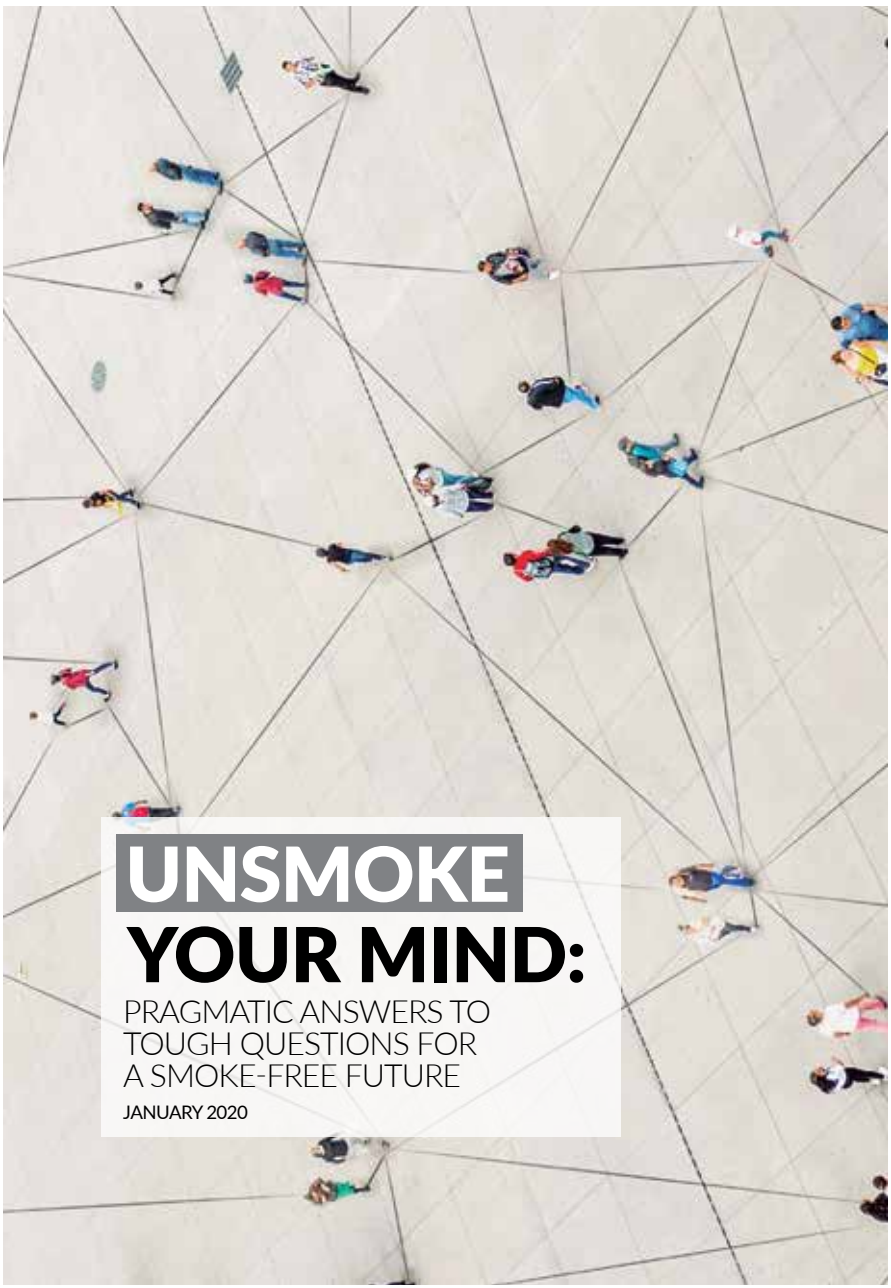
PHILIP MORRIS INTERNATIONAL



UNSMOKE YOUR MIND:

PRAGMATIC ANSWERS TO TOUGH QUESTIONS FOR A SMOKE-FREE FUTURE

JANUARY 2020

povaddo
inspiring insights


PM
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INTERNATIONAL

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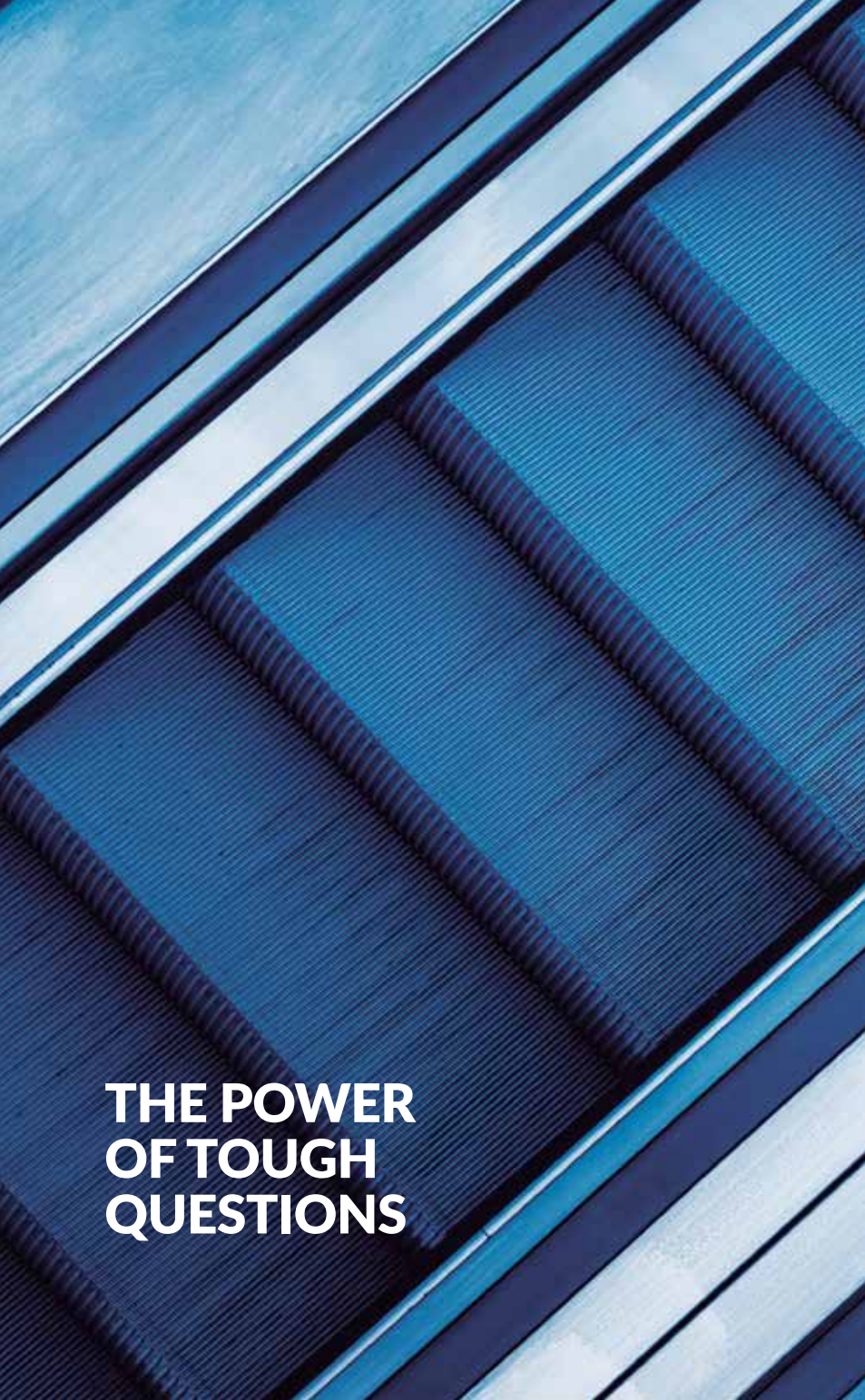


THE POWER OF TOUGH QUESTIONS

Ever since Philip Morris International (PMI) publicly declared its intention to give up smoking in January 2017, we've been besieged by tough questions. In fact, the questions started well before we sent that declaration rippling through the world's understandably skeptical media. And they came from our leadership and our employees.

We're not unique on this score. No company in the 21st century should assume it can simply carry on with the same products, the same business model and the same ethos it had in the past decade, let alone in the past century. No company can afford to sidestep the most challenging questions about its purpose and future. That applies especially to companies in controversial industries, including tobacco.

We already had been questioning ourselves intensively about our future for years before we set a new course in 2009 by investing heavily in an R&D facility in Neuchâtel, Switzerland—a brand new facility employing 400 scientists, engineers and others dedicated to developing less harmful alternatives to cigarettes. Could this enormous investment of people and resources realistically yield a product that would not only offer a lower risk than cigarettes but also satisfy adult smokers and shareholders? Six years after the facility opened, we piloted our first heat-not-burn product in Italy

and Japan and found that smokers were switching to it completely. Their abandonment of cigarettes created the opportunity for PMI to abandon cigarettes, as well.

