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WORLD ECONOMIC FORUM

Future of Reusable Consumption Models

Platform for Shaping the Future of Consumption

INSIGHT REPORT

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2 Mega-forces shaping the future of reuse

A reuse system can never grow to the necessary scale to produce long-lasting systemic change without engaging consumers, business and government. These three stakeholders are the most powerful drivers for accelerating the shift towards reuse systems. This section of the report will look at each of the three stakeholder groups in turn, as a vital driving force, because they are certain to have an increasingly transformative effect on mainstreaming reuse systems.

2.1 Changing consumer preferences – "It needs to be done"

The most fundamental driving force of all – the one that makes the others possible – is a profound shift in consumer sentiment in favour of more sustainability-oriented options. If each of the driving forces could be distilled into a simple declarative statement, the operative one here would be: "*It needs to be done*."

Such is the sense of insistent urgency among a growing number of consumers worldwide – even as a global pandemic has dominated news coverage and public awareness. In the spring of 2020 – as COVID-19 was just beginning to spread around the world – a Kearney Earth Day survey of US consumers discovered that 48% of all respondents said the pandemic had already made them more concerned about the environment, and 55% said it made them "more likely to purchase environmentally friendly products".[7] A Yale study conducted around the same time found "several indicators of public engagement [on climate change] actually reaching record levels".[8]

Natural ingredients, greener products and sustainability-oriented brands are all benefiting from clear upticks in consumer demand, preference and willingness-to-pay. The Kearney Earth Day survey found the majority of consumers saying that over the following 12 months they would be likely to bring reusable shopping bags to stores (59%) and carry reusable travel mugs, water bottles or straws for drinks on the go (57%).[9]

Buyers are insisting on reduced packaging, increasing use of recycled materials, and other measures that would have been considered "fringe" only a few years ago. They are changing their behaviour to consider the environmental impacts, as seen in such practices as buying in bulk, declining the offer of plastic utensils at restaurants or cafés, and opting for minimal-packaging shopping practices such as container refills.

There is good reason to believe that this consumer emphasis on greater sustainability is here to stay and will accelerate the shift towards reuse. However, certain variables could either heighten or mitigate that emphasis. One particularly noteworthy variable is convenience – time-stressed customers will place a premium on it, and the pace of adoption for reuse systems will depend to no small degree on the success of efforts to make product disposal and reuse as friction-free as possible.

2.2 Corporate innovation and advances in technology – "It can be done"

It is one thing for consumers to want more pro-sustainability options. To actually generate those options in the marketplace, our second driving force needs to come into play – technological change, driven by private-sector innovation. In response to consumers' insistence that "It needs to be done", the business world's inspiring ethos is: "*It can be done*."

The word "can" is especially apt here, because the business sector plays an important role as a market validator of what is possible, practical and achievable. If the private sector were simply to say, "It *cannot* be done", any hopes for reuse would not get far.

Fortunately, the "can-do" spirit of business has a clear upper hand when it comes to reuse-related technologies. Renewable energy is now below fossil-fuel prices (less than 2 cents per kilowatt-hour); and material and digital innovations enabling reuse are on the rise. The focus of patents for reuse and refill innovations can be seen in global patent filings: nearly a quarter of these (23%) were for food containers and kitchen utilities; 20% for cleaning products; 19% for refillable cosmetics and personal-care containers; 16% for manufacturing and monitoring systems; 11% for beverage containers; and the remainder for a mix of purposes.[10]

Another important technological advance is the emergence of sophisticated traceability technologies, which can store a product's material composition, trace its journey and facilitate recovery. One especially intriguing example of this tech is a "material passport" for buildings, allowing structures to be used as material banks that can be cannibalized for usable parts at the end of their useful life, or as they undergo renovation.

Such breakthroughs are only the beginning. Far more is still to come, and the likelihood is that companies will first accelerate innovation in such relatively familiar areas as "at-home" programmes that evoke older commercial models such as milk and newspaper deliveries. Other reuse models will gain scale with more time; more investment; and more familiarity among consumers and sellers alike.

