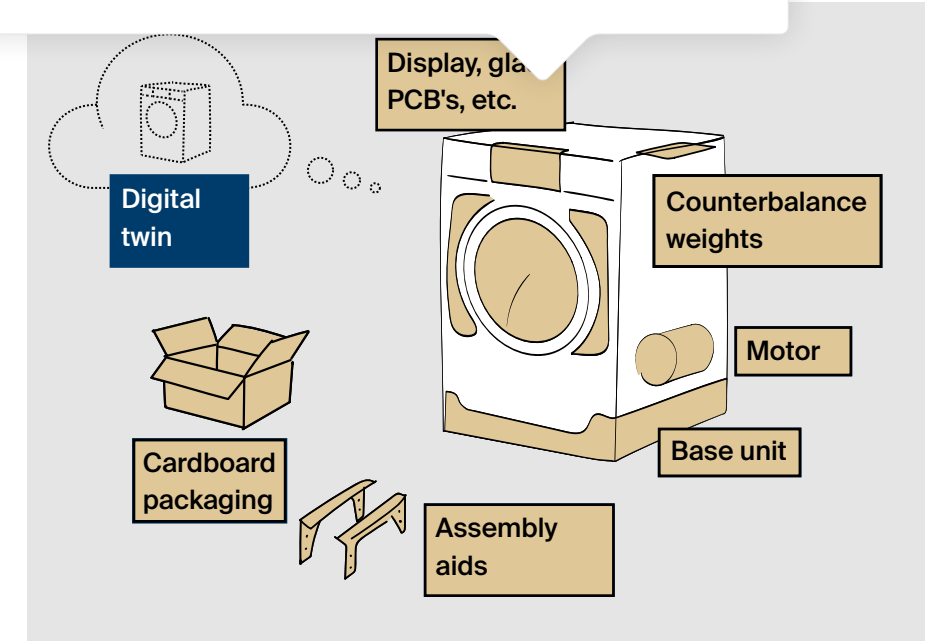


The recycling economy

Exploiting available potential

In the circular economy, appliances will no longer end up directly in a recycling facility, but will be channelled via the closing the circle factory. All resources will be triaged to establish whether and how they could be reused. The aim is to keep all appliances, components and parts in circulation for as long as possible in tip-top condition. Only when individual parts can no longer be repurposed will the dismantled materials be transformed into primary materials once more via a recycling facility.

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V-ZUG is continuing to invest significantly in Switzerland as a workplace and scientific hub. With the ongoing site transformation and modernization of the production plant at Zug and also the new refrigeration production site in Sulgen, we are increasing operational efficiency and productivity in order to ensure sustainable and competitive production in Switzerland. The accompanying automation serves as a basis for substantial and profitable growth in the V-ZUG Group, both in Switzerland and abroad.

Production





Product-as-a-Service

Alongside conventional sales in the B2B business, V-ZUG offers a laundry room solution in the form of a service. This essentially involves using services instead of owning products. This type of product-as-a-service model contains everything needed to enable B2B customers to provide laundry rooms equipped to meet their own individual needs. In return, V-ZUG receives fixed rates, that includes installation, service & support, appliance exchange and return. In so doing, V-ZUG is extending its responsibility for appliances across the entire product lifecycle. If a problem crops up with the appliances, tenants of our B2B customers can contact V-ZUG directly, removing the need for any third-party involvement.

