Consumers, sustainability and ICT

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Perceptions and actions around climate and the role of ICT in living sustainably

An Ericsson
ConsumerLab
Insight Report

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Contents

This study focuses on the attitudes of consumers towards sustainability challenges and how technology could help them make a greater impact.

Methodology
This report comprises insights based on a quantitative study focusing on internet users in the US, Brazil, the UK, Germany, Spain, Russia, South Africa, the Kingdom of Saudi Arabia, India, Malaysia, China and Australia. The sample consists of 1,000 respondents from each country, with an age range of 15–69. This report is representative of 900 million people.

The study was carried out between December 2019 and January 2020, and concerns consumer attitudes, understandings and challenges around leading environmentally sustainable lifestyles. It also explores the role of information and communications technology (ICT) in assisting consumers' daily efforts to reduce their personal environmental impact.

The final data was gathered just before the widespread outbreak of the novel coronavirus disease (COVID-19) and its subsequent classification as a pandemic; hence, the habits and attitudes that consumers have expressed may have changed during the crisis and subsequent quarantines experienced by several nations worldwide.

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Ericsson Consumer & IndustryLab delivers world-class research for innovation and sustainable business development. We explore the future of connectivity for consumers, industries and society through scientific methods, providing unique insights on markets and consumer trends.

Our knowledge is gained from global consumer and industry research programs, including collaborations with renowned industry organizations and world-leading universities. Our research programs cover interviews with over 100,000 individuals each year, in more than 40 countries – statistically representing the views of 1.1 billion people.

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A changing environment and consumer mindset

In the past decade, the topic of climate change has become more prevalent in global debate and in the awareness of consumers across the world.

Nations and citizens alike have observed continually increasing temperatures and the resulting natural disasters, such as floods and wildfires, impacting both human and wildlife habitats around the globe. As many governments and businesses gradually increase the global efforts to mitigate environmental impact and keep below a 1.5-degree global temperature increase, there are other voices to be heard. The young activists of Fridays for Future and the mobilization of millions across 185 countries[1] during the UN Climate Summit raised clear voices, urging everyone to help combat critical environmental challenges.

But where do everyday consumers stand in this? How aware are they of the environmental impact of their habits and behaviors? And do they consider ICT as a tool for helping them address their impact? While we believe that ICT can aid consumers in making environmentally smart decisions in daily life, we set out to explore the driving forces and opportunities that consumers themselves see.

Key findings

- **Pollution and climate at the forefront of the consumer global mindset**

While financial security, crime and political unrest are engaging a similar share of the world's population, environmental concern has risen sharply in the mindset of consumers. In the last two decades alone, air and water pollution has gone from concerning one in five consumers, to almost one in two. Consideration for climate change has also risen from 13 percent of consumers to 50 percent.

- **Consumers call for collective and political action**

Globally, 8 in 10 see governments as being responsible for environmental protection, with approximately 70 percent also considering citizens responsible. As 5 in 10 also expect companies and brands to uphold their share of the responsibility, it is clear that consumers see the need for collective action, while pushing higher responsibility onto the political arena.

- **Misperception and lack of strategies limit impact**

The majority of today's consumers already apply various strategies to address their consumption habits, yet they are unaware which of these habits have the highest environmental impact. The impact of diet is understated by 84 percent, while around 70 percent overestimated the impact of smartphone usage. While concern is on the rise, one in three struggle to identify strategies for managing personal impact.

- **ICT expected to tackle environmental challenges**

Globally, 36 percent would like their devices to offer guidance on living more environmentally consciously, while 46 percent see technological innovation as critical to tackling future environmental challenges. As for their ICT devices, one in two consumers see privacy and security aspects as more concerning than their possible environmental impact.

- **Belief in ICT as a tool for sustainable living**

Consumers' interests, personal actions and beliefs regarding environmental opportunities in technological innovation go hand in hand. Consumers who think technology will be crucial in solving future environmental challenges express almost twice the interest in various ICT solutions to help them live more environmentally consciously, compared to others.