2.3 Government actions and initiatives – "It is incentivized"

And yet, even robust customer sentiment and business innovation will not be fully sufficient to ensure the scalability of reuse systems. A potent third driving force will be required – namely, public-sector actions and incentives. In fact, the catchphrase for this driver is, "*It is incentivized*", since it is within the unique power of government to establish effective inducements for pro-sustainability consumer choices and business innovation.

There are numerous governmental incentives underway worldwide to spur the transition to reuse-centred models, including a growing body of regulations enforcing circular-economy principles. These include such measures as quotas that mandate higher percentages of sustainable products within a given market.

Among the most visible reuse policies are plastic shopping bag bans, now in effect in several nations and subnational jurisdictions worldwide, including Italy, the UK, China, Australia, South Africa and several US states and municipalities.

As will be discussed in more detail elsewhere in this report, another role of the public sector is to help enact the public-private partnerships that will be crucial to building momentum towards reuse models. Public-private partnerships will create unique levers for overcoming scale barriers such as financial viability and behavioural change in favour of reuse.

One example of a public-private partnership that is already proceeding along such lines is the Plastic Pact Network, organized by the Ellen MacArthur

Foundation. This venture unites businesses and governments in the effort to reduce plastic waste and pollution at source, bringing together key stakeholders to implement geography-specific circular economy solutions. The Ellen MacArthur Foundation also organizes the New Plastics Economy Global Commitment, under which public and private signatories drive target setting and progress tracking for businesses reducing plastic waste.

Corporate signatories to the commitment include companies that represent 20% of all plastic packaging produced globally. More than 15 financial institutions (with a total of over $2.5 trillion in assets under management) have signed on, and five venture capital funds have pledged a total of more than $200 million to create a circular economy for plastic.[11]

In addition, governments from national down to community level can serve as platforms to build scale for pro-reuse measures, by facilitating the development of physical infrastructure, innovation incubators and other resources that the public sector is optimally suited to establish and support.

Common challenges to overcome

In order to make large-scale reuse a reality, both private and public organizations will need to invest in new capabilities to overcome the distinctive barriers facing each driving-force group: consumers, the private sector and the public sector.

The first barrier: hindrances to the growth of pro-reuse consumer behaviour

Private-sector and public-sector stakeholders will need to address the conditions that limit consumers' access to reuse systems, or that otherwise dissuade the mass consumer behaviour changes that reuse would depend upon.

Convenience and affordability: There are other ways in which public-private partnerships could spur further consumer acceptance of reuse programmes. As noted in this report, we have begun to see reuse models that are both convenient and affordable. Establishing and publicizing such models – ideally in a broad range of sectors – would go a long way towards entrenching consumer acceptance of reuse systems.

Packaging safety: A potential dissuading factor is consumer concern about packaging safety in the context of COVID-19 and its aftermath. Addressing this may require some consumer education, delivered by business and regulatory bodies (either separately or collaboratively) on packaging and COVID transmission.

One way to achieve this would be by testing and piloting reuse programmes to ascertain viable consumption models and spread awareness of their feasibility. This could be carried out by public-private partnerships at city or national levels. In addition, consumers could receive incentives from the public sector (such as tax breaks) and private sector (rewards programmes, reduced pricing) to further stoke interest in reusables.

The second barrier: factors that could prevent businesses from developing pro-reuse practices and technologies

Among the most important audiences that private-sector reuse advocates will face is their fellow business leaders. Whether on their own or in tandem with public-sector partners, companies seeking to advance reuse models will need to actively confront some barriers to the business community's participation. Three barriers in particular warrant attention: insufficient infrastructure; uncertain financial prospects; and inadequate brand differentiation.

Insufficient infrastructure: Current systems are established around a linear delivery model. The public sector has an especially important role to play in developing the infrastructure needed to build a more reuse-centred marketplace, while private-sector entities can help by establishing value-chain partnerships.

Financial viability: A lack of scaled precedents (so far) makes business cases difficult to develop for this new model, so stakeholders (especially

retailers) are reluctant to make these investments. This is not an insuperable obstacle – after all, the greatest business successes of our time have resulted from entrepreneurs boldly going where very few others had even thought to look (think Apple, Microsoft, Google, Amazon – the list goes on). Nonetheless, private-sector and public-sector actors (including think tanks and universities) could help by establishing credible, well-substantiated holistic viability-modelling tools to generate useful insights on scalability.

