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PHILIP MORRIS INTERNATIONAL DELIVERING A SMOKE-FREE FUTURE – ARE SDGs THE SOLUTION? A NEW PLAYING FIELD.

ALICE GUERRA BAROSA JARDIM NEVES

44597

Work project carried out under the supervision of:

Daniel Abel Monteiro Palhares Traça – Advisor

Vitorino Alberto Mello Oliveira – CoAdvisor

Paulo Sacadura Cabral Portas – CoAdvisor

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Abstract

The work project consists of a case study, teaching note and project evaluation report on Philip Morris International's (PMI) mission of delivering a smoke-free future. The case study presents the company's transformation and introduces PMI's next-generation product IQOS that is said to have the potential to be less harmful than conventional cigarettes. The evaluation report analyses and provides recommendations for PMI's main challenges: widespread mistrust from stakeholders and lack of awareness for IQOS. This teaching note expands on the concepts of sustainability, the introduction of SDGs practices, impact measurement, and their relevance for such a transformation.

Keywords (Sustainability, Sustainable International Business, Sustainable Development Goals, Social Impact, Tobacco Control, Impact Measurement, Value Creation)

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GROUP COMPONENT - CASE STUDY

Philip Morris International delivering a smoke-free future – Engaging in a major business transformation towards sustainability.

"*It's to me very simple, we produce a product that causes diseases, and I think that the primary responsibility we have once the technology is available, and today the technology is available, is to develop products like this [IQOS] and commercialize them as soon as possible. These products hold very great promise, obviously for consumers, but also for public health, and eventually for our company, as their economies are similar to cigarettes, and in addition I believe to gain market share over time. […] First of all, we are concerned about the consumers. Secondly, even based on WHO projections, they will be, in 2025, still 1 billion plus smokers around the planet, and 9.6 million smokers in the UK, once we have the ability and innovation to offer this product to consumers, we have to offer it to them. […] I think consumers choose to use cigarettes, I don't think Philip Morris has invented cigarettes, I think for us, is to offer our consumers the best product we can in a category that we all know is addictive and causes harm, once we have the alternative, as we have it today, and I'm very happy we do, we offer them the alternative and we will do everything we can to convince them to switch to these products."* (André Calantzopoulos, BBC 2016).

***"PMI aims to become a majority smoke – free business by 2025."* (PMI 2021)**

It was the 29th of September 2016, when André Calantzopoulos, CEO of Philip Morris International (PMI) took one last look at the headline of the speech he was about to deliver to the world, thinking about the last few exhausting months. Before delivering his speech, André thought about the long history of the company, tobacco and how cigarettes had impacted the world and the businesses he led for several years. With this in mind, he wondered how his employees,

regulators, media, and consumers would receive the news of a tobacco company committing to go smoke–free. In his letter published in the "Communication on Progress 2016 United Nations Global Compact", Calantzopoulos stated that *"there is no doubt that the greatest contribution PMI can make to society is to replace cigarettes with less harmful alternatives"* (Communication on Progress United Nations Global Compact 2016). And later, in PMI's 2018 Sustainability Report, he affirmed that a tobacco company can be sustainable *"by taking every step possible to completely replace cigarettes with better alternatives, addressing its sustainability challenges across its value chain, and seizing opportunities to add value to society"* (PMI Sustainability Report 2018).

History of the company

PMI is currently one of the world's leading tobacco companies, but its history dates back to 1847, when Mr. Philip Morris opened a shop in London´s Bond Street selling tobacco and ready-made cigarettes. During the course of time, the company operated by incorporating many cigarette brands in its portfolio, including Marlboro in 1908, which eventually became PMI´s most famous and popular brand. The situation changed in 1919, when the company was acquired in the United States and incorporated in Virginia as Philip Morris & Co. Inc. and began manufacturing cigarettes in its factory in Richmond. In 1950, PMI began its worldwide expansion by introducing an internal operational division to manufacture its products around the world. Across the globe and far away from its home country, Australia becomes the first country to host a foreign division of Philip Morris. Over the years, the tobacco giant has continued to open new production sites in Asia and Europe, expanding its influence in new markets.

One of the most significant milestones for PMI was achieved in 2009 when its facility in Neuchâtel, Switzerland, for R&D is presented as an innovation hub that brings together over 400

specialists and scientists to pioneer the development of reduced-risk products (RRPs). The road towards delivering RRPs is corroborated by the strategic approach with Altria Group Inc., which makes Altria's e-cigarettes available to PMI for commercialization outside of the United States, and, on the other hand, makes two of PMI´s RRPs available to Altria for commercialization in the United States. The introduction of RRPs as an alternative to conventional cigarettes became clearer in 2014 when PMI announced its plan to invest up to 500 million euros to build its first RRP factory in Italy. Hence, research and development efforts led to the introduction of PMI´s first smoke-free platform, IQOS, in 2014, which is piloted in Italy and Japan. After its success in the initial test markets, IQOS is later introduced in other countries such as Portugal, Romania, Russia, and Switzerland in 2015. The transition to smoke-free alternatives culminates in 2016 when PMI expresses its vision to achieve a smoke-free future, and begins allocating its resources towards the development and responsible marketing of smoke-free products supported by scientific research (PMI 2019).