[1] The Guardian, "Across the globe, millions join biggest climate protest ever": https://www.theguardian.com/environment/2019/sep/21/across-the-globe-millions-join-biggest-climate-protest-ever

Consumers call for collective action

As awareness increases around the state of the environment, consumers look to decision-makers and key actors to take the initiative.

Since the year 2000, we have asked consumers to highlight which of 18 different societal challenges they see as most important. While concern for issues, such as terrorism and inflation, increases and decreases following world events, pollution and climate change have been steadily rising. In the last two decades, air and water pollution has gone from concerning one in five consumers to one in two. During the same period, the concern for climate change has increased from 13 percent of consumers to 50 percent.

Throughout the countries in this study, consumers are already acting in ways that mitigate their environmental impact. Actions such as conserving water and energy, reducing food waste, recycling household waste and avoiding single-use plastics as well as maintaining energy-efficient appliances are taken by one in two consumers globally. What consumers decide to focus their efforts on generally follows national priorities as well as individual driving forces. In countries where water is a critical commodity, such as in South Africa and Malaysia, conservation of water as a general practice is undertaken by 69 and 63 percent of consumers, respectively. Meanwhile, in countries hit by considerable air pollution, such as China, avoiding travel by car is practiced by 64 percent. Yet the declining state of the environment is making it apparent to consumers that stronger measures are needed. And despite around one in three feeling that they would like to do more for the environment, they do not necessarily know how.

Hence, consumers are calling on key actors to step in. In fact, 8 in 10 consumers globally identify their national and local governments as having significant responsibilities in protecting the environment, with 45 percent believing that environmental regulations will have a positive impact on businesses and the economy. Around 5 in 10 also see companies and brands as key actors who are responsible for protecting the environment. In the context of consumers calling for collective action, businesses are equally expected to conduct environmentally sound practices. It is therefore crucial that decision-makers and businesses understand the expectations, as well as the belief in their abilities to act on climate change.

1 in 4

Actions for mitigating environmental impact should be a collective effort, as one in four consumers see that everyone – all state, business and non-governmental agents as well as citizens – should take this responsibility.

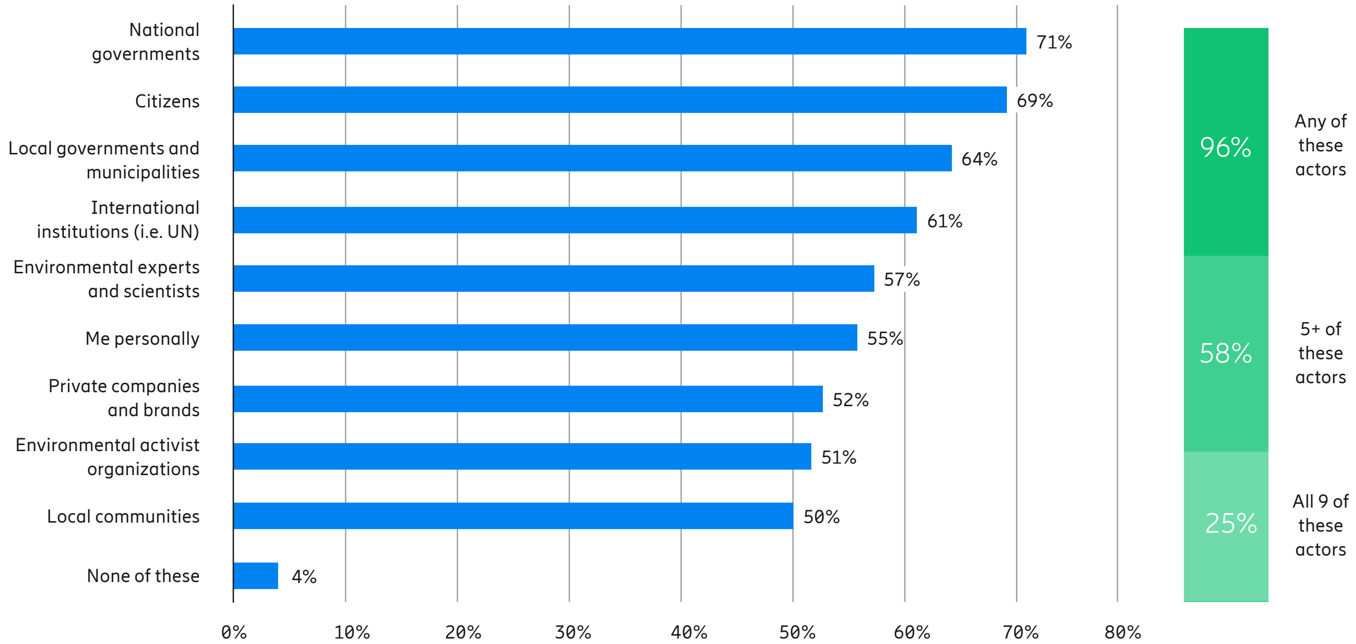
Figure 1: National variations in perceptions of responsibility