Brand differentiation: Industry-wide packaging standardization, using shared infrastructure, is often identified as an essential means of achieving scale for reuse systems. However, such standardization can come at the cost of brand differentiation. A potentially significant role for public-private partnerships might be to generate designs and processes for scalable infrastructure that allows for sufficient levels of differentiation. System stakeholders may also differentiate not only through packaging, but also through non-material means such as digital experiences, particularly for direct-to-consumer offerings.

The third barrier: limitations on governments' ability to encourage and incentivize pro-reuse market conditions

The primary barriers to constructive government action are a lack of funding, misaligned incentives and a lack of standardized tools to assess the effectiveness of reuse programmes.

Funding challenge: This is probably the most significant of challenges, particularly at a time when national, subnational and local governments are under acute fiscal pressure. Yet the public sector response to the COVID-19 pandemic has demonstrated that – when humanity faces a life-threatening issue – adequate funding can be found. One important capability that could unlock this problem is the passage of tax incentives or other policies that reward forward-leaning businesses and penalize laggards.

An example is extended producer responsibility (EPR) policies, which seek to tally the environmental costs of products throughout their life cycle. As summarized by the OECD – which has reported seeing a trend towards the expansion of such policies – under EPRs, "producers are given a significant responsibility, financial and/or physical, for the treatment or disposal of post-consumer products".[12]

Such plans are increasingly shifting the cost of discarded products onto manufacturers. Introduced in Sweden in 1990, the EPR concept has been adopted in varying forms by regulators in Europe, Asia, North America and South America, and it seems destined to gain momentum in years to come. Singapore is set to debut an EPR for electronic waste and packaging materials this year, and the UK plans to do so for packaging in 2023.

Incentive misalignment: Part of the problem is that many municipal systems reward high levels of recycling, as opposed to outright waste reduction. Since elevated levels of reuse – and, therefore, reductions in single-use waste – would likely bring down recycling rates somewhat, this incentive structure could actually serve as a disincentive to the development of reuse processes. A basic fix would be to realign the system to place a higher value on waste prevention and reduction – though it's worth emphasizing that reusables will still need appropriate recycling systems at the end of their useful lives.

Standardized tools: Metrics and tools for understanding the economic, environmental and social benefits of reuse are currently lacking. Here, again, is a clear opportunity for public-private partnerships, incorporating expertise from business, government, academia, NGOs and think tanks; such partnerships could co-develop a rigorous set of standard measurement frameworks and tools that serve the needs of corporations, investors, innovators and regulators alike.

As noted in the Introduction, only 1.9% of all plastic packaging was reusable as of 2019 from organizations that were EMF Global Commitment signatories.[13] If we are to make reuse a standard component of our productive economy, both private and public organizations will need to invest in new capabilities to overcome the barriers facing each group: consumers, the private sector and the public sector. Overcoming these barriers will be accelerated by the numerous opportunities for new value creation that reuse unlocks.

3 New value-creation opportunities

This section of the report will explore how reuse creates value for the three crucial constituencies introduced in the previous section. It will consider the following factors: (1) how reuse shifts economic value from linear systems; (2) new value delivered to consumers; and (3) the role of public-private partnerships.

These new value-creation opportunities represent powerful means of addressing the challenges facing the creation and scale-up of reuse systems. They also offer a preview of the kinds of broad-scale economic, environmental and social benefits that we might be able to look forward to as these systems expand.