Evolution & Regulations

The use of tobacco is not a recent phenomenon. In fact, more than 10,000 years ago, it was used by indigenous people in America for religious purposes, but it was not until the 1950's that tobacco started to be linked with maturity, glamour, and social life – a context in which tobacco companies and cinema played a key role in promoting such "benefits" of smoking. During the 50's, smoking was so vogue that Camel also encouraged consumers to smoke during thanksgiving as a technique to digest food better (Castaldelli-Maia 2015). Even though smoking was partially regulated in the 50's as a potential cause of fire hazard, it was not until 1964 that other concerns were raised as the Surgeon General Report on Smoking and Health was published – findings

indicated that smoking was inherently related to lung cancer. This is when the tobacco industry started seeing new regulations coming in place.

When it comes to regulations at a national level, each country has its own approach to limit the sale of cigarettes. For instance, in the United States, Congress approved the Cigarette Labelling and Advertising Act in 1965, requiring health warning statements on all cigarette packages. The next major regulatory step occurred in 1992, when Congress introduced the Reorganization Act which mandated states implement laws prohibiting the distribution and sale of tobacco products to minors (Jacobson 1997). The European Union (EU) followed a different approach, and its most relevant initiative is the "Tobacco Products Directive" implemented in 2014 and enforced to EU countries in May 2016. This directive outlines the standards governing the manufacturing, presentation, and sale of tobacco products. One of the most notable actions is Art 10.1, which specifies that each unit packet, as well as any outside packaging of tobacco products, must include combined health warnings, which should cover 65% of both exterior front and back surfaces of the unit packet as well as any outside packaging. Furthermore, Art 18.1 stipulates that member states have the authority to prohibit cross-border distance sales of tobacco products to consumers and that member states must work together to prevent these sales (Directive European Union 2014).

Urge to change

When André Calantzopoulos delivered his speech about the smoke–free future, PMI was confronting a reality in which 20% of the world´s population (Statista 2021) were smokers and lung cancer was the most common cause of cancer death worldwide.

Not only general trends of global health care were an issue, but also pressure from the financial sector was another inevitable factor. The World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) is one of the most influential conventions on tobacco–free investment, as it made finance leaders aware that it is the first legally binding health treaty. The focus of the FCTC has been to prohibit the sale of cigarettes to minors, ban tobacco product advertisements, and increase the taxes on tobacco. In addition to the FCTC, the United Nations Sustainable Development Goals (SDGs) have provided a platform on which to base the dialogue regarding tobacco-free investments. The SDG framework does not directly address tobacco companies but focuses on a broader call for action in different areas. For instance, SDG number 17, "partnership for the Goals" implies cross–sector collaboration as a key step when addressing major global issues. What is important to retain here is that companies need to abide to the general guidance the SDGs provide if they intend to participate in the framework. If a financial company intends to participate in the SDG framework, for instance, it is not possible to invest in a company whose operations hinder the achievement of SDG 3, "Good Health and Well – Being". In fact, this rationale of participation towards SDG and tobacco-free portfolios led financial giants such as AXA to divest 1.8 billion euros in assets from the tobacco industry (King 2017).

Still, when talking about divestment from tobacco companies it is always necessary to open a parenthesis and think about how it contributes to solving the problem of smoking. Since many ESG investors excluded tobacco companies from their portfolios, billions of dollars were divested from the tobacco industry. However, anti-smoking investors cannot pressure companies to transform their business model and develop strategies to eliminate cigarettes – so, at this point, the question remains if whether or not investors should reward the development of less harmful smoke-free products that can cannibalize cigarette sales (Olynec 2020). What is more, in 2017, tobacco companies were excluded from the United Nations Global Compact

because their activities conflicted directly with SDG 3 and with public health policies. Therefore, tobacco companies are currently not considered an ally of the Global Compact (King 2017).

Because of the above-mentioned reasons, it is not possible for a tobacco company to fully commit to the SDG framework if its core business operates in a way that contrasts it. Nevertheless, PMI voluntarily *"aligns with the principles and standards of the UN Global Compact (UNGC) and indicates contributions to the UN Sustainable Development Goals (SDGs) and corresponding targets."* (PMI Investor Relations, 2021). Five years after announcing its new vision, the company´s Board continues to reaffirm in its Statement of Purpose that they are committed to accelerate the phasing out of smoking. Moreover, the goal is still to transform the company to fulfil its own purpose, while also influencing the industry to follow its steps, as they seek to make a long-term positive impact that helps not only the company, but also consumers and society alike.

Industry Changes

The tobacco industry has been recently characterized by a wave of innovation, as established tobacco products continue to lose their appeal in an environment shaped by more health-conscious consumers, as well as tightening regulations. At a macro level, government initiatives, along with declining social acceptance of smoking, resulted in a shrink of the industry volume. The WHO, through the FCTC, is the principal force driving legislation, by encouraging public health organizations to promote increasingly stricter regulatory measures on the marketing and sale of tobacco products to adult smokers (PMI Annual Report 2020). But in a scenario where regulations play a dominant role in the tobacco industry, how have these really affected the market?