So, our eyebrow-raising declaration in 2017 didn't come out of the blue. It wasn't just another "look at us" New Year's resolution destined to make a few headlines before getting washed away by the everyday tsunami that's the news in the modern era. PMI was already deeply invested in developing products that delivered the experience our customers sought but without the burning. That's an enormously important distinction because it's the burning, not the tobacco or nicotine, that creates the vast majority of the harmful and potentially harmful chemicals that are the primary causes of smoking-related diseases. Our scientists' thinking: Get rid of the burning, and you are on the path to reducing the risk for people who would otherwise continue to smoke.

We were gearing up for transformational change, but few people grasped how far our leadership intended to go. It's one thing to commit to innovation and develop a new product line alongside the core product line. It's quite another to commit to transitioning to that new product line with a goal of fully supplanting one's legacy product. Let alone to make that commitment in public.

Was that public pledge a step too far? Couldn't we have carried on making our transition in the shadows without deliberately exposing ourselves to the hostile questioning that was bound to come?

In truth, PMI had gotten used to avoiding the spotlight. Apart from our investor circles and business partners, few people were engaged in conversation with us. And so quietly getting on with developing innovative smoke-free products would have been our default position—and likely would have been a whole lot easier. However, it wouldn't have been as effective. To make a real impact, we needed to transform not just our company and products, but

also the attitudes and understanding of the wider world. We needed people to recognize the critical role these new products could play in helping to address the global public health problem of smoking.

Despite what people outside the company may imagine, employees of PMI are self-aware. We tend to question ourselves, to question each other and to be highly adept at imagining how outsiders are likely to question and contest whatever we say. This tendency is becoming more marked because growing numbers of employees at PMI are relatively new to the company and to the industry. Radical transformation requires not just a new mindset but new skill sets, new people. And so many of us were until very recently outsiders. We had our own hostile opinions, our own prejudices and preconceptions. When we were approached to join the company, many of us pushed back with a lot of tough questions—about the transformation, about PMI's true intentions, about the company's vision of a world without cigarettes. And we have never stopped.

The cultural and business transformation PMI is undergoing is built on transparency—on being open and honest about even the most uncomfortable questions. Not all these questions are easy to answer, but we know from experience that they are the keys to conversations that shift opinions and lead to real change.

Following that principle, this paper is structured into five sections, each one based on a tough question.

1. WE & ME

Do societies at large really care about smokers?

That's not a trick question—and the answer may be more complicated than you believe.

Smoking as a Public Health Concern

All over the world, people are facing critical public health issues. Globally, nine out of ten people have no choice but to breathe polluted air every day. Whether it's exhaust fumes from traffic, industrial emissions, cooking vapors, haze from burning trees and stubble, dust clouds whipped up by winds or microplastics, everybody has experience of air pollution. Everybody has seen shocking images of it blanketing cities and choking mask-wearing citizens. Recently, scientists have discovered that the situation may be even more dire than we'd feared, with potential links to brain cancer. No wonder that in a 2018 global survey commissioned by PMI, respondents rated air pollution as the most important public health issue requiring government time and resources. The World Health Organization (WHO) agrees, ranking air pollution, together with climate change, as the greatest threat to global health.

Mental health problems are another public health emergency increasingly in the headlines and on people's minds. Whether it's depression, anxiety, dementia or another condition, the WHO reports that one in four people will be affected by a mental or neurological disorder in their lifetime. Respondents to the 2018 survey recognized the urgency of the problem, ranking mental health only marginally behind air pollution as an important issue to which governments should devote time and resources.

Another highly visible public health issue is obesity, with its related complications of diabetes, high blood pressure, stroke, heart disease, cancer and osteoarthritis. The WHO reports that more than 1.9 billion adults worldwide were overweight in 2016, including 650 million who were clinically obese. Struggling to manage weight is a "double whammy" issue that has negative effects on psychological well-being as well as physical health.

Other public health threats rise and fall in public awareness, depending on the vagaries of the news cycle. Always just below the surface are fears of the next pandemic, the sort of horrific diseases that provide the plot lines for panic movies. It could be a known pathogen such as Ebola or influenza, or maybe a killer bug that's being developed in a lab somewhere. This health threat is linked to the alarming rise of antimicrobial resistance, whereby bugs have evolved to shrug off drugs, potentially making previously curable infectious diseases untreatable.

The common feature of most of these public health concerns is that they feel like they are beyond the control of individuals, governments and health authorities. What's more, in each case the threat to individuals and communities appears to be worsening. This stands in contrast to perceptions of smoking. In the 2018 survey, respondents were asked to rate the importance of nine public health issues. Looking at the scores for "very important" and "somewhat important," smoking sat at the bottom, alongside opioid abuse. That's telling, given that opioid abuse is an issue that, thus far, is concentrated in the United States. It's also worth noting that nearly one in five respondents (19 percent) said they consider

Public Health Concerns

In a 2018 survey commissioned by PMI and fielded by a global leader in market research in 31 countries (n=10,000+), respondents were asked to rate the importance of governments devoting time and resources to each of nine issues. By comparing the ratings, we can rank the issues in this order of perceived importance:

1. Air pollution
2. Mental health
3. Sexually transmitted diseases
4. Healthier food products
5. Alcohol consumption/ binge drinking
6. Obesity
7. Unwanted pregnancies/ family planning
8. Smoking (tie)
8. Opioid abuse (tie)

it “not very important” or “not important at all” that the government address the issue of smoking.

The lower ranking of smoking on this list as an issue the government should address is at odds with the actual impact of cigarette-related diseases. It may be that people feel current government initiatives in this area are sufficient, not being aware of the large numbers of people who continue to smoke.

The Denormalization of Cigarettes

Globally, the prevalence of smoking has fallen significantly in recent decades, although progress has not been evenly distributed across geographies and populations. One consequence of these overall reduced rates is that nonsmokers are less likely to have regular social contact with smokers. Smoking has been banned from enclosed public places in many countries, so nonsmokers are much less often exposed to cigarettes against their will. At the same time, smokers are more aware that their smoking bothers nonsmokers, so they go outside to smoke or to a separate area. And, as the zeitgeist has shifted against smoking, it has also become increasingly less common to see it in movies and TV shows. In many communities in many countries, it could be argued that smoking has been “denormalized.”

The net effect of all this is that smoking has become a background issue for growing numbers of nonsmokers. In countries where smoking in public places is restricted or banned, nonsmokers are rarely if ever exposed to cigarette smoke for more than a moment on the odd occasion. For people old enough to remember when smoking was a social norm, the change has been huge. Nonsmokers can ride public transportation and go to bars and restaurants knowing that there will be no cigarette smoke. They won’t come home with their hair and clothes smelling of other people’s smoke.

Consequently, for many nonsmokers the hazards of cigarettes are now other people's problem. It's not their concern. And they may well have concluded that smoking is well in hand as a public health issue. Out of sight, out of mind.

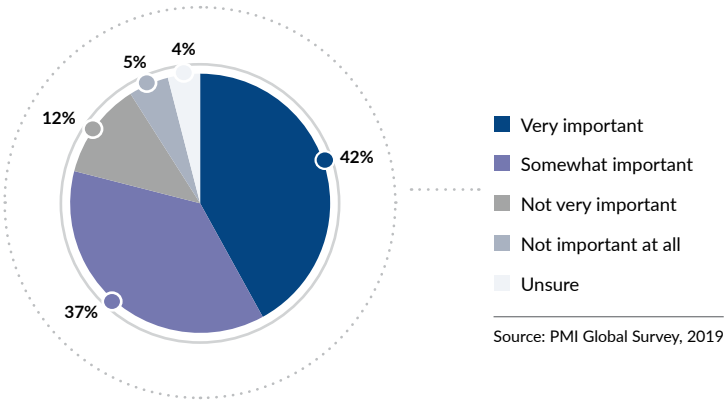
The reality is far different. While the percentage of particular populations smoking is declining, globally the number of smokers overall has increased due to population growth. And even in countries where antismoking initiatives have had a big impact, there are still many smokers. For example, in the U.K., after years of consistent reductions, 14.7 percent of the population were smokers in 2018, which equates to around 7.2 million people. In the U.S., cigarette smoking has fallen to its lowest point in recorded history, but around 34.3 million people still smoke. Even at current rates of progress, it will take many more years to reduce these percentages to low single figures.

So, Do Smokers Really Matter?

And now back to that tough question: Do societies at large really care about smokers? After all, if you aren't a smoker yourself and don't live with a smoker, how affected are you by the issue?