3.1 Shifting economic value

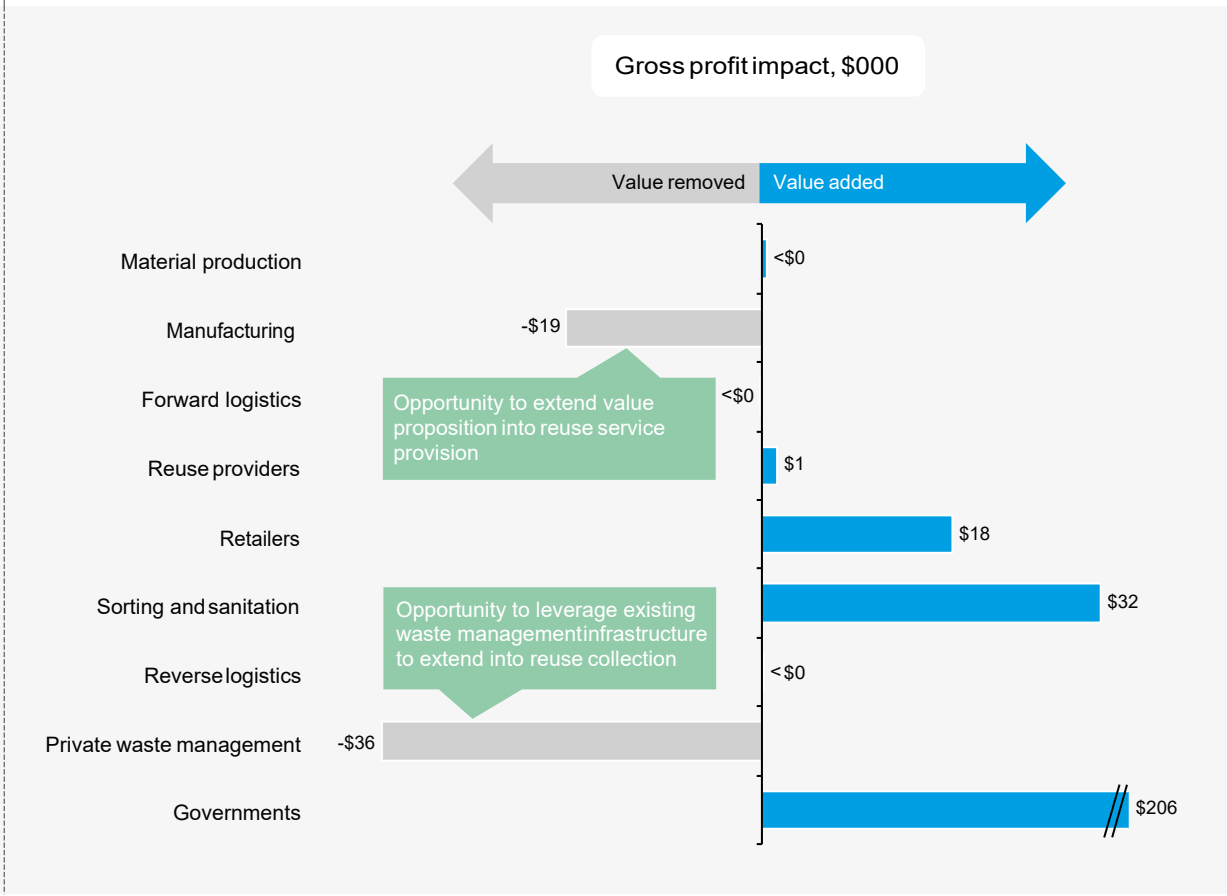
New reuse business models will create new markets that shift value within systems, transferring value from the opening stages of the product life cycle and substantially adding value to the subsequent stages.

The reuse paradigm relies upon new business models that shift value around a system. It tends to add most cost and value towards the end of a container's life cycle (in sales, returns and refills) and away from the beginning (material extraction, manufacturing).

This shift creates opportunities for companies that can take advantage of new value pools – e.g. new-material production and manufacturing, sanitization, refilling, branding and retail. For the private sector, then, reuse shifts (rather than removes) value as it scales upwards. For the public sector, reuse creates value as it diminishes the need for costly waste-management programmes.

For example, a scenario model of scale for the generic return-on-the-go cup mentioned above yielded insights conducted for economic impact.

FIGURE 1 | Scenario model – returnable cup, New York City



KEY POINTS

At this scale point, governments, sorting/sanitization and retailers are receiving the most added value

Manufacturers of disposables and private waste management responsible for disposing of them bear the burden of lowered demand

Source: Kearney scenario analysis, 2021

As the Figure shows, the value shifts away from certain stakeholders as reuse expands. However, the net economic value of large-scale reuse is ultimately positive – eventually creating significant potential sources of income even for those companies and sectors that are initially disadvantaged by it. Reuse creates value for the overall economy in various ways, including a reduction in the amount of waste that must be managed by government agencies, and the emergence of lucrative new markets for sorting and sanitization.