Currently, there is not a standard for regulation of tobacco products applicable to all nations. Even though the FCTC provides the main guidelines, they are made on a more general scale

and different regions end up facing distinct regulatory environments, which means different trends in smoking (Exhibit 1). Africa, for instance, has experienced a 42% increase in the number of smokers from 2000 to 2020, and the narrative for this growth is quite simple: tobacco use in Africa has received little attention as the continent was perceived as a low smoking region compared to other developed areas, leading to low priority for tobacco control in favour of higher control of other relevant issues, such as infectious diseases (Blecher 2013). An entirely different landscape is present in both the Americas and the European Union. The former saw a decrease of 28% in tobacco use in the last 20 years - a result of higher priced cigarettes, approximately 8$ per packet (Statista 2021), which makes smoking less accessible to consumers. Furthermore, the United States Government has funded advertisements that show the adverse effects of tobacco, sometimes in a gruesome detailed manner, a measure that was also fostered by Medicaid and insurance plan programs, which required smoking cessation (American Heart Association 2018). As for the European Union, a decline of 21% in the number of smokers occurred in the same timeframe, mainly attributable to increased taxes on smoking. For instance, France increased taxes on tobacco by nearly €1 in 2018 and this contributed to a reduction of cigarette sales of 9% (OECD 2020). In contrast to the regions analysed above, in South–East Asia (SEAR) the number of smokers has remained constant, which is partially explained by the region's status as the world's largest producer and consumer of tobacco. Despite all 8 SEAR countries having signed the FCTC, they still face challenges when it comes to implementing it, mainly regarding inadequate and poor infrastructure, legislation and regulations (World Bank 2009). Lastly, the Western Pacific Region is home to one-third of the world´s population of smokers and has been targeted by campaigns to advocate for tobacco control, for which 80% of the members of the region have adhered. Even though the campaigns have been successful in recent years, various challenges

continue to appear to counteract these efforts, namely the rising popularity of electronic alternatives as potentially safer options (The Lancet, 2021).

But even if the number of smokers seems to be constantly declining across the globe (WHO 2021), tobacco companies remain profitable. In fact, the tobacco industry was valued at $932 billion in 2020 and it is predicted to expand at a compounded annual growth rate (CAGR) of 1.8%, through 2028, reaching $1.07 trillion. The international tobacco market is currently dominated by four giants: Philip Morris International (PMI), Japan Tobacco International (JTI), British American Tobacco (BAT), and Imperial Brands. While retail prices have been rising to reflect tax increases, sales volume of cigarettes have been decreasing. The transition to smoke–free products is another reason for the profitability of the industry. For instance, PMI anticipates that sales of its smoke–free products will account for more than 50% of overall sales in 2025, and in practical terms it seems to be working, as in 2020 PMI experienced a drop in sales of cigarettes of 10.7%, while sales of heated tobacco products surged by 27.9% in the same period (Forbes 2021).

Adding to the four large brands mentioned, the international tobacco market is also dominated by two manufacturers that operate in their domestic markets - The China National Tobacco Corporations (CNTC) in China and the Altria Group in the USA. When it comes to market share, the leader is CNTC with 46%, followed by PMI with 13.8%, BAT tobacco capturing 12% of the market and JT with 8% of market share. Even though the products manufactured by these companies are remarkably similar, competition relies on factors such as quality of products, brand recognition, customers´ loyalty to the brand, taste, R&D, and retail pricing. Not only that, but since the competition in the tobacco industry is quite high, tobacco companies must innovate to stay on board. Innovation has been achieved through the introduction of reduced-risk products for which the value proposition lies on offering more choice to consumers *"towards the*

replacement of cigarettes with high-quality and scientifically substantiated smoke-free products for adult consumers" (PMI 2020). First examples of reduced-risk products date back to the 1990s, but the breakthrough occurred in 2014, when PMI launched IQOS (PMI Integrated Report 2020). As the former PMI Chief Sustainability Officer mentioned: *"For PMI, or indeed any tobacco company, to credibly speak about sustainability, the purpose can be none other than to replace cigarettes with better alternatives for smokers, society, and the environment."* (PMI – Sustainability of tobacco companies 2019).

R&D in reduced-risk products

Determined to stay on board in a constantly changing environment and facing outside pressures from both the public, government and other institutions, PMI decided to reinvent its business model and committed to a major transformation. After acknowledging and informing consumers about the negative impacts of its products in an effort to tackle the lack of trust and bad reputation of the industry, PMI had to innovate and undergo internal changes and transformations to support these innovations in a sustainable way. After redesigning the company's vision, PMI defined the term Reduced Risk Products (RRP) as those products that present or have the potential to present less risk of harm to users who choose to switch to these products versus those that continue to smoke conventional cigarettes. RRPs became PMI´s focus in this transformation. The major difference between RRPs and conventional cigarettes is that RRPs do not burn tobacco or release smoke (PMI – What are RRPs 2021). Still, a question has to be made: Why do these products have potential to be less harmful than conventional cigarettes?