Advantages of product-as-a-service

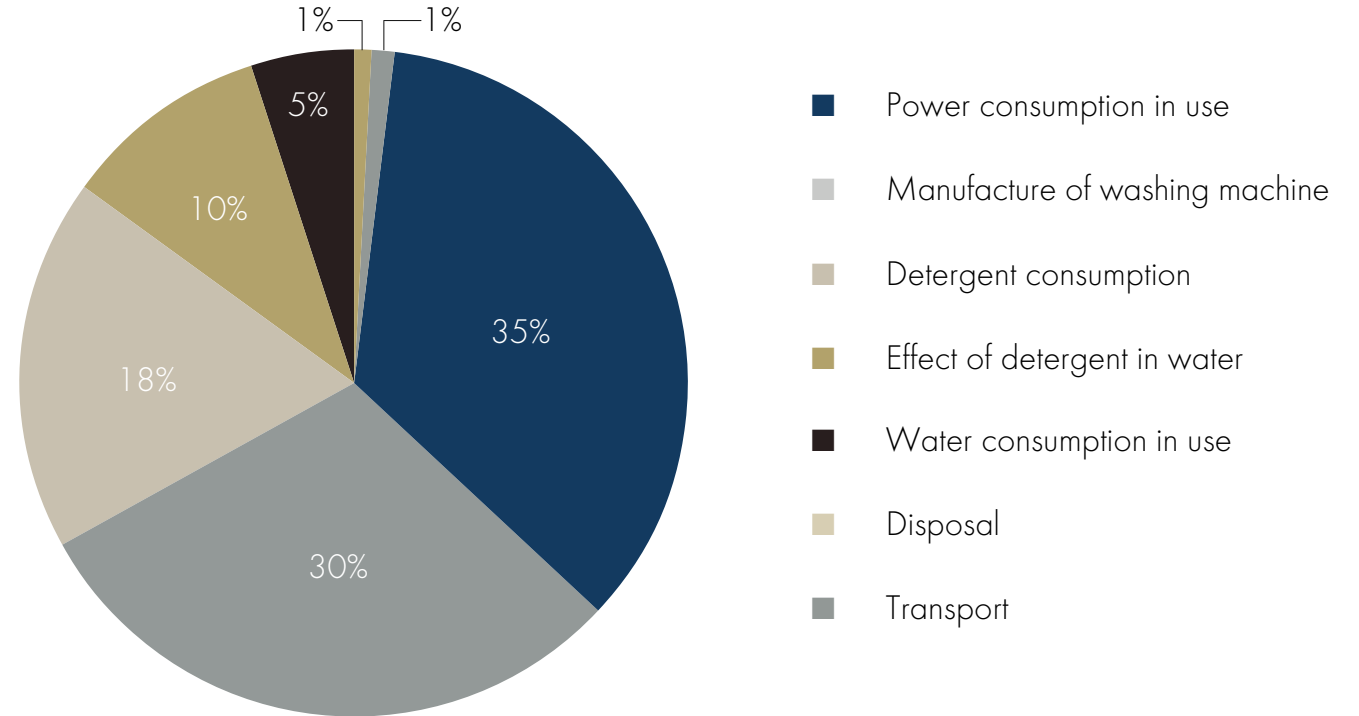
- A. Predictable costs throughout the contract period without tying up any capital
- B. V-ZUG is extending its responsibility to cover the appliances, and ensuring they will be integrated into the circular economy
- C. Direct service and support for tenants
- D. Possibilities for additional services for tenants in the future,
- E. such as upgrading to a higher-value appliance, which could be arranged by V-ZUG Service.





Usage

What sort of products we develop and how we manufacture them is important. But how our customers use these products is equally important. The product life cycle assessment shows where the largest environmental footprint occurs throughout the entire lifespan. Taking the example of a V-ZUG Adora V4000 washing machine, this is as follows: 30% originates from manufacturing the machine, while 68% comes from its use (see graphic below). During the usage phase, we want to help our customers to use the appliances as ecologically as possible. We see digitalization and networked appliances as a huge opportunity to provide support in the form of useful advice and functions. Quality, durability, efficiency and access to repairs and spare parts are also important aspects of using resources sustainably during the usage phase.