The role of different actors according to consumers

The relative position of actors according to consumers, by country

Source: Ministry of Science and ICT, South Korea
Base: Internet users aged 15–69 years old within Australia, Brazil, China, Germany, India, Malaysia, Russia, Saudi Arabia, South Africa, Spain, the UK and the US

Figure 2: Where responsibility lies in the eyes of the consumer



Source: Ericsson Consumer & IndustryLab, Consumers, the climate and ICT study (January 2020)
Base: Internet users aged 15–69 years old within Australia, Brazil, China, Germany, India, Malaysia, Russia, Saudi Arabia, South Africa, Spain, the UK and the US

Not only are consumers' actions dependent on national circumstances, but their belief in which actors are responsible for the environment also differs accordingly. It seems that the more active national and regional governments are in consumers' everyday lives, the more likely that consumers will turn to them with their expectations. Whereas, when the relationship between a national government and its citizens is challenged due to political instabilities, or the influence of the central government is distant from consumers' daily lives, they are more likely to place their expectations across numerous actors, including experts, international institutions and private companies.

It is worth noting that while approximately 70 percent of consumers think citizens, in general, should act, only 55 percent identify themselves as bearing responsibility. This might suggest that consumers are finding it difficult to connect their individual actions to any significant impact on the overall state of the climate.

From the way we live and consume, to the way we travel – environmentally sound choices can be made every day. And while consumers may feel they are making efforts, they still have limited understanding of what more they should do, especially given the continually declining state of the environment. It is clear that the majority of consumers wish to make a difference through their daily actions, but seek support in understanding how best to contribute further.

55%

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Consumers' misperceptions limit greater impact

There are numerous habits and aspects of life that could be practiced in more sustainable ways.

Today, many consumers are mindful of their consumption habits. But what more is there for consumers to address when trying to mitigate their personal environmental impact? And are they aware of which common habits are more or less impactful? To explore this further, consumers were provided with a list of common activities and asked to rank them according to their estimated impact. While consumers correctly ordered car commuting and air travel as high-impact areas, diet and smartphone usage were more difficult to rate correctly.

It may not be apparent to consumers how products and services are produced and provided, let alone how and when emissions are generated and released in the process. This may explain why the environmental impact of common devices is severely overestimated, while the impact of dietary choices is so severely underestimated. The biggest overestimations of smartphone use can be found among consumers in the US, Germany and Australia. Interestingly, consumers in the US and Germany also show lower interest in technological innovations for assisting them in living more sustainably by, for example, helping them to recycle correctly, lower food waste or conserve water, when compared to consumers in other countries.

The greatest underestimation of diet can be observed among consumers in China and Russia, though the challenge in understanding the environmental impact of something as common as diet occurs across all countries in our study. Looking at how consumers rated the listed activities individually, based on what they believe has low, medium or high environmental impact, as many as 84 percent of consumers underestimated the environmental impact of diet, while two-thirds overestimated the impact of smartphone use. This highlights an opportunity to support consumers in understanding what they do right, and what they could do differently to have even greater impact.