In a 2019 survey of 17,251 adults in 14 countries, we asked respondents: *How important do you believe it is for the government to dedicate time and resources to efforts to reduce smoking rates?* A big majority of 79 percent rated it important (42 percent, very important). Government efforts to reduce smoking rates were deemed important by even more nonsmokers (81 percent) than smokers (71 percent). This suggests that, yes, societies do care what happens to smokers. They want governments to make a serious effort to reduce smoking rates.

HOW IMPORTANT DO YOU BELIEVE IT IS FOR THE GOVERNMENT TO DEDICATE TIME AND RESOURCES TO EFFORTS TO REDUCE SMOKING RATES?



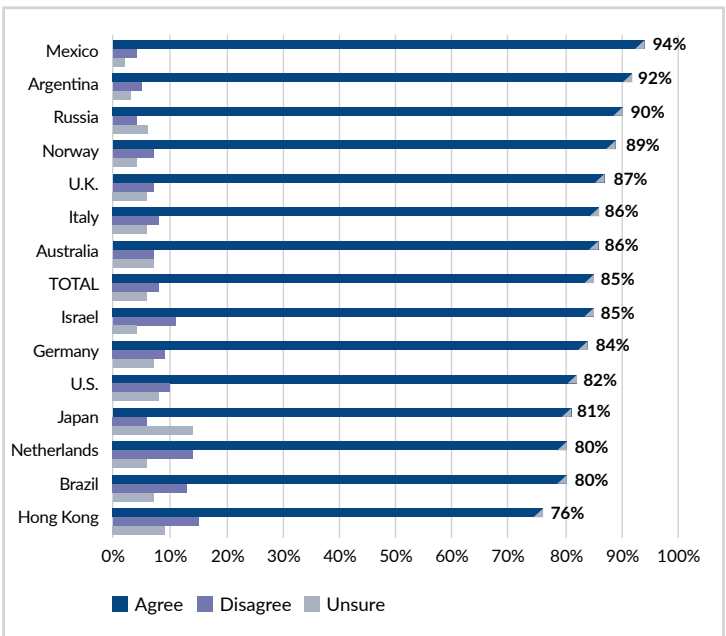
Source: PMI Global Survey, 2019

For us at PMI, this is an encouraging finding. The more governments work to reduce smoking rates, the quicker we can progress toward a smoke-free future. However, the finding leaves us with at least two important practical questions.

First, how might those ratings translate into political mandates? Would equally high percentages of voters support candidates who are committed to spending more taxpayer money on reducing smoking rates? Second, what kinds of efforts would they support in practice? Prohibitive measures such as monetary fines certainly send a message that smoking is an antisocial activity the authorities wish to discourage. But do they work? Experience shows that the threat of penalties, even harsh ones, does not completely prevent people from engaging in undesirable behavior. Might a "carrot" approach work in unison with "sticks"?

In our 2019 survey, we asked respondents to rate their agreement with the statement: *Smokers who would otherwise*

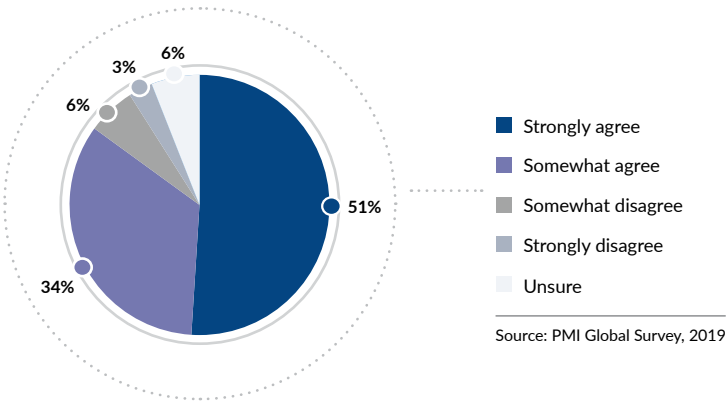
SMOKERS WHO WOULD OTHERWISE CONTINUE SMOKING CIGARETTES SHOULD HAVE ACCESS TO, AND ACCURATE INFORMATION ABOUT, SMOKE-FREE ALTERNATIVES.



continue smoking cigarettes should have access to, and accurate information about, smoke-free alternatives. Overall, 85 percent agreed, including 51 percent who agreed strongly. With the exception of Hong Kong (76 percent), agreement levels were consistently above 80 percent across the 14 countries and across subgroups of gender, age, smokers and nonsmokers, and educational levels.

Support in the survey also was strong, albeit less emphatic, for the statement: *Encouraging adult smokers who would otherwise continue to smoke cigarettes to completely switch to smoke-free alternative*

SMOKERS WHO WOULD OTHERWISE CONTINUE SMOKING CIGARETTES SHOULD HAVE ACCESS TO, AND ACCURATE INFORMATION ABOUT, SMOKE-FREE ALTERNATIVES.

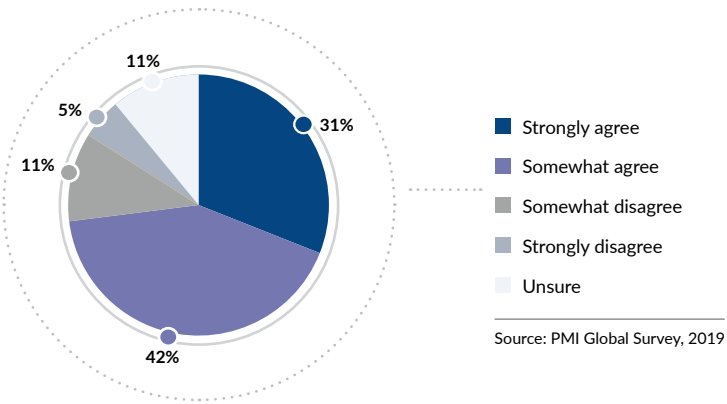


Source: PMI Global Survey, 2019

products can complement other efforts to reduce the societal harm caused by smoking cigarettes. Overall, 73 percent agreed (including 31 percent strongly), while only 16 percent disagreed.

It's clear from these findings that the public at large does indeed care about the issue of smoking and would like to see more done to reduce or even eliminate the problem. Far from being seen as a marginal worry—a personal choice that affects only a small minority in most places—cigarette smoking is seen as a social ill and public health concern that needs to be addressed more effectively than it is at present.

ENCOURAGING ADULT SMOKERS WHO WOULD OTHERWISE CONTINUE TO SMOKE CIGARETTES TO COMPLETELY SWITCH TO SMOKE-FREE ALTERNATIVE PRODUCTS CAN COMPLEMENT OTHER EFFORTS TO REDUCE THE SOCIETAL HARM CAUSED BY SMOKING CIGARETTES.



Source: PMI Global Survey, 2019

2. SCIENCE ILLUMINATES, SCIENCE BLINDS

Do consumers take scientific evidence seriously or do they disregard “science” as just another marketing trick?

A utopian dream of the internet was that everybody would have direct access to high-quality information from anybody, anywhere. That dream has certainly come true. Anyone with patience, skill and an internet connection can consult treasure troves of groundbreaking scientific discoveries. They can click on links, chase up references and build up a detailed, complex and nuanced overview of any field. They can mine the thinking of experts.

There's a dark flip side to that utopian internet dream, however. Everybody also has direct access to poor-quality information, misinformation and outright disinformation from anybody, anywhere. In fact, it turns out that in the attention-based ecosystem of the internet, detailed, complex and nuanced perspectives don't cut it for most people. High search rankings go to perspectives that are simple, sensational and emphatic: "New study shows that X causes/cures Y!"

The Rise of Sham Science …

In the last two decades, the available media space has expanded exponentially, creating masses of content and competition for consumer attention. To attract clicks, publishers are constantly on the lookout for eye-catching stories—including ones that touch on people's hopes and fears about their health. The credibility of such stories is boosted by quotes and research from academics and in particular university-affiliated scientists. These sources contribute enormously to the insights and data available on a broad array of topics. However, in addition to the thousands of legitimate scientific journals in existence, there's a growing industry of "predatory publishers" who offer publication for a fee but without the quality safeguards of peer review and editing. This has given rise to two overlapping phenomena: pseudoscience and fake science.

Pseudosciences attract mainstream audiences but are not recognized as "proper" sciences. Think: astrology and homeopathy. Many of

the claims made in these fields seem to be centered in evidence and systematic study but in practice don't stand up to scientific scrutiny. In contrast, fake science makes claims in areas already covered by proper sciences, but with "evidence" that is either deliberately misleading or does not meet accepted standards of scientific method and validation.