Scientific background on tobacco and nicotine as components of cigarettes

When lighting a cigarette, a process called combustion or burning is started, producing a complex mixture known as smoke. The burning process of tobacco generates toxicants of which around 100 have been identified as causes of most smoking-related diseases, such as lung cancer and cardiovascular diseases. (PMI – The problem with burning 2021). As a result, tobacco kills over 8 million people worldwide per year (WHO – Tobacco 2021). Nicotine, on the other hand, occurs naturally in tobacco plants. It is highly addictive which makes it the main reason for people to continue smoking, and its pharmacological effects can cause acute increases in heart rate and blood pressure. Even though nicotine is poisonous when consumed in high doses and not risk-free, it is not the primary cause of smoking-related diseases. PMI therefore argues that *"that's why we are focused on developing [reduced-risk] products that offer a flavorful nicotine-containing vapor – but with far lower levels of harmful chemicals found in cigarette smoke.*" (PMI – The role of nicotine 2017).

RRPs can be divided into two main subcategories: heated tobacco products and e-cigarettes (Exhibit 2).

Heated tobacco products - HTPs

Heated tobacco products use battery-powered heating systems to heat tobacco at temperatures lower than conventional cigarettes to produce a nicotine-infused aerosol. The products in the market come in different forms: PMI refers to its key heated tobacco product as IQOS or Platform 1, which uses an external heat source heating specially designed stick. A blade in the heater device put into the end of the tobacco-containing element heats the tobacco. Other companies use different techniques such as heated sealed chambers, like micro-ovens, or a process in which the emission is passed over tobacco to heat it and absorb the taste (WHO – Heated Tobacco Products 2020).

E-cigarettes

E-cigarettes differ from HTPs because they do not contain tobacco. Instead, they heat a nicotine-containing liquid. Most e-cigarettes have a battery, a heating element, and a place to hold the liquid. The products create an aerosol by typically heating the nicotine-containing liquid which is being inhaled by the users. Smoking e-cigarettes is often also referred to as "vaping". While most players in the market use a similar technique, e-cigarettes come in different forms. Some are made to look like conventional cigarettes, cigars, or pipes, and others match the appearance of pens, USB sticks and other everyday items. E-cigarettes are said to be less harmful than regular cigarettes as they contain fewer toxic chemicals, yet they are not harmless (Centers of Disease Control and Prevention 2021). In the field of e-cigarettes, PMI has developed its so-called product IQOS VEEV or Platform 4.

PMI's objectives go alongside the efforts of the World Health Organization (WHO) to tackle smoking around the world, but PMI aims to achieve the defined target much faster. High standards are set and now it is up to teams of scientists, engineers, technicians, and other professionals to work towards overcoming current environmental, sustainability and harm reduction challenges to deliver innovative solutions that go beyond nicotine (PMI 2021).

With the ambition of completely replacing cigarettes and being the sole tobacco company to have done it so far, PMI has put significant efforts and continues to invest substantial amounts in its science-based research and development to create less harmful alternatives with potential growth in markets around the world. PMI has strongly committed to science and technology as the company believes these to be the drivers of its innovation and growth. However, it is not enough to simply develop these alternatives, the company must also ensure that adult smokers who are not willing to quit smoking, and only these, have access to these alternatives. Access

means that smokers are aware of the existence of smoke-free products, the products are accepted as viable alternatives and that they are available and affordable to smokers.

Since 2008, PMI has invested over $8.1B *"in the development, scientific substantiation, manufacturing, commercialization and continuous innovation for smoke-free products"* (PMI Science 2021, 43). These investments were more vehemently observed in the opening of the R&D Center in Neuchâtel (PMI Science 2021, 44), in conducting several scientific studies and in recruiting talented scientists, engineers and specialists, who were primal to the improvement of their technological capabilities and to the establishment of 1.300 patents worldwide (PMI Science – smoke-free future 2021), ultimately helping the transformation and adaptation of PMI's value chain to serve their main purpose. This value chain transformation consists in the incorporation of new ways of thinking and working to become more digitalized, project-based and focused on customer centricity, agility, and data-driven decision-making (PMI Science 2021). PMI is now, more than ever, committed to engage in a transparent two-way dialogue to address customers concerns and build upon their feedback. To make this transition measurable and verifiable, PMI has committed to transparent reporting through its Business Transformation Metrics. These metrics allow all stakeholders and the public to get access to all information about the pace and scale of the achievements, which contributes to the increase of trust towards the company. The approach taken by PMI has allowed the company to maintain its leadership in the conventional cigarette business, but also to become a leader in the smoke-free market.

Introducing IQOS

The first thing that should be noted about IQOS is that it is a HTP and not an e-cigarette. Even though they share some commonalities in regard to both being alternatives to conventional cigarettes and having slender, battery-powered devices, IQOS vaporizes actual tobacco, instead of

vaporizing nicotine-containing liquid (Belluz J 2018, Exhibit 3). An IQOS device can be divided into three main components: a heated tobacco unit, the IQOS holder (which looks like an e-cigarette), and a charger. To use it, users must insert the tobacco unit into the IQOS holder, press a button to turn on a battery-powered heater, and then inhale the nicotine-containing vapor. This smoking experience lasts for about six minutes, or 14 puffs, before the tobacco unit is exhausted and the IQOS device needs to be recharged once again (PMI 2014).