84%

As many as 84 percent underestimated the environmental impact of diet, while two-thirds overestimated the impact of smartphone use.

Figure 3: Environmental impact of activities ranked by consumers vs. actual

Environmental impact – ranked by consumers	Environmental impact – ranked by actual CO2e value
Commuting to and from work in a petrol car for 40 minutes every weekday for a year	Commuting to and from work in a petrol car for 40 minutes every weekday for a year
Taking a two-hour round-trip flight for vacation	Eating two beef-based meals per week for a year
Taking a 10-minute warm shower – 3 times a week	Taking a two-hour round-trip flight for vacation
Using a smartphone for a year	Taking a 10-minute warm shower – 3 times a week
Eating two beef-based meals per week for a year	Drinking a glass of milk every day for a year
Drinking a glass of milk every day for a year	Using a smartphone for a year
Shopping for one pair of jeans in a year	Shopping for one pair of jeans in a year

Source: Ericsson Consumer & IndustryLab, Consumers, the climate and ICT study (January 2020)
Base: Internet users aged 15–69 years old within Australia, Brazil, China, Germany, India, Malaysia, Russia, Saudi Arabia, South Africa, Spain, the UK and the US

When it comes to environmental action, female seniors are leading the way

Even though consumers do not have an entirely clear understanding of what constitutes a high environmental impact, concern for the environment and actions go hand in hand, where concern is associated with adoption of different strategies in daily life such as recycling, avoiding plastics and reducing waste. While national nuances significantly impact where consumers place their primary efforts, there are also both generational and gender differences to consider.

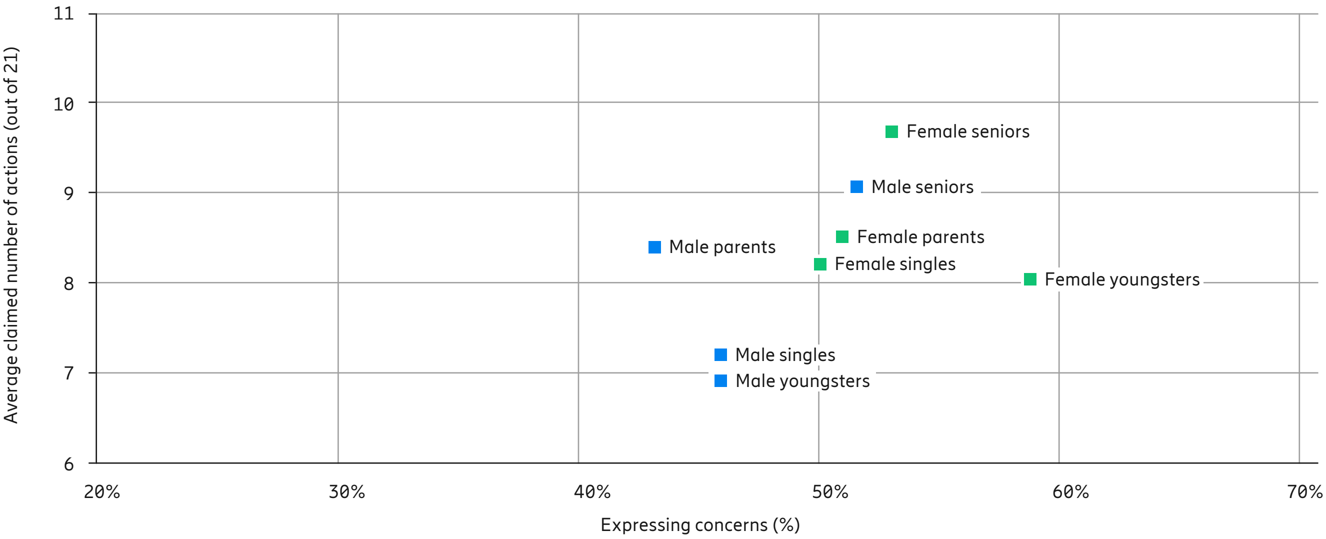
To explore this further, consumers were presented with a list of 21 actions, including buying eco-labeled goods and second-hand shopping as well as ways of optimizing electricity use in the home.