For a high-profile and consequential example of fake science, it's hard to beat the 1998 paper on a purported link between the measles-mumps-rubella (MMR) vaccine and autism. As the WHO advises, "The study … was later found to be seriously flawed and fraudulent. The paper was subsequently retracted by the journal that published it, and the doctor that published it lost his medical license." In the meantime, the story was picked up by the news media, and fears about vaccination took root and spread. More than two decades later, this flawed scientific report is continuing to affect behavior, resulting in significant drops in vaccination rates. Among other consequences, the National Institutes of Health warns that a decline in measles vaccination is causing a global resurgence of the preventable disease. The Wellcome Trust, a research charity based in London, reported in 2019 that only 72 percent of people in Northern America and 59 percent in Western Europe agree that vaccines are safe.

… And the Decline of Trust

Perpetuating people's unfounded fears of vaccination—and undermining confidence in official reassurances—are suspicions that there are high-level conspiracies to vaccinate people against their will. While many of these theories—such as airlines vaccinating unsuspecting passengers through their ventilation systems—may strike most of us as absurd, it's valuable to reflect on why some people are willing to believe them. In recent decades, trust in institutions of all kinds has dropped—not only with regard to the pharmaceutical industry but also the food industry, the tech industry, the media and public authorities such as the police and governments. Whose trust in information has not been affected in some way by the suspicion that there are things that "they" don't want people to know?

In an environment in which people are unsure whom to trust—if anyone—how does anyone make sense of all the "scientific" (real or fake) information out there? The reality is that most people accept what they read in headlines or news summaries, albeit with a bias toward information that's in sync with their general views and assumptions. Few people have the inclination (or expertise) to dig into the original research, check references and evaluate conflicting claims.

The Criticality of Science at PMI

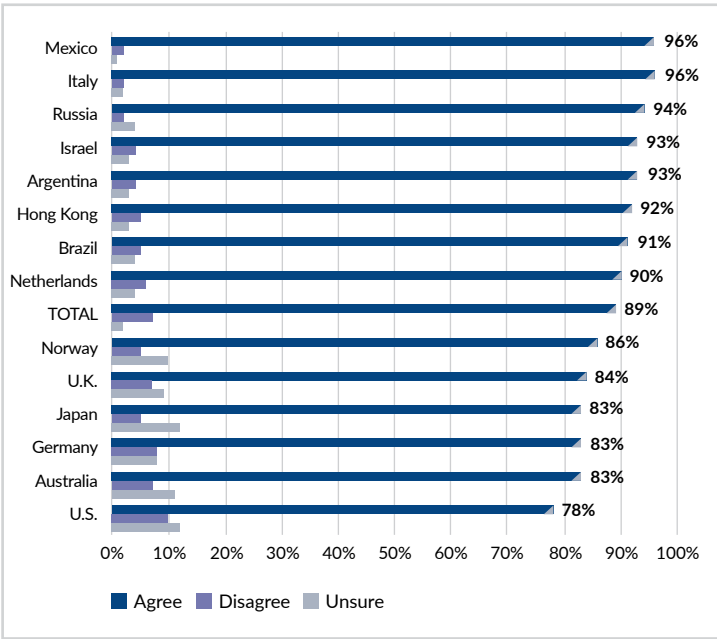
With so much science and science-y material pouring into people's media diets, there's a serious risk of Gresham's Law prevailing—of bad science driving out the good. There's a serious risk that non-experts will come to consider most science flimsy and flaky and just another sales trick.

This is worrying for PMI. The quality of our science and technology is central to our ability to achieve a smoke-free future. We have invested massively in high-quality talent and facilities to develop innovative smoke-free products that offer smokers a satisfying and better alternative to cigarettes. And we have set high standards for ourselves, using scientific methods inspired by the pharmaceutical industry, to ensure our processes are rigorous and trustworthy.

So back to that tough question: Do consumers take scientific evidence seriously or do they disregard "science" as just another marketing trick?

In our 2019 global survey, we asked respondents to rate their agreement with the statement: *Before introducing e-cigarettes and heat-not-burn tobacco products to consumers, manufacturers must conduct robust scientific assessments on their products.* It's no surprise that overall 89 percent agreed, including almost two-thirds (65 percent) who agreed strongly. What is surprising is the number of respondents in highly developed countries who disagreed or were unsure about whether robust scientific assessment was necessary. The hot spots of disagreement were Germany (8 percent) and the United States (10 percent), while the "unsure" emerged from Australia (11 percent), Germany (8 percent), Japan (12 percent), Norway (10 percent), the U.K. (9 percent) and the U.S. (12 percent).

BEFORE INTRODUCING E-CIGARETTES AND HEAT-NOT-BURN TOBACCO PRODUCTS TO CONSUMERS, MANUFACTURERS MUST CONDUCT ROBUST SCIENTIFIC ASSESSMENTS ON THEIR PRODUCTS.



It's perplexing that anyone would be unsure about the need for manufacturers to conduct robust assessments of their cigarette alternatives, let alone disagree with the need. One possible explanation is that these respondents don't trust science in general or perhaps just the findings that come from an interested party.

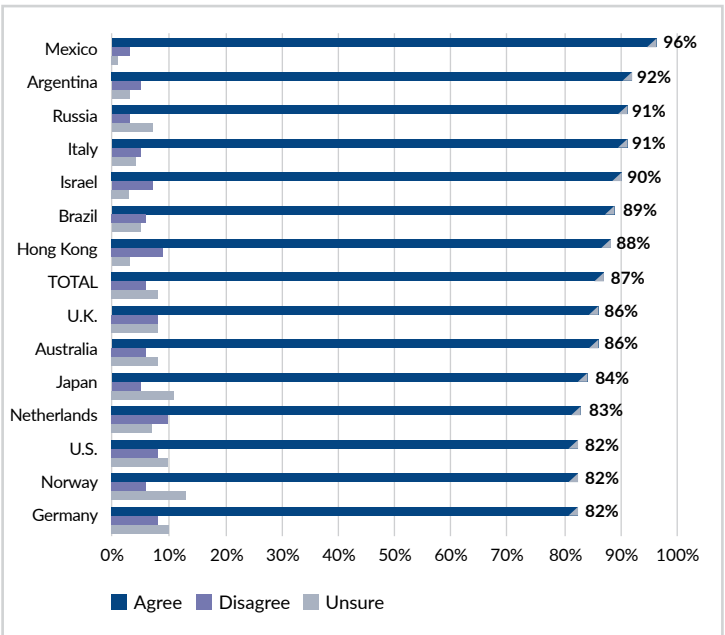
In another science-related question in our 2019 survey, we found similar patterns of response. The survey asked respondents to rate their agreement with the statement: *When developing regulations, governments, regulators and public health bodies should consider the current science relating to e-cigarettes and heat-not-burn tobacco*

products. Overall, 87 percent agreed, including more than half (54 percent) who agreed strongly, while 6 percent disagreed and 7 percent were unsure.

The hot spots of disagreement were Germany (8 percent), Hong Kong (9 percent), the Netherlands (10 percent) and the U.S. (8 percent). The most "unsure" were Germany (10 percent), Japan (11 percent), Norway (13 percent) and the U.S. (10 percent).

The upshot: There is overwhelming agreement, in all the countries surveyed, that governments need to take current science into

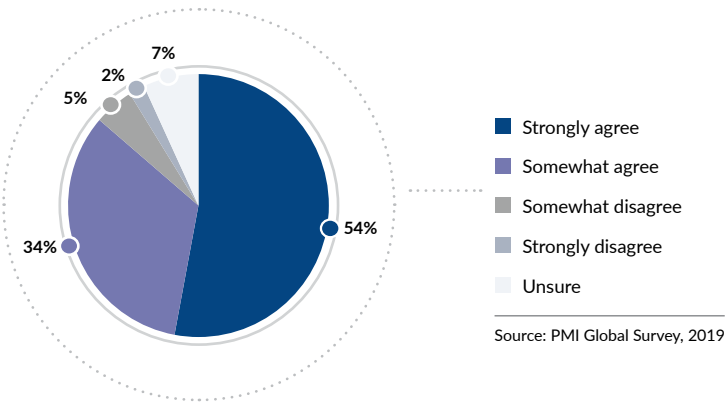
WHEN DEVELOPING REGULATIONS, GOVERNMENTS, REGULATORS AND PUBLIC HEALTH BODIES SHOULD CONSIDER THE CURRENT SCIENCE RELATING TO E-CIGARETTES AND HEAT-NOT-BURN TOBACCO PRODUCTS.



account when developing regulations for e-cigarettes and heated tobacco products. Even respondents in Germany, Norway and the U.S., the countries with the highest levels of disagree plus unsure, returned 82 percent agreement.

The question remaining is why anyone would not want governments and health authorities to take the most up-to-date science into account when making decisions affecting such a large population. As seen in the next section, perhaps the answer lies in the current deficit of trust.