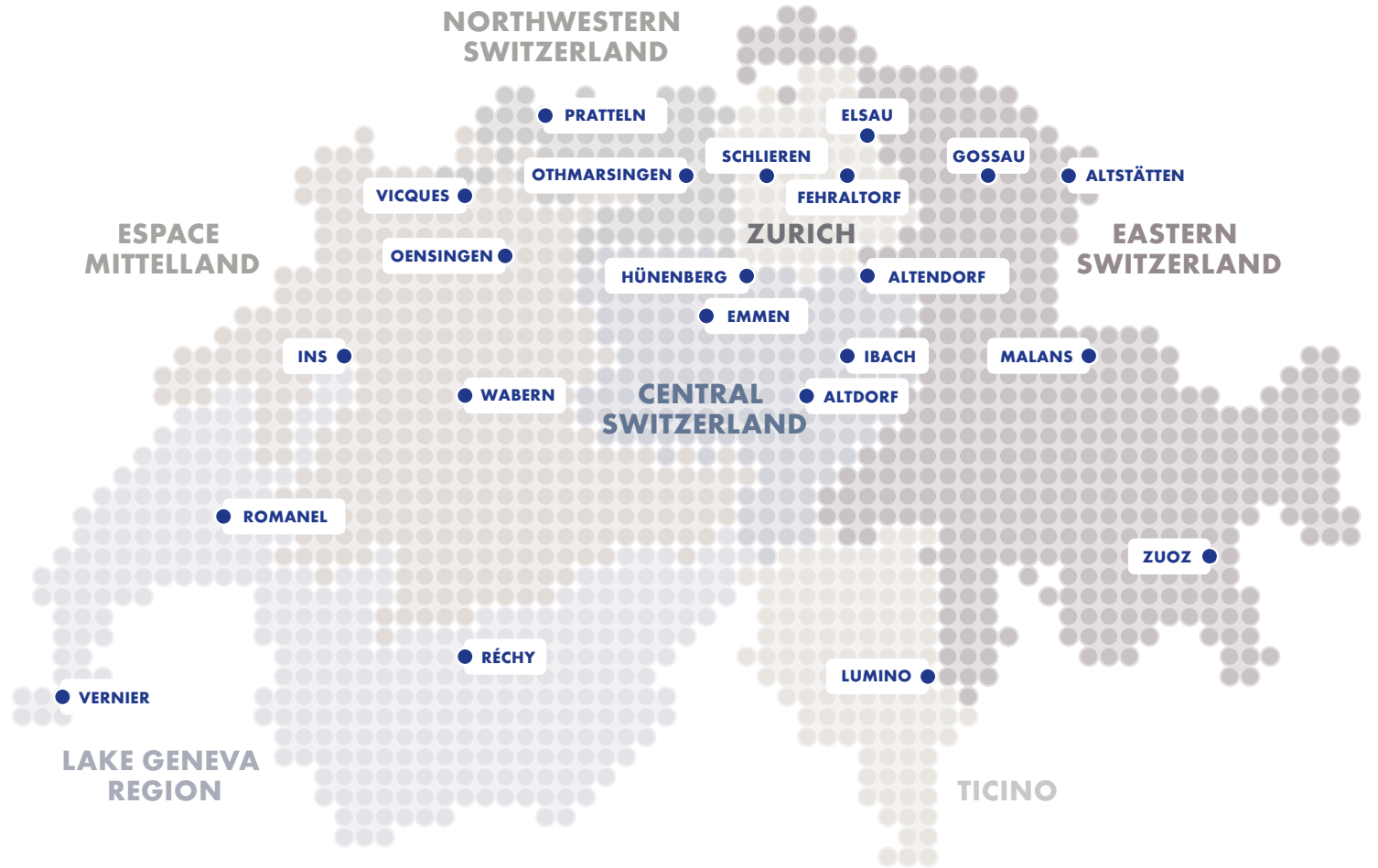




On-site repairs

Repairing and maintaining products that are already on customer premises helps to extend their lifetime. From the point of view of a circular economy, these two approaches are very advantageous, since they ward off wear and tear (maintenance), and restore damaged and defective products to working order (repair). The reparability of our V-ZUG appliances and the availability of spare parts for up to 15 years from purchase play an essential role here.

V-ZUG is far more than just a Swiss manufacturer of household appliances. For instance, we support our customers throughout the entire service life of our appliances with the leading, most highly skilled service organization in the sector. Over 300 service specialists are deployed at 22 locations in Switzerland, and V-ZUG Service is therefore always nearby, right across the country.