In mapping these activities against the levels of concern consumers have expressed for climate change, we see a clear picture of how concern and action plays out for different consumers. On average, consumers engage in eight or nine of these actions in their daily life. Interestingly, the consumers who not only express concern for the environment, but also report to taking significant steps in daily life to lessen their impact, are predominantly female seniors and retirees.

Contrastingly, young men report both low levels of concern and even lower levels of personal action, by comparison to young women. And though there are variations between the genders across the different generations, the gender difference between the younger generation is particularly noticeable. The gender disparity appears to follow underlying national and cultural nuances, as some countries in our study depict bigger gender differences than others.

It is worth noting that, although there are differences between consumers in terms of what or how much they do to mitigate personal impact, only 3 percent of consumers report not making any attempt. Even the least common activities reported by consumers, such as shopping second-hand, are done by around 20 percent of consumers globally. However, their reasons to act may differ, be it for environmental, financial, accessibility or health reasons.

Figure 4: Environmental concern in relation to daily actions taken to mitigate personal impact



Source: Ericsson Consumer & IndustryLab, Consumers, the climate and ICT study (January 2020)
Base: Internet users aged 15–69 years old within Australia, Brazil, China, Germany, India, Malaysia, Russia, Saudi Arabia, South Africa, Spain, the UK and the US

Expectations and opportunities with ICT

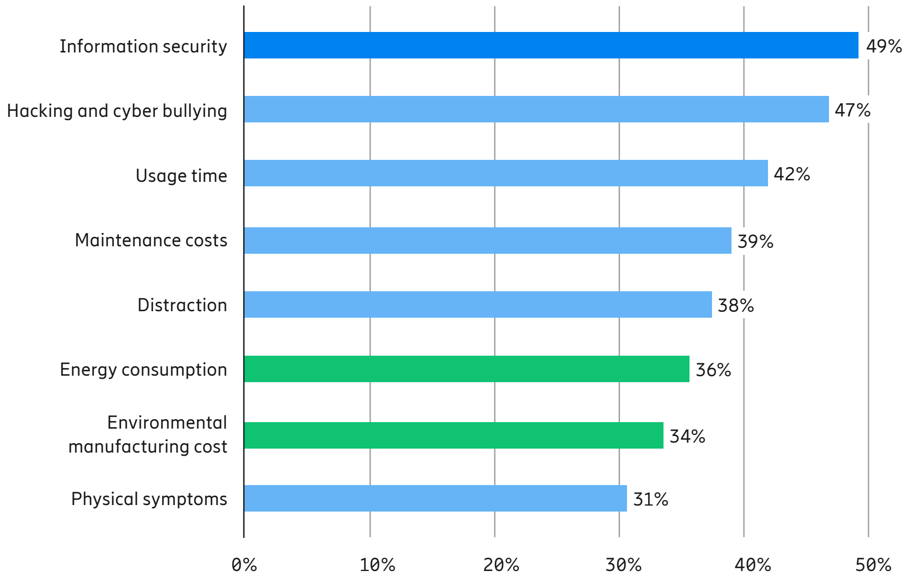
As consumers form their own strategies to mitigate personal environmental impact, do they see technological innovation as a means to address their personal environmental impact?

Although consumers express concerns around possible environmental impact of their ICT devices, specifically relating to the materials used to produce them as well as their energy consumption, one in two consumers see privacy and security aspects associated with them as a greater concern. Consumers also see the long-term benefits of technological innovations, as 46 percent consider them to be crucial in solving future environmental challenges.

Furthermore, 36 percent express interest in receiving guidance and recommendations from their devices on how to live more sustainably, which highlights the opportunity to support consumers in their personal mitigation strategies. To understand where consumers may benefit from ICT solutions, eight concepts were introduced covering food, transport, shopping and energy consumption. Some were clearly environmentally focused, but all targeted different aspects of daily life where consumers could be supported in making informed decisions.