IQOS is highly adaptable to consumers' tastes. In fact, several types of HEETS (heated-tobacco sticks) are available across many markets, with ones being exclusive to certain regions and others being more commonly found. However, due to legislations in the US and Europe, which forbid the manufacture of flavoured tobacco, the major difference between all variants relate to their intensity, with the menthol flavour being an exception.

All this mimicking of traditional tobacco-smoking has a finality: to potentially reduce harm and the risk of smoking-related diseases. To achieve that, the difference lies on how the tobacco is treated inside the IQOS device – rather than being burnt at temperatures from 600ºC to 900ºC like traditional cigarettes, it is instead heated below 350ºC (PMI Integrated Report 2019). In fact, and like it was already conveyed in a previous section, scientific research states that extreme temperatures seen in traditional cigarettes can certainly be the main factor for the release of dozens of chemicals that are harmful for consumers' health and may be associated with eventual tobacco-related diseases (PMI 2014).

The lower heating temperature in the IQOS platforms is achieved via a heating blade and acts as both a heater and temperature sensor. The blade constantly monitors and controls the temperature of the tobacco while the device operates, which is one of the main factors contributing to the core of the innovation. The 350ºC as the maximum limit of the tobacco heating process guarantees that no combustion occurs, leading the aerosol generated to have on average

95% less Harmful and Potential Harmful Constituents (HPHCs) than those found in conventional cigarettes (PMI Science 2019). The processes described seem to indicate that switching from conventional cigarettes to IQOS has a positive impact on smokers' health. (PMI Science 2018). However, an often-emphasized aspect by PMI is that, although a better alternative to conventional cigarettes, IQOS devices are not fully risk-free. The toxics released in the process of heating are greatly reduced, but not eliminated entirely, while there is always still the presence of nicotine to account for, which, as already said, is addictive (Healthline, 2021).

Test Market Strategy

As the time to finally deliver IQOS to consumers arrived, PMI figured that testing the product in a select number of markets would be beneficial for the "reconnaissance" phase of the product launch. Thus, in the end of 2014, Milan (Italy) and Nagoya (Japan) served as the first IQOS test markets. These markets were selected because of their reputation as large metropolitan areas that usually welcome innovation, reasons that are important for the product to be tested and explained to retailers and consumers (Tobacco Journal International 2015).

In Japan, the goal was to take advantage of the heavy regulatory environment on e-cigarettes that contained nicotine-laced liquid. IQOS would not face these regulations as the devices heat tobacco and use HeatSticks as a refill (Reuters 2016). As such, an opportunity to capture the market share of the fast-growing Japanese e-cigarette business was presented to PMI, while tax benefits also arose because of the potential lower risk nature of heated-tobacco products. Furthermore, due of the higher excise tax, the profit margins of smoke-free products are comparable to or exceed those of cigarettes (PMI Progress Report 2016).

In Italy, the strategy was more of a forward-looking one. Even though the Italian government had a more uniform approach towards tobacco products, be it heated or burnt, PMI was confident that less regulations for IQOS would be put in place once legislators understood the benefits the product would bring to Italian consumers (Euromonitor 2021). Additionally, the fact that heated-tobacco products were not subject to any indoor smoking bans or advertisement legislations brought PMI confidence that the eventual success case in Italian grounds could inspire other developed economies to follow (Liu 2018).

Still, it was the Japanese play that ended up being fruitful in a more quickly manner, setting it as the standard test market and the backbone of PMI's enormous transformation. The cultural aspects played a key role in guaranteeing the success of the experiment – indeed, Japanese consumers' savvy preferences towards cleanliness meant that smoking with no ashes, less smell and no impact on indoor air quality would perfectly bridge the experience of smoking with the cultural standpoint. Hence, only a few months were needed for an expansion to other Japanese prefectures to happen, followed by a national spread of the brand in April 2016, a move that cemented the Nippon country as a global standard for the desired IQOS transition.

Commercialization Strategy

After defining which markets to enter and what strategy to follow, consolidation in those and other markets would be the next logical step for PMI to think about. To do so, the company focused on invoking its own smoke-free vision to consumers and critics' minds. An example of this is the numerous participations in seminars, conferences, music festivals and art exhibitions (PMI Sustainability Report 2020). Moreover, there was a focus on connecting with IQOS-friendly restaurants and bars, a move that enhances the potential difference in harm to consumers' health that separates both types of smoking (Reuters 2020).

These efforts reflect PMI´s commitment to sustainability through engagement with stakeholders, which might ultimately deliver the envisioned smoke-free future. More than ever, social support is required to enable the implementation of legal frameworks that would rapidly stop cigarette smoking by encouraging smokers to become aware of smoke-free alternatives (PMI Sustainability Report 2018).

Nevertheless, in the eyes of many, IQOS seemed like an attempt to sanitize PMI's product line, and one that is not always successful at that. A notable marketing failure by PMI concerned the use of IQOS ambassadors in some countries around the world, many of whom were reported to be younger than 25 years old. The problem here lies on the fact that the company's internal guidelines prohibit influencers who are or appear to be under 25 years old to promote its brands, leading it to violate its own policy towards social media communication (Reuters 2019). As an answer to this, PMI has stated quite transparently that, even if parts of the reports were true, there was never the intent to violate their guidelines and there were insufficient controls put in place to ensure compliance (Responsible Marketing Practices at PMI 2019). Ultimately, this incident led the company to shy away from engaging with anyone for the purpose of creating social media posts promoting their products. However, this type of transgression against company's standards and overall misalignment between its branches around the world induced many to believe that PMI is not yet prepared to let go the past and go fully sustainable.