WHEN DEVELOPING REGULATIONS, GOVERNMENTS, REGULATORS AND PUBLIC HEALTH BODIES SHOULD CONSIDER THE CURRENT SCIENCE RELATING TO E-CIGARETTES AND HEAT-NOT-BURN TOBACCO PRODUCTS.



Source: PMI Global Survey, 2019

3. THE AGE OF MISTRUST

How does (mis)trust affect attitudes toward smoke-free alternatives?

It has become accepted wisdom that trust in major institutions has declined, including trust in government, politicians, the media and industries such as tech, pharma and finance.

However, this gloomy generalization is not the whole story.

Edelman's 2019 Trust Barometer, conducted among more than 33,000 people in 26 markets, found that net trust scores had risen from 2018 levels, albeit marginally. Fifteen of 26 markets were classified as "distrusters," an improvement from the 18 such markets identified in 2018. Government and media continued to be the most distrusted bodies, and distrust in social media is now particularly marked in Europe, the U.S. and Canada. There was some good news for business: "Business" emerged as neutral on balance, but familiarity appears to have bred the opposite of contempt. "My employer" stood out as the most trustworthy body, trusted by 75 percent of those employed.

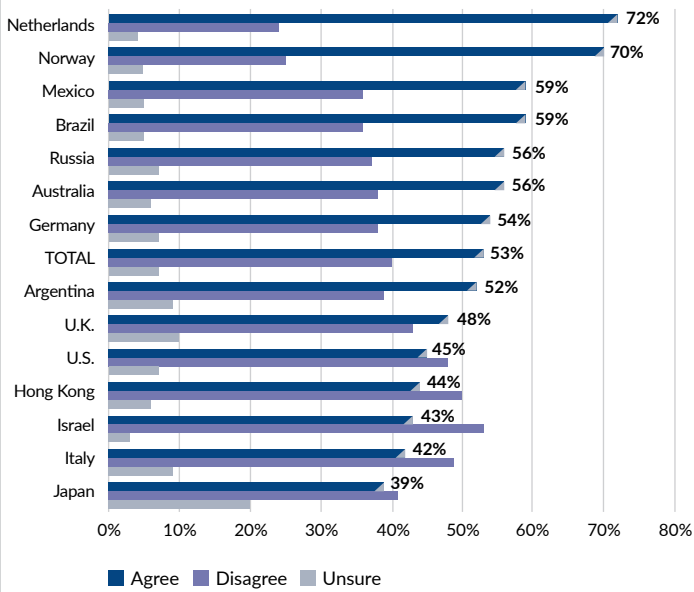
There's also positive trust news for science. The Wellcome Global Monitor Trust in Scientists, based on a survey of more than 140,000 respondents in 144 countries, found that globally 18 percent of people trust scientists at a high level, 54 percent at a medium level and just 14 percent at a low level. The highest levels were returned by Northern Europe (33 percent), Australia and New Zealand (33 percent), Central Asia (32 percent), Northern America (26 percent) and Western Europe (24 percent).

Turning to trust metrics in PMI's 2019 survey, we asked respondents to rate their agreement with several statements relevant to this subject. The broad, general statement "I trust government to make recommendations for my safety" elicited some surprising responses. Overall, 53 percent agreed they trusted government's safety recommendations, but 40 percent disagreed and 7 percent were unsure. Behind these figures are strikingly wide differences between countries.

The highest trust in government safety recommendations was found in the Northern European countries of the Netherlands (72 percent) and Norway (70 percent). Other countries in positive trust territory were Mexico and Brazil, both scoring 59 percent. At the other end of the scale, with minority trust levels, were Hong Kong (44 percent), Israel (43 percent), Italy (42 percent), Japan (39 percent) and the U.S. (45 percent).

These point-in-time numbers may well reflect people's overall feelings about their country's government both in general and at the time of the survey. They may be influenced by long-term factors such as base-level trust in government (e.g., positive in the

I TRUST GOVERNMENT TO MAKE RECOMMENDATIONS FOR MY SAFETY



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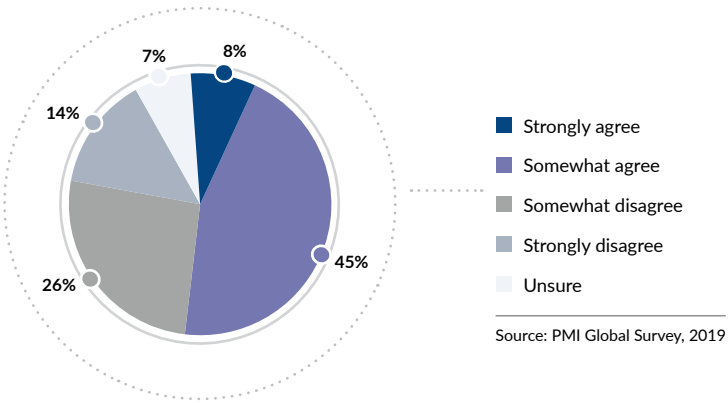


Source: PMI Global Survey, 2019

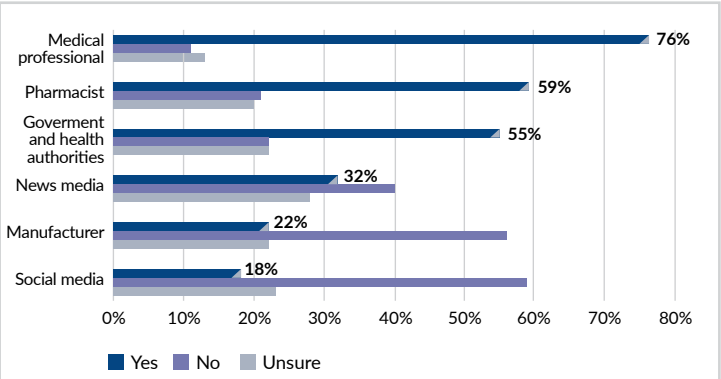
Netherlands, negative in Italy, polarized in the United States) and how those factors interact with current events (e.g., anti-government protests in Hong Kong, the ongoing political crisis in Israel).

In Doctors We Trust

We also looked more specifically at whom respondents trust to give them accurate information about available alternatives to cigarettes.

Across the sample, medical professionals were accorded by far the highest level of trust, with more than three-quarters of respondents agreeing that they would trust them to provide accurate information about e-cigarettes and heated tobacco products. This should come as no surprise, given that doctors are consistently rated as among the most trusted professionals in the world. In that context, it's noteworthy that no less than 11 percent of respondents to the PMI survey did not regard medical professionals as trustworthy sources of information about smoking alternatives, and another 13 percent were unsure. This bears highlighting. Almost a quarter of respondents did not

DO YOU CONSIDER EACH OF THE FOLLOWING TO BE A TRUSTWORTHY SOURCE OF INFORMATION ON ALTERNATIVES SUCH AS E-CIGARETTES AND HEAT-NOT-BURN TOBACCO?



trust medical professionals to provide reliable information about alternatives to smoking.

A majority of respondents (59 percent) considered pharmacists to be a trustworthy source of information about smoking alternatives, but 21 percent did not and 20 percent were unsure. A slightly smaller majority (55 percent) regarded government and health authorities as trustworthy on this topic, but 22 percent did not and 22 percent were unsure.

Negative levels of trustworthiness were the order of the day for news media, manufacturers and social media.

Trust vs. Exposure

The survey did not ask which of these six sources respondents would be most likely to consult for information on alternatives to cigarettes. Only 19 percent of the survey sample (n=3,330) were smokers, and so it's unlikely that most respondents would have reason to seek out information about cigarette alternatives, unless it were on behalf of a friend or loved one.

And while what medical professionals and pharmacists have to say about cigarette alternatives may well be regarded as highly trustworthy, how many people—nonsmokers especially—are likely to have consulted them about the issue? Conversely, the news media, manufacturers and social media—which suffer from low levels of trust in this regard—are likely to have far greater exposure among consumers in general. And so, the most trusted opinions may be the most muted.

Better Products, a New Pathway to Trust

This brings us back to the tough question that opened this section: How does (mis)trust affect attitudes toward smoke-free alternatives?

Trust is a tricky thing—and the rules vary by industry. Trust in combustible cigarettes was breached decades ago, when the medical evidence established that the use of these products carries inherent and serious health risks. Everyone now knows that cigarettes are harmful and addictive. And so whatever level of trust smokers have in their preferred cigarette brands has to do not with long-term safety, but with taste, consistency or some other factor. The inherent dangers are known.

This context is different for smoke-free alternatives—which, though a better choice than continued smoking, are not risk-free

and contain nicotine, which is addictive. For most people—the nonsmoker majorities in most countries—smoke-free alternatives such as e-cigarettes were not a top-of-mind issue until quite recently. Headlines stemming from the recent incidents of vaping-related lung illnesses in the U.S. have given more people reason to pay attention to e-cigarettes and to question these products' safety and trustworthiness, even if they're not a product they would use themselves.