What ultimately sways consumers towards one concept over another correlates with what actions they already take. However, on a general level, their underlying belief in technology itself factors in how much they believe the concepts can aid in making an impact. Hence, the 46 percent who see technological innovations as crucial for solving future environmental challenges express much higher interest in all eight concepts, compared to the respondents that do not hold the same belief.

Figure 5: Percentage of consumers who express concern for different aspects of their ICT devices



1 in 2

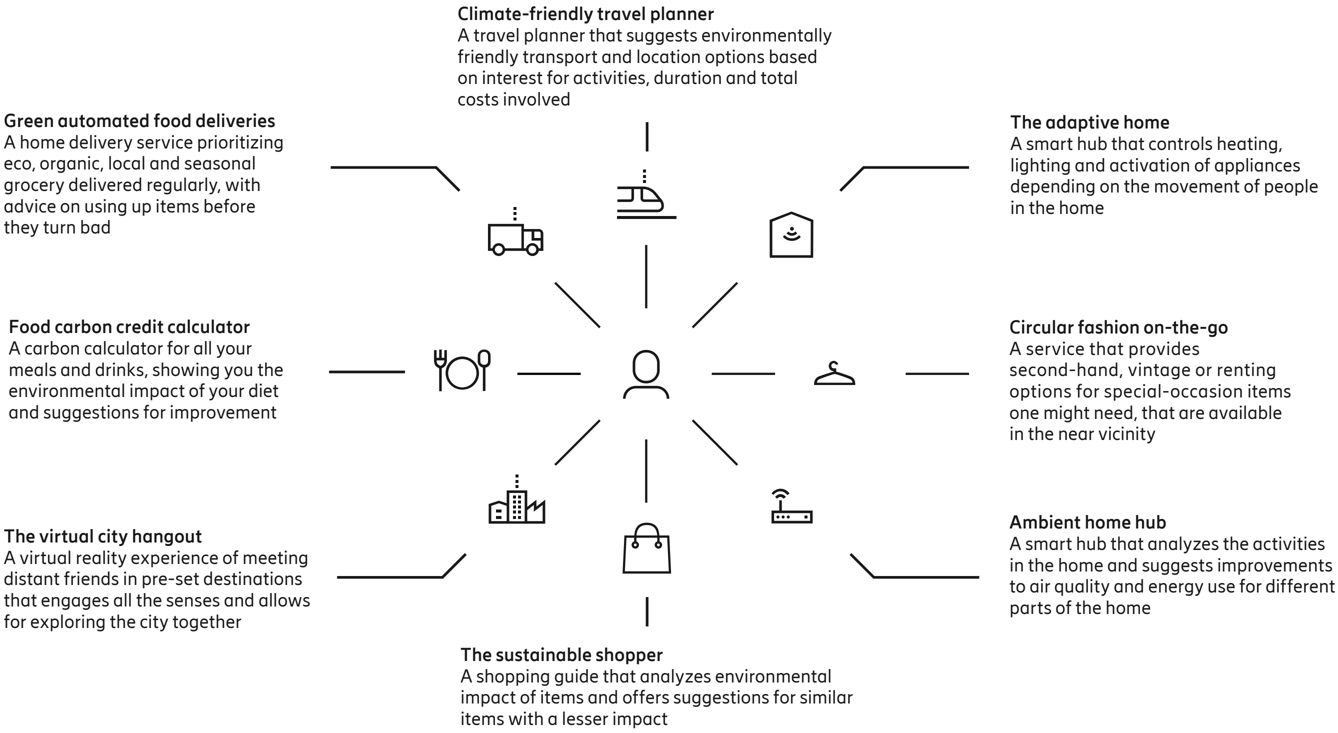
Half of consumers expressed concern with privacy and security of their ICT devices.

1 in 3

Environmental impact concerns one third of consumers.