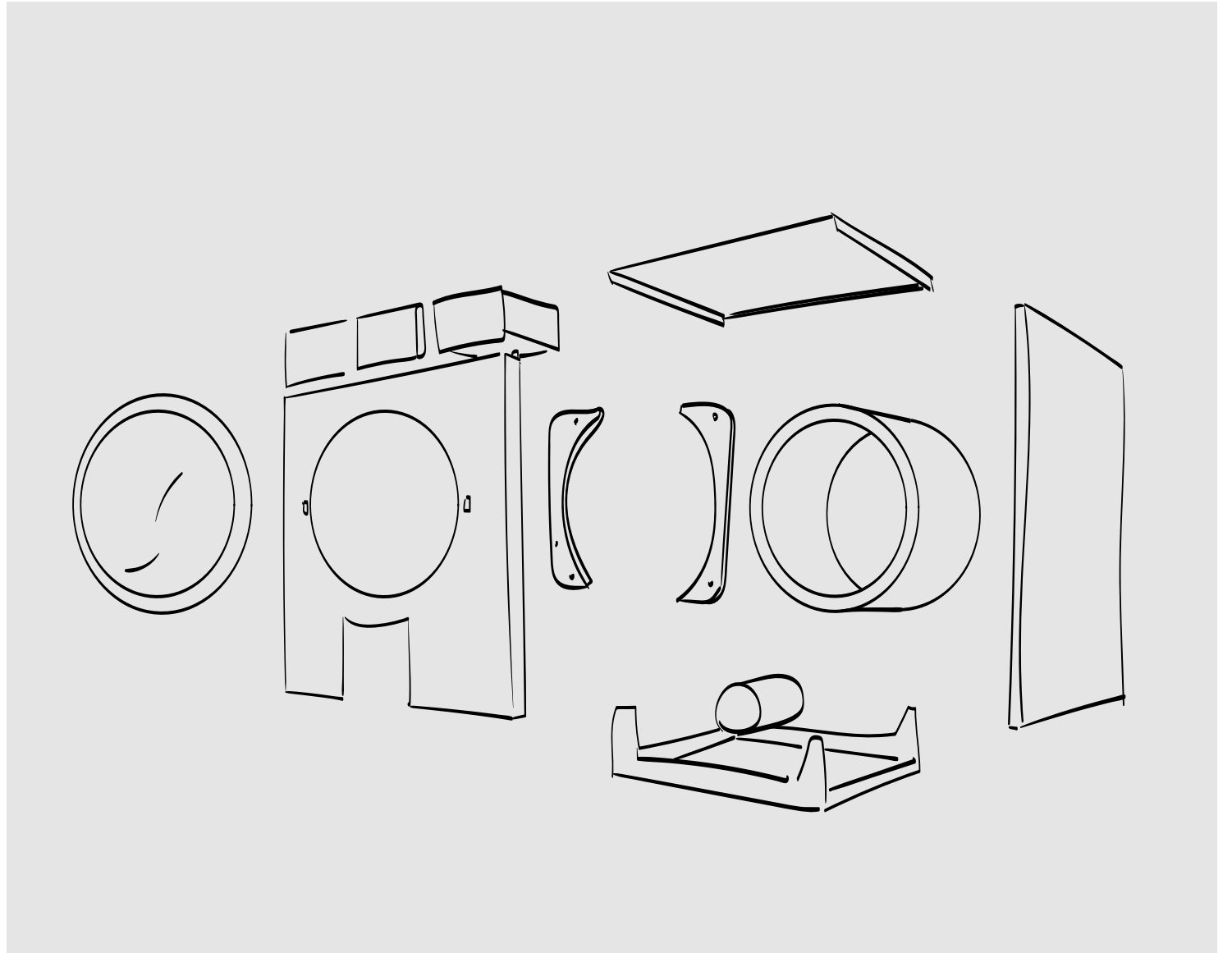


Closing the Circle factory

In the circular economy, production processes will differ significantly from those of today. Not only will primary resources be delivered to our site, but also products that left the manufacturing plant several years before. This requires a "circular economy factory", where the dismantling of "old" appliances plays a key role. Triaging will be carried out to ascertain what to do with returned resources. This will alter production processes, influence product design (for ease of dismantling) and create new jobs. All this has one goal – to keep resources in circulation for as long as possible in tip-top condition.

We are looking forward to the future!