Communication

When assessing how to communicate and reach consumers in an effective way, tobacco companies must innovate since most of the usual marketing channels are restricted by tight regulations implemented in the last decades. PMI has relied and continues to rely on its reputation to ensure word-of-mouth as an effective means of getting consumers to know

about their products. To support this process, PMI launched a global campaign called "Unsmoke" in 2019, which was rolled out across various online and offline channels. Given widespread misconception and mistrust towards PMI's intentions, the campaign's goal was to move smoke-free products and their potential benefits for public health into the center of attention and clear up misunderstandings. The campaign followed a clear message: *"If you don't smoke, don't start. If you smoke, quit. If you don't quit, change."* (Unsmoke your World, 2019). To target specific groups, the campaign addressed the general public with the claim "Unsmoke Your World" (UYW) while "Unsmoke Your Mind" (UYM) was aimed to reach opinion leaders. UYW targeted individuals and had the goal to inform them about the existence of better alternatives as well as encourage the general public to call for regulations that improve access to information. UYM rather addressed general misconceptions on smoke-free products and demanded for an open conversation between tobacco companies and regulators as well as other stakeholders (PMI Integrated Report 2020). The key focus of the campaign was on the concept of harm reduction with the goal to reduce the negative impact of people's choices (Unsmoke your World 2019).

Sales

From a selling standpoint, with the IQOS launch came a transition from a conventional B2B model to a more Direct-to-Consumer (D2C) approach. This meant that much focus would be given to IQOS unique points-of-sale (POS), examples of which are specialty stores, kiosks, pop-up stores and "corners" in convenience stores (Israel Journal of Health Policy Research, 2019). Even though the strategies employed to promote IQOS-related products are different according to the type of POS analysed, one common practice seems to apply to all of them: the products sold should not be directed for young consumers. The company is taking this strategy so

seriously that by 2023, it hopes to have its whole array of electronic smoke-free products outfitted with age-verification technology (PMI Integrated Report 2020).

As it was already stated, the launch of IQOS resulted in a more customer-centric approach based on a D2C business model. Further, as HTPs require detailed explanation and sharing of clear information to help consumers in their decision-making, the company opened both stationary boutiques as well as temporary stores.

The adoption of this new model of doing business also led to a shift in the company's strategies to get closer to consumers. At this time, the company took in a lot of efforts to gather reliable data that could be used in planning certain aspects, such as IQOS store locations and the interior materials of these stores (Go-Popup, 2021). These stores allowed PMI to get closer to the customer, and show and explain the new product on site, which played a key role in the branding of IQOS. In fact, a product like IQOS, which did not exist before, requires that all the aspects surrounding it, including the innovation itself, be transmitted in a clear way to consumers, and this direct interaction becomes a primal form of doing so.

With a minimal, modern and product-focused design, PMI aims to create a warm and welcoming atmosphere in which adult smokers have the chance to experience and test the new product (Exhibit 4). The personal contact with consumers during both the buying and after-sale process is one that PMI has never had before. Now, this offers it the opportunity to not only receive direct feedback on the product, but also follow up with consumers on their journey, therefore contributing to IQOS' so called "customer experience". In general, IQOS stores play an important role in PMI's sales strategy, as they are the main marketing funnel to create awareness of the brand (Go–PopUp, 2021). PMI operates 24 consumer call centers that help consumers in the case that questions arise about the use of the product. Gathered insights are being collected and used for improvements in product development. By the end of 2020, there were a total of 259

IQOS stores and 2,200 exclusive IQOS retail touchpoints worldwide, offering support to adult smokers that are interested in learning about and experiencing heated tobacco technology.

PMI has invested heavily in training their IQOS coaches, who are instructed to follow the company's Good Conversion Practices. The stores do not only follow the purpose of selling IQOS to new consumers, but also serve as a service point for cleaning and replacing devices, as well as an opportunity to upgrade for current users. The latter includes sales of new device ranges and accessories that offer users the option to personalize their IQOS device.

Adding to the personal contact in the stores, PMI has developed its digital services to better serve customers. Particularly, the company has provided virtual sessions with IQOS coaches and built a customer relationship management system that offers tailored communication and gathers relevant data on switching rates (PMI Integrated Report 2020).