Source: Ericsson Consumer & IndustryLab, Consumers, the climate and ICT study (January 2020)
Base: Internet users aged 15–69 years old within Australia, Brazil, China, Germany, India, Malaysia, Russia, Saudi Arabia, South Africa, Spain, the UK and the US

Figure 6: The eight ICT concepts



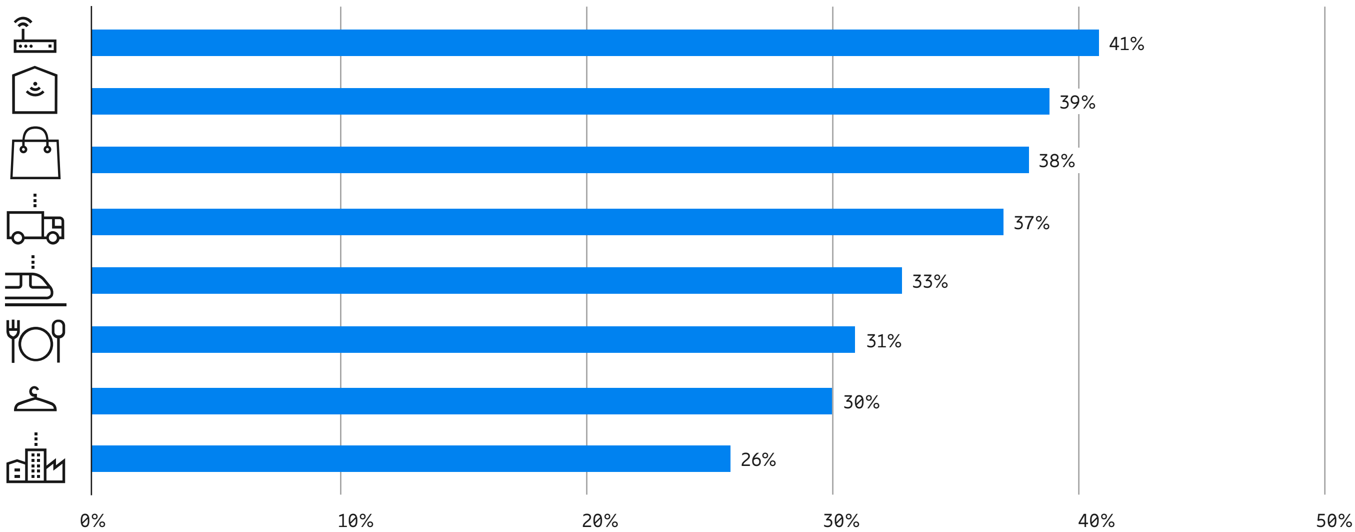
The highest-rated concepts among those with a strong belief in technology were related to the home. This may be due to the immediately relatable nature of their outcomes. Hence, 56 percent of consumers in this group are interested in the smart, ambient home hub which analyzes activity and suggests improvements to air quality and energy use for different parts of the home. This represents twice the level of interest when compared to those consumers who do not consider technological innovations to be crucial in addressing future environmental challenges.

The fact that the second-highest rated ICT concept among all consumers was also focused on the home suggests an opportunity to revitalize discussions around the smart home. Hence, smart home concepts should incorporate sustainability as the most interesting aspect, rather than media consumption or schedule management, to align with ongoing consumer strategies and introduce novel ways to improve them.

Of those not considering technological innovation as crucial, 27 percent expressed an interest in the adaptive home concept, compared to interest from 53 percent of those who do believe in the importance of technology. The concept features wall-embedded sensors to automatically adjust lighting, heat and home electronics based on the presence of family members.

Almost equalling the interest for home-related concepts were the sustainable shopper concept, which gives guidance on sustainably produced items, and the green automated food delivery concept, which helps to keep track of best-before dates for limiting food waste. Around one in two among those with a strong belief in technology expressed an interest in both concepts. Again, these consumers express almost twice the levels of high interest compared to the others.