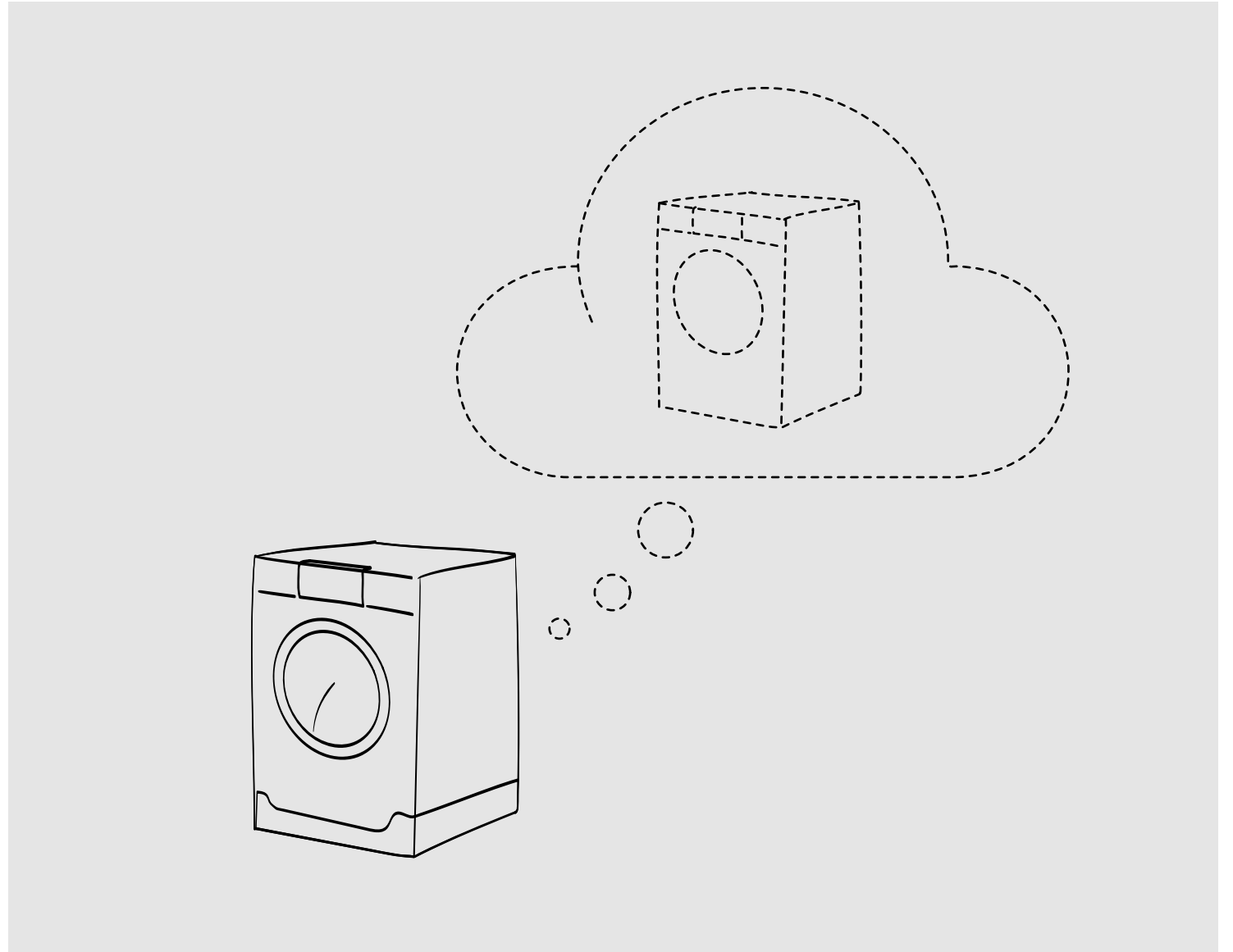
Where and how the reuse factory will be operated is open to discussion. It will either be created internally at V-ZUG, or existing partners such as recycling companies will develop further in this direction. There will also be opportunities for new service providers and start-ups in this field.





Data will play a key role in the circular economy, in order to design processes efficiently and save the maximum resources. Each product we deliver onto the market has a digital twin in our system. This shows which resources (metals, plastics, electronics, etc.) it contains and how they can be reused in the future. In this way, we have an overview at all times of how many resources are currently in circulation, and when and how we can close the circle. The system also shows service visits. For instance, if a washing machine had a new control board fitted when it was 13 years old, we want to be aware of that when it is returned two years later. This control board can continue to be used, either as a spare part or fitted in a "second life" appliance.

Digital twin





Thank you