A reuse-centred distribution system creates an array of new markets and opportunity areas, which will only become more numerous and productive as the reuse model takes hold worldwide.

A. Opportunities in manufacturing: While reuse diminishes value in this phase of the product life cycle under the scenario above, the manufacturing sector potentially has much to gain from a shift towards reuse. One intriguing possibility is the emergence of "manufacturing as a service" – developing and leasing reusable packaging to be reclaimed and recycled at the end of the product's life cycle. Then there are the potential value gains that manufacturers could reap from material innovation in durability and reusability features, as well as in the technologies related to material traceability and digital services.

B. Opportunities in private waste management: This is another sector that loses value in the reusable-cup scenario above, but that could gain significant value from the development of large-scale reuse systems. One new source of value for this industry would reside in its currently existing collection networks, which could be used to offer the "reverse logistics" at the heart of the reuse model. Waste-management companies could also apply their current infrastructure to the potentially lucrative work of sorting and sanitizing reusable goods.

C. Opportunities for brands and retailers: Reuse offers a host of new market opportunities for branding and retail. It generates rich possibilities for consumer-loyalty development, through lengthened product engagement. Companies can also personalize and customize goods and services at a new level of precision, including through in-store engagement via embedded container RFID chips.

D. Opportunities for system enablers: Such enablers can serve the various phases of the reuse system. For example, there will be a market for companies to build reuse and refill systems into property infrastructure, such as apartment complexes or neighbourhood community centres. There will also be a need for "smart boxes" and other durable packaging to aid in the transport of reusable goods. Reuse also opens possibilities for new services provided via existing transport networks, such as ride-sharing and food-delivery services.

3.2 Delivering new consumer value

A reuse-centred approach to consumption would deliver value for consumers in a variety of ways. Among the most marked trends in consumer behaviour in recent decades is the willingness to pay a premium for brands that reflect the purchaser's personal values, such as animal welfare, fair trade, sustainable resource usage and local sourcing. Relatedly, many consumers have come to express an expectation of deepened engagement with their favourite brands, particularly through social media.

Reuse would offer countless opportunities for such forms of branding and engagement. It calls upon consumers to carry durable containers, often emblazoned with the producer's logo. It gives consumers new touchpoints at which to engage with the company, such as at refill or cleaning stations. It is to be expected that savvy brands will quickly learn how to maximize the relationship-building value of these and other stages in the reuse cycle.

It is increasingly clear that convenience is emerging as an important consideration driving consumers towards reusables. Reuse systems are highly convenient for some categories – such as bulk food – while they are challenging for others. For categories well-suited to reuse, new models can already improve upon the convenience of disposables. Early uptake will be driven by models – such as refill-at-home – that can deliver such improved convenience for consumers with infrastructure that is already available. For the more challenging categories, sizable incentives or other circular solutions are required.

Proponents of reuse need to take a serious look at how to shape the way consumers think about convenience. After all, using an item once and then simply throwing it away is undeniably more "convenient" than taking the additional steps needed to perpetuate its useful life.