Figure 7: Percentage of consumers interested in each of the eight concepts



Source: Ericsson Consumer & IndustryLab, Consumers, the climate and ICT study (January 2020)
Base: Internet users aged 15–69 years old within Australia, Brazil, China, Germany, India, Malaysia, Russia, Saudi Arabia, South Africa, Spain, the UK and the US

Values impact ICT preferences

Following consumers' underlying belief in technology itself, a second critical factor in how consumers approach the ICT concepts relates to their core values.

Consumers who express values such as caring for the wellbeing and equality of society, as well as preserving the environment, are more likely to act on their personal environmental impact in a multitude of ways. They tend to be more knowledgeable about the actual impact of their consumption habits and are keen to adjust their lifestyles to be more sustainable.

In contrast, consumers with values such as individuality, pleasure, appearances and materialistic success report fewer overall strategies for mitigating personal environmental impact. These consumers tend to prioritize having experiences and travel frequently for leisure. While not oblivious to the environmental challenges of today, their approach is carefree.

While consumers with these differing value sets report interest in the same concepts, their levels of and reasons for their interest differ greatly. Sixty percent of millennial consumers, who hold values favoring the wellbeing of society and the environment, expressed an interest in the green food delivery concept mentioned previously. Additionally, 60 percent of these cited the opportunities this concept provides to make environmentally sound decisions as their reason for interest. By contrast, only 17 percent of consumers who uphold individualistic and materialistic values expressed an interest in the same concept, and less than 30 percent of these cited an interest in making environmentally sound choices through this concept.

The fact that diet was one of the areas consumers struggled to identify as having a high environmental impact suggests an opportunity to reach these consumers by focusing on their needs, such as healthy living and convenience.

Consumers with values such as individuality, pleasure, appearances and materialistic success report fewer overall strategies for mitigating personal environmental impact.

Consumers who care for societal and environmental wellbeing are more likely to reduce their own environmental impact

The future of the environment — a way forward

There are numerous daily decisions that consumers can make to minimize their personal environmental impact — from conserving water and energy, shopping more locally and sustainably, to considering a green energy provider and choosing energy-efficient appliances. While consumers are, to varying degrees, trying to mitigate personal impact, the state of the environment and the climate continues to deteriorate. Thus, many increasingly find that it cannot be left to individual actions to truly protect the environment.

While almost half of consumers express an openness to ICT as an aid in their life, they are driven by different motivators, be it environmental or financial reasons, health, convenience, efficiency or novelty. But for ICT to be helpful to consumers in mitigating climate impact, it should address the aspects that drive their decision-making. And while consumers express an overstated concern for the possible environmental impact of their devices, a recent study[2] has illustrated that the largest impact of ICT lies in its usage; whether it is used for carbon mitigation or for maintaining unsustainable practices.

More profoundly, how and what consumers do to mitigate personal impact should be part of an overarching national sustainability agenda that engages levels of government, the business sector and other non-government agents.

The combination of national strategies and technological innovation as well as consumer drive and interest not only provide a framework where consumers can truly be part of a dedicated action plan, but also delivers on a core need — a collective action to protect the environment. At the time of writing, nations, businesses and consumers across the world are battling the severe human and economic impacts of the COVID-19 outbreak. As the world looks towards a reality after this pandemic, the opportunity arises for a national and economic recovery plan. Such a plan should look to rejuvenate previous initiatives of limiting the average global warming of the planet to 1.5 degrees, by scaling up global efforts exponentially.[3]

Previous research has shown that the most impactful areas in consumers' lives relate to their mobility and consumption habits as well as their housing situation. As technological innovation may be one of many tools to aid consumers in making environmentally sound choices in all these areas, it is up to decision-makers and the business sector to understand that there exist both expectations within consumers for a collective effort, as well as a drive to engage in it by the majority.

While consumers are trying to mitigate personal impact, the climate continues to deteriorate. Thus, it cannot be left to individual actions alone to truly protect the environment.

[2] Ericsson, A quick guide to your digital carbon footprint (February 2020)
[3] Exponential Roadmap: https://exponentialroadmap.org

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