And so, paradoxically, trust has become an even more important issue for PMI at a time when it is transitioning to products that are being developed to be less harmful than continued smoking. We will continue to invest in our rigorous scientific assessments and to adhere to high benchmarks of transparency, accuracy and integrity to earn that trust.

Only time, experience and external scrutiny can adequately address people's concerns and build trust in these products as superior alternatives to cigarettes. It will take time, too, to convince skeptics of PMI's commitment to a smoke-free future.

Unsmoking the World

We know that earning the trust of civil society will take far more than announcing our commitment to a smoke-free future. We must demonstrate that these products can contribute to reducing smoking prevalence, with net benefits for the public health.

As we work to unsmoke the world, we will continue to broadcast our three-part #unsmoke message, which directly reflects our corporate position:

- If you don't smoke, don't start.
- If you smoke, quit.
- If you don't quit, change.

It's hard to disagree with those points, but it's also easy to see why the message might be greeted with skepticism, coming from a company that is continuing to sell combustible cigarettes as it transitions to its smoke-free future. Some will dismiss it as a PR stunt, but there are solid commercial reasons for unsmoking the world. We encourage our supporters and critics alike to monitor the progress we're making on our business transformation metrics.

4. THE PROMISE AND THE THREAT OF WHAT'S NEW

How can we be confident that innovations will be better than what they replace?

We love new things and can't resist bringing them into our lives. We jump at some of the new features and accept the tradeoffs they bring, but sooner or later, for many of these products, feelings of doubt and unease grow. What is the true cost and impact of this new thing? What are we losing? Could we have anticipated and perhaps ameliorated the downsides?

The smartphone is a classic example of our ambivalent relationship with innovation.

There was a time when phones (landlines) were tethered to a location. Then came personal cell phones. They made it possible to make and take calls anywhere with a signal, which was far from everywhere. Despite their coverage limitations, burdensome weight and inadequate battery life, through the 1990s and into the 2000s they became the product everybody wanted. Sales soared. And then some users began to worry that radio waves from their mobile phones might be interfering with their brain waves. There were even media reports that radiation emitted by these devices could destroy brain cells and lead to dementia. But sales continued to soar and worries about the radio waves apparently had little effect on consumers' appetite to buy and use their mobile phones.

Next came smartphones. The Blackberry 6230 was released in 2003. A few years later, the first iPhone was launched, shaking up the market. The more innovations smartphones offered (e.g., social media, music, podcasts, videography, TV, streaming movies), the more integral they became to modern life. And the more people began to worry about the potential effects these devices could be having on users and society. Were they having a negative impact on people's ability to think and concentrate, on their social skills, on their sleep, on parenting, on their anxiety levels (to name but five of many concerns)? Yet even people who worry about such things still find it hard to resist this new technology. Sales for 2020 are forecast to reach 1.4 billion.

New Wonders, New Worries

In virtually every aspect of life, there's scope for inventive people to create new products and services. And because these innovations typically are created to make things quicker, easier, more convenient, more economical, more effective, more efficient and all around more appealing, they're very hard to resist.

Inevitably, though, amid the headlong rush to adopt new products and services, there comes a yearning to resist, to recover what's lost, to revert to what's local, to what's simple, to what's traditional. We can see that in the way some people currently are making a point of cooking with fresh ingredients rather than simply watching cooking shows while eating ready-made meals. Others are making a point of reading physical books printed on paper rather than digital books on an e-reader, of writing a letter with pen and paper rather than sending an email. There are similar urges to listen to vinyl LPs rather than streaming digital music, to use a film camera rather than a digital camera, to shop only in physical stores rather than online—in short, to live analog rather than digital.

A few determined souls may resist the siren call of the new and shiny, but most of us don't. Faced with attractive innovations, people are inclined to adopt first and ask the deep questions later, if at all. Over the centuries this was the case with disruptive innovations such as gunpowder, printing, steam power and automobiles. It's even more the case now that news of innovations spreads fast through the internet, and products can be bought and sold across borders with a few taps on a keyboard.

E-Scooters and E-Cigarettes

As long as new products and services are not specifically limited by regulations, they spread to wherever there is demand for them. This has been the case with e-scooters, which offer a novel solution to getting around congested cities ("Less effort than a bicycle, more convenient than buses and less polluting than cars"). City and national authorities are having to play catch-up, drafting regulations to keep the mobility benefits of e-scooters while reducing the nuisance and risks of injury they can cause. That's also been the case with rideshare platforms such as Uber and Lyft, which (in theory) help to improve traffic flow, save money and reduce environmental impact, and with Airbnb, the platform that enables travelers and hosts to arrange short-term stays. In both cases, local and national authorities have had to examine the knock-on effects of these new services and decide on regulations to minimize the negatives while retaining the positives.

From a regulatory perspective, e-cigarettes (aka vapes) are in a similar situation to e-scooters. They are arguably the first breakthrough innovation in their industry for many decades, and they represent a possible better way forward. However, while these products arguably can present a better alternative to continued smoking, they have also triggered legitimate concerns—from questionable safety and quality standards for some products to their use by unintended audiences. In the U.S., the media have widely reported on valid concerns around youth uptake of these products.

During 2019, perceptions of both e-scooters and e-cigarettes were influenced by negative events that prompted scary headlines.

In the case of e-scooters, there have been sporadic reports of accidents and fatalities in various cities around the world. To

date, there has been no wide-scale collation of e-scooter injury numbers, let alone any robust analysis of how such numbers may compare with those for cars, bikes, motorbikes and public transportation in the same locations. However, from a media and public perception perspective, those other modes of transport are familiar, so the risks tend to be accepted. By contrast, e-scooters are new and unfamiliar, so any injuries or bad practices involving them tend to generate eye-catching scare stories. A case in point: the July 2019 death of a TV presenter in London. This appears to have been the first e-scooter fatality in the U.K., and it made high-impact news as far away as California.

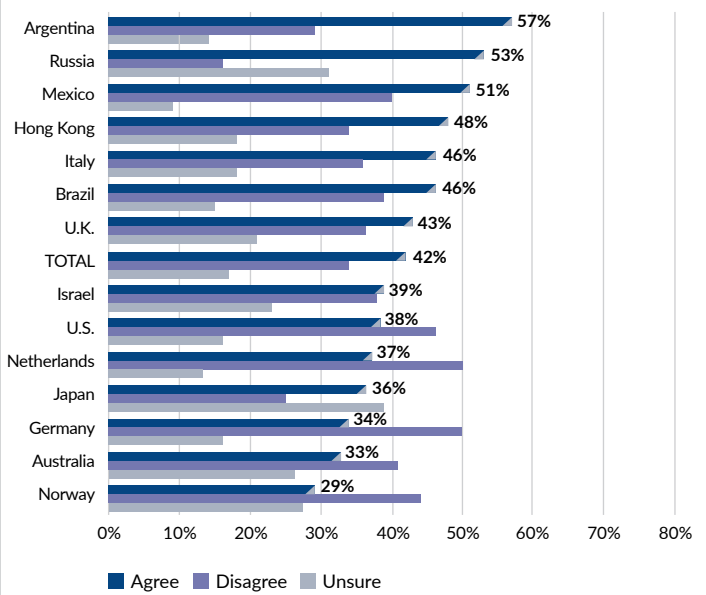
Far more alarming is the recent outbreak of lung illness linked to vaping in the U.S. The U.S. Centers for Disease Control (CDC) has reported (as of Dec. 27, 2019) a total of 2,561 hospitalized EVALI (e-cigarette, or vaping, product use-associated lung injury) cases, starting in June and peaking in September. The headlines from the U.S. echoed around the world, causing consternation and panic, and prompting authorities in some countries to crack down on smoke-free alternatives despite the fact that very few vaping illness or deaths have been reported outside the U.S.

The latest findings from the CDC (as of Dec. 20, 2019) show that vitamin E acetate, an additive in some THC-containing vaping products, is closely associated with EVALI. Investigations are ongoing. For now, the CDC and FDA recommend that people should not use THC-containing e-cigarette, or vaping, products, particularly from informal sources like friends, family, or in-person or online sellers.

Innovation Is Inherently Uncertain

So, back to that tough question at the start of this section: How can we be confident that innovations will be better than what they replace? How can we be sure they won't bring their own downsides? Realistically, it's not possible to be 100 percent certain that there will be no unintended consequences to any given innovation. Distant and recent history tells us that innovations tend to bring problems of some kind. What we can do is ask the question: What new problems may be created by this solution? We can think hard about impacts the innovation may have and work hard to maximize the upsides and

OVER THE PAST FEW WEEKS, MEDIA REPORTS HAVE MADE ME MORE CONFUSED ABOUT ALTERNATIVE PRODUCTS LIKE E-CIGARETTES AND HEAT-NOT-BURN TOBACCO PRODUCTS.