Switching consumers to IQOS

PMI has made significant progress towards its ambitious objective of having at least 40 million smokers transition from traditional cigarettes to PMI's smoke-free products by 2025, since the debut of IQOS. By the end of 2020, an estimated 12.7 million smokers have transitioned to IQOS and quit smoking. The total number of IQOS users amounted for 17.5 million in 2020, of which 72% stopped smoking cigarettes. Following the 2016 announcement of a smoke-free future, and the fact that IQOS has been made available for sale in 64 markets so far, the volume of smoke-free products shipped by PMI increased tenfold until 2020, while the shipment volume of combustible products decreased by almost 200 million units over the same period of time. As a result, smoke-free products accounted for 10.4% of total shipment volume in 2020. Moreover, smoke-free products contributed 23.8% of total net revenues in 2020, up from 2.7% in 2016. This can be explained by a marketing overspend of 76% for smoke-free products (Exhibit 5). While

consumer acceptance of IQOS varies in different markets, the biggest success story emerged in Japan, which became the first country where the shipment volume of heated tobacco units exceeded that of cigarettes (PMI 2021).

According to PMI, the number of smokers switching to IQOS could be much higher if more adult smokers had better access to its smoke-free products. "Access" is defined along four variables: (1) awareness of the benefits of smoke-free products, (2) acceptance of products by smokers as a viable alternative to cigarettes, (3) availability of products for sale to smokers and (4) affordability of smoke-free products. But how can access be achieved? When raising awareness, PMI wants smokers to understand the differences and benefits of smoke-free products compared to combustible cigarettes, while also stressing out the fact that smoke-free alternatives are not risk-free. Awareness is strengthened by information, and PMI puts in place an internal process to ensure that messages to consumers concerning smoke-free alternatives are clear through comprehension research in various markets. Smokers will stop smoking cigarettes and switch to better alternatives only if they prefer them, and this process is defined as product acceptance. Acceptance is measured by the full-switching rate, which is defined as the percentage of IQOS users who have stopped smoking traditional cigarettes compared to the total of IQOS users. According to PMI, a switching rate of 100% will make conventional cigarettes obsolete. Availability is a particularly important component as it refers to the possibility of making smoke-free alternatives available to smokers, and this depends on countries regulatory framework. Finally delivering a smoke-free future will be highly dependent on making better alternatives to smokers affordable. Economies of smoke-free alternatives are different from those of traditional smoking and require customers to buy a device to heat tobacco. The retail price for IQOS ranges from 29 to 49 euros depending on the model. To address cost barriers, PMI has implemented actions, such as lending the device or payment over time (PMI 2020).

To achieve this, PMI calls for a regulatory framework driven by governments, policy and regulators that allows smoke-free products to be sold and adult smokers to be informed about the existence and availability of these products (PMI 2020). *"We're optimistic about the future as we work to progressively transition PMI's existing cigarette business to potentially less harmful alternatives. There is tremendous opportunity to positively impact public health with the availability of better choices than continued smoking, and we can't do it alone. Contributions from public-health experts, the scientific community and regulators will greatly accelerate switching from cigarettes to smoke-free products.",* said Tony Snyder, PMI's former Vice President of Communications (PMI 2019).

Engaging stakeholders

PMI is aware that the success of its strategy depends not only on consumers acceptance of the new products, but also on other external stakeholders such as regulators, the scientific community, investors, and NGOs. However, engaging stakeholders has been challenging, and the public debate on smoke-free products has been controversial. In response to the launch of IQOS, for instance, health charity "Action on Smoking and Health" called for independent evidence to prove that IQOS is significantly less harmful than smoking, as well as for further investigation of risks of youth uptake and research on economic and social cost of dependence (ASH 2016). In 2017, PMI and other tobacco companies were excluded from the United Nations Global Compact (UNGC), following a letter signed by over 200 organizations calling for a permanent participation ban for tobacco companies. Critics have claimed that the UNGC serves as a point of entry for multinationals seeking to expand their policy influence over the UN and its agencies (Tobacco Tactics, 2021). UNGC argues that *"the decision recognizes that tobacco*

products are in direct conflict with UN goals, particularly with the right to public health, and undermines the achievement of SDG 3" (United Nations Global Compact 2021).

Moreover, in 2020, the U.S. Food and Drug Administration (FDA) approved the marketing of IQOS tobacco heating device, with information about "reduced exposure" (FDA 2020), although the University of California Center for Tobacco Control Research and Education and the US Tobacco Products Advisory Committee recommended against such authorization (Center for Tobacco Control Research and Education UCSF 2020, Reuters 2018). The authorization allows the use of claims in the scope of "exposure modification" in the U.S. – however, *"the FDA determined that the evidence did not support issuing risk modification orders"* (FDA 2020). Nevertheless, PMI communicated FDA´s authorization as a major achievement for the company, hailing the decision as a *"milestone for public health"* (PMI 2020). Thereupon, WHO published a statement reminding its member states of the prohibition of false, misleading, or deceptive tobacco advertising and that *"reducing exposure to harmful chemicals in HTPs does not render them harmless, nor does it translate to reduced risk to human health"* (WHO, 2020). To avoid potential misinterpretation of the FDA authorization, the Tobacco Control Research Group at the University of Bath published a briefing summarizing the scientific findings on IQOS and calling for caution and close monitoring of PMI's marketing activities. (TCRG 2020).