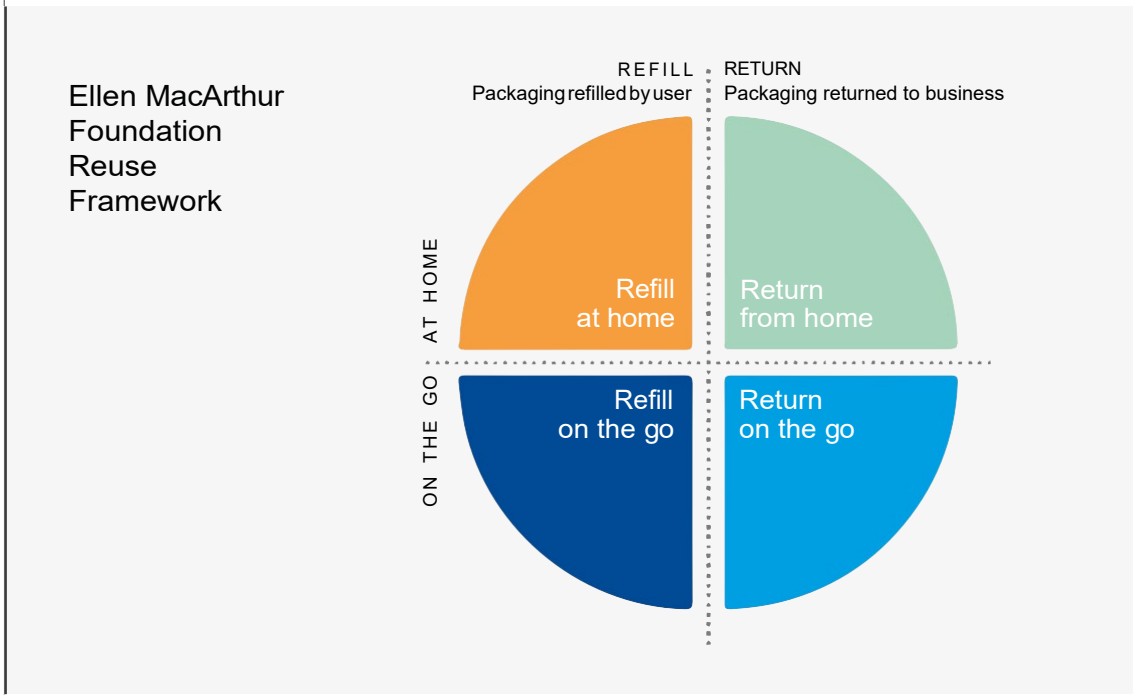
The good news is that we have positive precedents for such a mass mind-shift. As recently as the 1960s and 1970s – well within the living memory of many adults – littering was common behaviour in the US and other developed nations. Today, it is virtually a taboo act – despite the sheer "convenience" of simply dropping to the ground anything one no longer needs. This shift in mindset was the result of a concerted effort to educate the public on the costs of such behaviour. A project of similar intent and scale will be needed if we are to establish reuse as a broadly acceptable solution.

The Ellen MacArthur Foundation (EMF) has made the point that "reuse presents an innovation opportunity to change the way we think about packaging from something that's simply as inexpensive and light as possible to viewing it as a high value asset that can deliver significant benefits to users and businesses".[14]

To better understand that value proposition, EMF has developed its own "Reuse Framework" that helps us understand the diversity of reuse system modalities – and the strategies that may be most viable for rolling out each reuse model to consumers.

The Ellen MacArthur Foundation organizes reuse modalities into four main categories:[15]

FIGURE 2 The four reuse models



Source: Ellen MacArthur Foundation (2019): *Reuse: Rethinking Packaging*.

Examining each of these four modalities through the Reuse Viability Framework reveals different scaling implications.

A. For refill at home, the barriers to expansion are relatively low. Delivery of refills and packaging can use existing direct-to-consumer channels; what little change is required in consumer behaviour is often welcome. One factor to watch out for: refill from home often relies on disposable packaging, which can limit waste-reduction potential.

B. For return from home, the needs are more fundamental. Although consuming and returning from home is often a welcome behaviour change for consumers, reuse providers need systems to handle the logistics of return and cleaning of products in order to deliver the solution viably, and those systems often have yet to be built. Addressing that challenge, and thereby giving consumers the access they need, is the top priority for this modality.

C. For refill on the go, which has relatively ambitious demands, consumer behaviour change is critical. This system can add significant travel time and education requirements for consumers to engage. However, bulk dispensing systems can be straightforward to set up for providers willing to dedicate shelf space and make them accessible.

D. Finally, the return-on-the-go modality faces challenges in engaging consumers, due to the need for consumer travel and education, and the overall complexity of providing access. The need here is for long-term investment to build the infrastructure, perhaps with an early emphasis on certain targeted categories that offer particularly good odds of consumer uptake, such as takeaway coffee.