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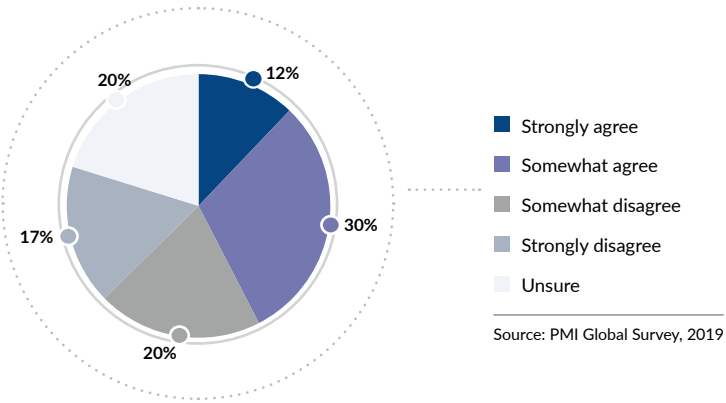


Source: PMI Global Survey, 2019

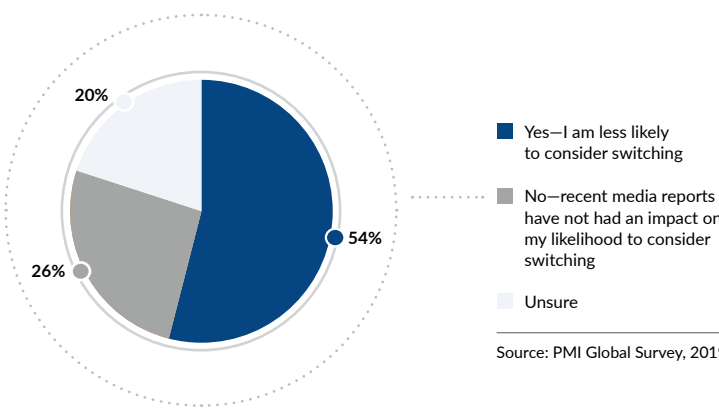
minimize the downsides. We also need to consider what impacts may result from **not** adopting the innovation. The net benefit to public health is key.

In the United States, there have been reports that concerns over vaping illnesses have discouraged some smokers from switching to e-cigarettes and that some e-cigarette users are choosing to return to combustible cigarettes. With this worrying possibility in mind, we asked respondents to our autumn 2019 survey to rate their response to the statement: *Over the past few weeks, media reports have made me more confused about alternative products like e-cigarettes and heat-not-burn tobacco products.* The responses were mixed, with a plurality of 42 percent of the overall sample (smokers and nonsmokers) agreeing they were more confused, while almost as many (37 percent) disagreed and 20 percent were unsure. More worryingly, more than half of the smokers in the survey had become more confused. Even higher proportions of smoke-free alternative users were confused.

The survey also asked current smokers whether recent media reports had made them less likely to consider switching to alternatives such as e-cigarettes and heat-not-burn tobacco products. These were filtered to be respondents who were smokers and did not use smoke-free alternatives—a total of 995 adults. Overall, more than half agreed they were less likely to consider switching as a result of recent news reports, while around a quarter disagreed and 20 percent were unsure. This is worrying. As clear-eyed health authorities such as Public Health England have consistently spelled out, vaping with properly regulated products carries a far lower health risk than smoking.

E-cigarettes and other smoke-free products are innovations that have the potential to help address the global public health issue of smoking. Closely monitoring and addressing the potential risks of these new products will be key to establishing trust in them and persuading those adults who would otherwise continue to smoke to switch to them.

AS A RESULT OF THE RECENT MEDIA REPORTS, ARE YOU LESS LIKELY TO CONSIDER SWITCHING TO ALTERNATIVE PRODUCTS LIKE E-CIGARETTES AND HEAT-NOT-BURN TOBACCO PRODUCTS?



Source: PMI Global Survey, 2019

For governments and health authorities, the opportunity is to develop regulations that incentivize the most responsible smoke-free innovations as 1) a better choice to continued smoking for those adult smokers who do not quit altogether and 2) tools to help address the global public health issue of smoking in concert with other anti-smoking measures designed to encourage cessation and prevent initiation. There is clearly strong, widespread demand for these products among smokers around the world—demand that is at risk of being satisfied by black-market products that have not undergone rigorous testing if access to legitimate products is restricted. All tobacco- and nicotine-containing products must be regulated, but—to ensure optimal harm reduction—those regulations should reflect these products' relative levels of risk.

5. BIG ISN'T ALWAYS BAD

Are there any serious alternatives to “big” in a world of 7.8 billion people?

In popular culture, *big* has gone hand in hand with *bad* for a long time. The Big Bad Wolf has been a stock villain in fairy tales from Aesop's Fables to Disney. In *Live and Let Die*, James Bond is pitted against Mr. Big, a drug lord and Caribbean island dictator. It's the same name given to criminal bosses in various crime dramas and criminology. Big is bad.

In media coverage of business, *big* is shorthand for unscrupulous and overbearing. It became a common trope after the 19th century "robber baron" U.S. industrialists built huge monopolies, allegedly by unfairly crushing competitors, rigging markets and corrupting governments. Since then *big* has been the moniker of choice whenever an industry is suspected of unethical practices, of wielding its power against public interests. Big Oil is routinely accused of pursuing profit at the price of pollution and environmental destruction, not to mention being a major contributor to climate change. Big Pharma is often in the headlines for charging excessively high prices and pushing healthcare professionals to prescribe inappropriately. Big Tobacco has been accused of concealing information about smoking-related diseases and thwarting initiatives to curb smoking. Big Food has been pilloried for peddling empty calories and driving the global obesity epidemic. Big Agriculture is in the crosshairs for driving farmers toward monoculture crops that rely on its seeds and fertilizer. And if anybody prefaces the word *government* with *big*, you can be sure they mean it's too big—way too big.

Artisanal Doesn't Always Cut It

There are plenty of areas of life where people who don't like big organizations can opt for small, local and artisanal—whether they're in the market for coffee, beer, bread, furniture, bicycles or clothing. Small, local and artisanal feel connected and personal in a world that too often feels disconnected and distant. In a fast-changing world, hyperlocalization can seem like an antidote to artificial and impersonal solutions.

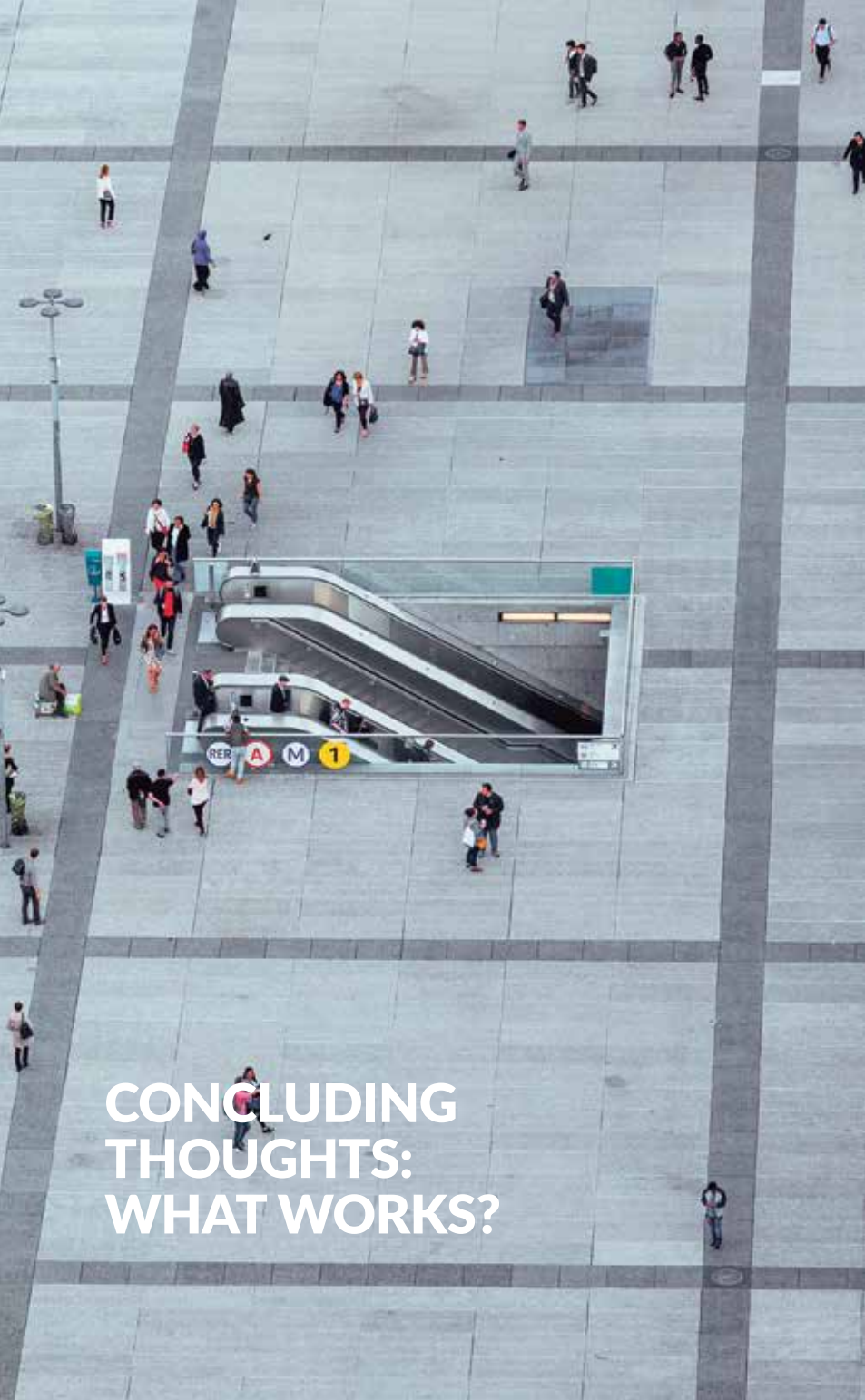
Still, in a world of 7.8 billion, there are areas of life where the scale of the problems requires big solutions to tackle them, even though they may be implemented locally. Vaccination is a case in point. Protection against serious disease such as measles, mumps, polio, tetanus, diphtheria, meningitis and typhoid all require vaccinations prepared by big pharma companies and delivered by qualified healthcare professionals in a large-scale, coordinated program. This is no place for craft vaccines or artisanal healthcare workers to administer them unless societies are willing to risk serious outbreaks of disease.