Stepping back to look at reusables, it is becoming increasingly clear that they have great potential to deliver new value for consumers, even in terms of convenience – a crucial advantage in the bid to gain the support of time-pressed, overstretched consumers. In recent years, several innovative start-ups have emerged to push the boundaries on improving convenience in reusability.

Loop, a subsidiary of TerraCycle, has established partnerships with such leading US retailers as Kroger, Walgreens and Carrefour to allow customers to borrow handsomely designed brand-name packaging, which is fully recyclable after 20 to 100 uses. In its return-from-home and on-the-go models, the company will professionally clean and reuse the container once the customer is finished with it. As of December 2020, Loop had enlisted more than 100 brands globally and offered more than 400 products.[16]

The Chilean start-up Algramo has recently broken into the US market with its innovative refill-on-the-go distribution model. After a one-time container purchase, a customer may refill a range of liquid cleansers from dispensing machines at participating stores. Producers signing on to the programme include such market heavyweight brands as Clorox and Pine-Sol. Algramo even launched a pilot in April 2021 with Walmart Chile to provide refill stations for branded in-house products.

It is not only start-ups that are driving the shift to reuse. In Brazil, Coca-Cola offers a discount on customers' next purchases when they buy products in refillable bottles; this reportedly ensures a return rate of 90%. Retailers store the empty bottles and return them to Coca-Cola upon delivery of a new order. Then Coca-Cola brings the bottles back to a facility where the paper labels are washed off and the bottles cleaned, refilled and rebranded with a fresh label.[17] PepsiCo is also active on the reuse front; according to the company, its SodaStream business estimates it will save 78 billion single-use bottles by 2025 from entering the waste cycle (PepsiCo estimates, 2021).

For other examples of new reuse models taking off, MIWA is implementing reusable capsules, and Muuse has created reusable drink and meal containers for cafés.

One market factor working in reusables' favour is consumers' rising level of experience with e-commerce payment and delivery systems, which align closely with reusable-distribution models. The UK saw 250% year-on-year growth of food deliveries in 2020; it is not difficult to see how such purchases – which often involve simply scanning an RFID chip – could serve as a basic model for return-and-refill orders.[18]

What seems clear is that customers are increasingly expecting high-convenience transactions, with minimal friction. Reusables can offer this – though perhaps more readily for some modalities and sectors than for others, at least for now. Regardless, the opportunities for reusables to deliver new value to consumers are plentiful.

3.3 Role of public-private partnerships

The private sector need not work alone in bringing about the reuse revolution – public-sector (government, NGOs, international organizations, academia) collaboration significantly lowers the barriers to scale-up.

The public sector can serve as a platform to scale reuse, whether as a third-party facilitator (such as through the development of public infrastructure) or as a participant in public-private partnerships to encourage innovation. Diverse players interested in advancing reuse have consistently highlighted the need for more clarity on what makes such solutions viable – and the public sector is in a unique position to provide that clarity.

One fact to clarify about reuse is that, while reuse providers require some time to scale up their systems in order to achieve gross profitability, they can still operate viably at a smaller scale. Higher levels of scale bring countless other benefits, from a retail boost for first movers to improved brand recognition. However, reuse providers need not work in isolation to build scale – the public sector can be an indispensable ally. That allyship can take several forms as discussed below.

A. Third-party facilitation and collaboration: In one model, the public sector provides a crucial platform for third-party facilitation and government enablement. One way in which this can occur is when private companies and reuse providers partner with governments to develop enablers such as innovation platforms and financial incentives.

   Collaboration is making reuse more accessible, as shown across a growing range of case studies. Public-private partnerships are proving to be an especially powerful form of such collaboration, as exemplified in EMF's Plastics Pact Network.

Local governments have also sought to influence consumer behaviour through public-education programmes. MIWA set up an education platform called Minimum Waste, which features physical venues where citizens can learn more about reducing waste and buying reusable products. The city of La Rochelle, France, launched a communication campaign designed to reduce and prevent waste. The programme involves "10 simple gestures" for citizens, including reusing and repairing belongings, rejecting disposable water bottles and buying in bulk.

In major markets in Asia and Europe, city-level consortiums are moving forward on local circular models. In Seoul, Share Hub serves as a community of city government agencies, companies and residents who can exchange knowledge, present initiatives and connect with resources to advance circular solutions. In Munich, Halle2 serves as a reuse lab that convenes local stakeholders to share knowledge, innovate and sell products.

B. Standardization: The public sector can also draw upon its unique power to act as a trusted authority on standardization. In Canada, a series of container-deposit laws helped define beverage-container standards to facilitate bottle return, reuse and recycling. National standardization in Germany has allowed for the creation of a highly effective bottle-return system, which yields a consumer return rate of 99%. Reusable-bottle deposits are €0.08–€0.15 ($0.10–$0.18), which are refunded to the consumers upon return. Another European standardization effort, the Euro Pool Group, serves as a lessor of standard pallets and crates for the continent's food supply chain.

C. Incentivization: Governments can provide incentives to encourage businesses and consumers to embrace reuse methods. For example, the Urban Infra Revolution Project in Lappeenranta, Finland, is a project that tests circular-economy technologies and business models in the urban construction and engineering sectors. Another example is ReLondon, a London partnership to "transform the city into a leading low-carbon circular economy".

ReLondon is a partnership between the mayor of London and the city's boroughs to improve waste management and create a circular economy in one of Europe's largest cities. In 2016, it produced a pioneering "circular economy route map" showing practical actions and collaborations across the city; an updated version is expected by the end of 2021. ReLondon also offers grants and consulting advice to businesses seeking to implement circular practices, and even has what it calls a "matchmaking service" to introduce circular experts to investors and partners who can help magnify their impact.

D. Redistribution of value across local, regional, national or even international systems. Two especially powerful redistribution levers are government subsidies and tax incentives. The latter, for example, may be used to either reward reuse or create disincentives for single-use consumption. Taxes collected through a $0.07 single-use cup tax could generate more than $100 million in New York City alone, which could then be distributed via subsidy to reuse-system participants.

Arcata, California, implemented a $0.25 charge for customers using disposable foodware, and a $0.25 discount for customers who bring reusable foodware to food vendors. The Belgian region of Flanders subsidizes municipality-led waste-prevention initiatives and second-hand shops.

Another value-distribution mechanism is the development of enabling systems and infrastructure. Governments can engage on this front through regulation, public investment, grant funding for infrastructure and technology, and infrastructure-sharing. What makes such public-sector infrastructure efforts so important is that many aspects of the reuse system – such as refill and cleaning stations – do not currently add competitive value, and therefore need to be shared across the whole system.

Closed Loop Partners is a New York City-based investment firm and innovation centre focused on building the circular economy. In addition to being an early investor in refill pioneer Algramo (see above), Closed Loop Partners' Center for the Circular Economy has convened collaborations to test emerging reusable packaging models. Their NextGen Consortium, in partnership with Starbucks, McDonald's and other leading food-service brands, conducted market tests of new reusable-cup models at cafés in the San Francisco Bay Area.[19] Their Consortium to Reinvent the Retail Bag, in partnership with CVS Health, McDonald's, Target and Walmart, recently announced reusable-bag solutions that will be piloted in the US.[20]

E. Public infrastructure: Finally, governments can use public infrastructure to maximize the viability of reuse systems. For starters, they can use their public spaces to drive adoption of reuse. For example, Copenhagen is planning to require reusable cups at large public events in the city, such as parades, carnivals and festivals.

   Many cities are positioned to supply storage space for reuse systems, such as in vacated industrial facilities. Such depots – which are currently often underused – can reduce the burden on private-sector providers to invest in additional infrastructure themselves.

As these and numerous other examples suggest, the public sector's role in building reuse systems is highly varied and derives much of its power from collaboration with the private sector. Public-private collaboration creates unique levers to overcome scaling barriers such as financial viability, infrastructure needs or behaviour change.

This section of the report has dealt with what our experts have identified as three of the core realities that must inform any attempt at large-scale reuse networks: a clear understanding of the value shifts that such networks entail; the importance of new consumer value; and the extraordinary potential of public-private partnerships to ignite successful reuse models. To better understand how this new value is created, we next turn to a proposed framework that can help all market participants see the various incentives and disincentives at play in the development of reuse-based economi