The field that most interests us at PMI—smoke-free alternatives—may have room for local, smaller solutions. In fact, the most hyperlocal and lowest-risk smoke-free alternative for smokers is simply to quit, possibly with support from a coach or therapist. But will that be enough? It does not appear so. In any given year, a large population of existing adult smokers will continue smoking.

Big Problem, Big Solution

The sobering fact is that smoking is a big problem that is best addressed by a big solution. As a Big Tobacco company, PMI has deep knowledge of the field, deep resources with which to develop better products, and the persistence and motivation to keep investing and keep working to crack this big problem. It takes a big and persistent company to set up and run an R&D campus employing hundreds of people. It takes a big and persistent company to invest more than $6 billion in smoke-free efforts over a decade. It takes a big and persistent company to develop products that are both appealing enough for smokers to choose them over cigarettes and a better choice for adult smokers than continued smoking.

So, in answer to the question at the beginning of this section, we don't think there are serious alternatives to "big" for providing the best set of solutions to this big problem. We don't expect big to stop being seen as bad, even as we transform the company to be smoke-free. What we do expect is that PMI will continue to develop and market innovative smoke-free alternatives for the hundreds of millions of men and women around the world who would otherwise continue smoking—a shift that we believe will have a positive impact on the public health.



CONCLUDING THOUGHTS: WHAT WORKS?

For anybody involved in serious efforts to reduce the harms of smoking, there should be one overriding question: What works? Which initiatives and actions work individually and in combination to reduce the number of people who smoke?

We know that in any given year, despite the best efforts of health authorities and other groups, the vast majority of smokers will continue to smoke and to incur the associated health risks. But what will work better than the current approach?

Given the huge diversity of populations, cultures and commercial and regulatory regimes around the world, it's unlikely that this overriding question has one simple answer. And even if it were possible to identify a one-size-fits-all solution, backed up with solid empirical evidence, what are the odds that it would be adopted globally? There are invariably complicating factors at play, from moral and religious convictions to political interests and lobbying.

We can see this complexity in the microcosm that is the United States. Certainly, U.S. rates of smoking overall have declined, from 20.9 percent in 2005 to 13.7 percent in 2018, but this national figure reflects significant variations by state, income level and other demographic variables. At a federal (national) level, the FDA has the authority to regulate the manufacture, distribution and marketing of

tobacco products. It sets the overall baseline. In April 2019, the FDA authorized PMI's heated tobacco product for sale in the U.S. with stringent marketing restrictions aimed at preventing youth access and exposure, having determined that the product is "appropriate for the protection of the public health."

Concerned about the "current epidemic of youth use of e-cigarettes," in January 2020 the FDA issued a policy clamping down on flavored cartridge-type e-cigarette products except for tobacco and menthol flavors. In its policy, the FDA was at pains to strike a balance between maintaining e-cigarettes as "a potential off-ramp for adults using combustible tobacco while ensuring these products don't provide an on-ramp to nicotine addiction for our youth."

It will take a while before data can tell whether the FDA's approach works in reducing rates of smoking harm. Any analysis of the results will be further complicated by the fact that states and cities have the power to enact their own measures.

In the U.K., the government spelled out its pragmatic, goal-oriented approach to tobacco harm reduction in its 2017 paper Towards a Smokefree Generation: A Tobacco Control Plan for England—in which it defined "smokefree" as a smoking prevalence of 5 percent or less. At the time the paper was released, smoking prevalence was at 15.5 percent, the lowest level since records began. The paper details four main thrusts of action: 1. Prevention first, 2. Supporting smokers to quit, 3. Eliminating variations in smoking rates and 4. Effective enforcement. The paper explicitly welcomes innovations that might reduce the harms caused by smoking, pledging to evaluate whether such products have a role to play in reducing the risk of harm to smokers, compared with continued smoking.

We at PMI believe that innovative, scientifically substantiated smoke-free alternatives to cigarettes have the potential to help address the global public health issue of smoking. Authorities in the

U.S. and U.K. recognize this and so have adopted policies intended to permit access to better alternatives that help smokers who would otherwise continue to smoke to abandon cigarettes.

Arguably the best test of this stance to date has been in Japan, where heated tobacco products have captured more than 20 percent of the total tobacco market since they were introduced a few years ago. Researchers from the American Cancer Society have attributed significant reductions in smoking rates in Japan to the availability of these products.

Some may take the attitude that any company that is still producing cigarettes cannot be trusted and perhaps should not even be permitted to make good faith contributions to discussions on the subject of tobacco harm reduction. Such an attitude ignores the fact that the tobacco industry is uniquely positioned to help address the global public health problem of smoking. Excluding tobacco companies from the discussion also fails to take into account the overriding question now and going forward: What works?

After all, if the shared objective of health authorities, anti-tobacco organizations and governments is to reduce rates of smoking, what could justify excluding the better alternatives to cigarettes that already exist at a time when these products are being shown to deliver on their promise? How is that in the best interests of the hundreds of millions of adults who continue to smoke? How is that in the best interests of public health?

PMI has committed to a smoke-free future—and is revamping its culture and business operations to deliver it—because we believe it's a vision we can and will achieve. We have invested heavily and carefully in new products that make good on that commitment. And we are transforming our company—from our expenditures on marketing and R&D to our factory configurations—to push us ever faster toward a future without cigarettes.

The very best option for people is never to smoke in the first place or to quit nicotine and tobacco entirely if they do smoke. For those adults who would otherwise continue to smoke, we intend to demonstrate—through relentless transparency, responsible business practices and scientific rigor—that smoke-free products are a better choice than cigarettes. For those adults who would otherwise continue smoking, these scientifically substantiated products represent an important part of **what works**.

Methodology

December 2019: PMI commissioned Povaddo LLC to conduct an online survey among 17,251 men and women aged 21–74 in 14 countries: Argentina, Australia, Brazil, Germany, Hong Kong, Israel, Italy, Japan, Mexico, the Netherlands, Norway, Russia, the United Kingdom and the United States. The survey was fielded Dec. 4–19 in respondents' native languages. The study carries an overall margin of error of +/- 0.75 percent at the 95 percent confidence interval.

September 2018: PMI commissioned a global leader in market research to conduct an online survey among 31,002 men and women ages 18–74[1] in 31 countries: Argentina, Australia, Austria, Brazil, Bulgaria, Colombia, Czech Republic, Egypt, France, Germany, Greece, India, Indonesia, Italy, Japan, Malaysia, Mexico, New Zealand, the Philippines, Poland, Romania, Russia, Serbia, Singapore, Slovakia, South Africa, South Korea, Spain, Ukraine, the United Kingdom and the United States. The survey was fielded Sept. 4–19 in respondents' native languages. The study carries an overall margin of error of +/- 0.6 percent at the 95 percent confidence interval.

[1] For countries where the legal smoking age is higher than 18, the sample was adjusted to account for this.

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