Further, the regulatory landscape for cigarettes, and particularly for new generation products, varied significantly around the world (Exhibit 6). Following the introduction of HTPs and e-cigarettes, several regulations were enacted, ranging from no bans to complete bans in certain markets. For instance, countries like Hong Kong and Singapore banned e-cigarettes and HTPs with the reasoning that they encourage smoking among young people (South China Morning Post 2021, Ministry of Health Singapore 2020). According to Calantzopoulos, regulators are one of the most important stakeholders and key players in achieving the success of a

smoke-free future: *"On our side, we can develop a portfolio of products, put our money into commercial efforts, but we need the government to play the game as well; for consumers to change their behavior, you need products, but you also need incentives and differentiation...taxation, labelling, are all important."* (Barron's 2019).

Looking ahead

Despite all the efforts over the past years, PMI still faces widespread mistrust from institutions, regulators and consumers, a fact that the company sees as the biggest challenge on the way to achieve the goal of becoming a predominantly smoke-free company by 2025. Tight regulations and marketing bans for smoke-free products reduce opportunities for PMI to create awareness for IQOS and its potential benefits, and the less opportunities there are for PMI to spread information among current consumers, the less smokers switch to IQOS. Will enough smokers switch to IQOS or is the smoke-free future at risk? Can trust be regained with a product that, while potentially less harmful, remains highly addictive? As a second area of activity, PMI started to explore business areas beyond tobacco and nicotine, and formulated a second goal of generating *"at least $1bn in net revenues from Beyond Nicotine products by 2025"* (PMI 2021), a move that will help it evolve into a broader lifestyle and consumer wellness company. The first step in that direction was the acquisition of Vectura, a UK-based inhaler company, in September 2021, which Calantzopoulos described as *"that missing capability in order to develop products that have nothing to do with nicotine"* (Financial Times 2021). However, also in this case, PMI is accused of false intentions. In fact, the public debate on the deal was controversial, and public health and anti-smoking charities called it *"an unresolvable ethical conflict"* (British Thoracic Society 2021). In particular, they refer to the fact that PMI currently still generates most revenues with combustible cigarettes,

raising once again the issue of trust. Even if only for the transition phase, can the two business areas coexist?

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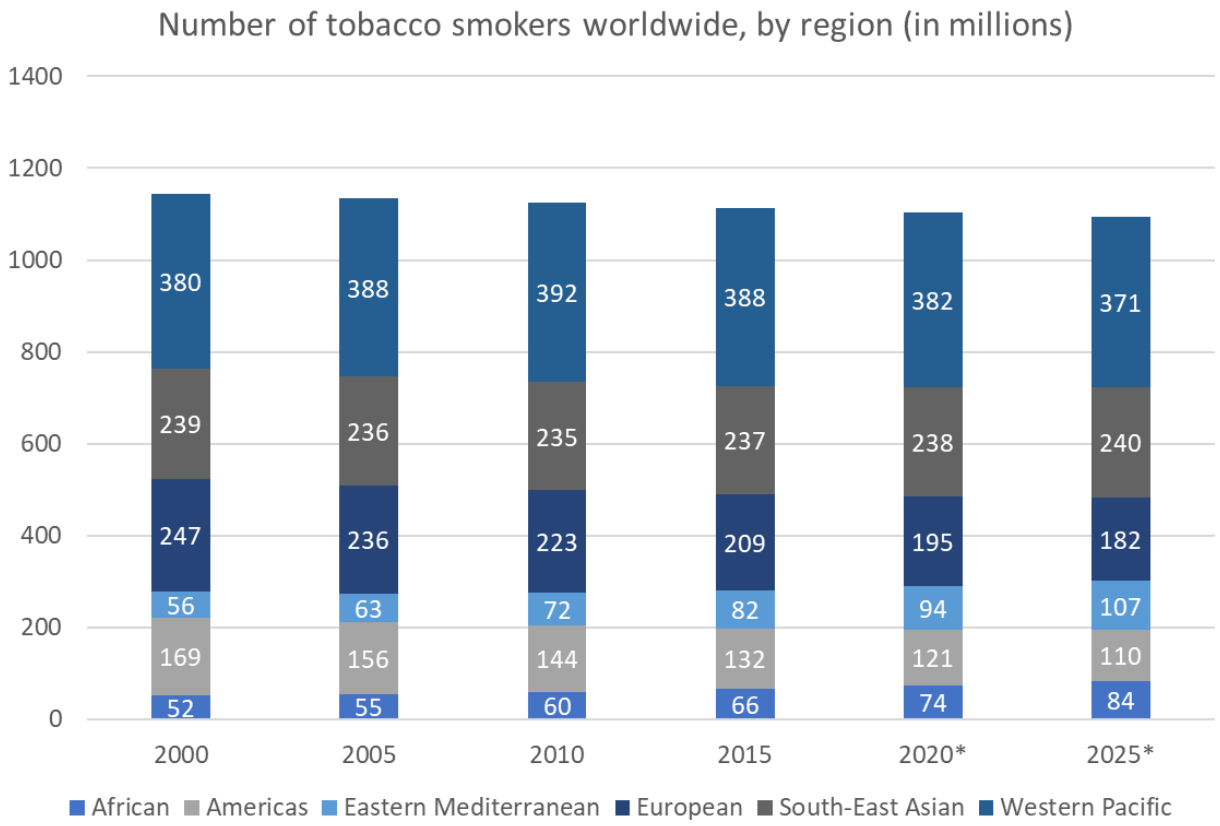
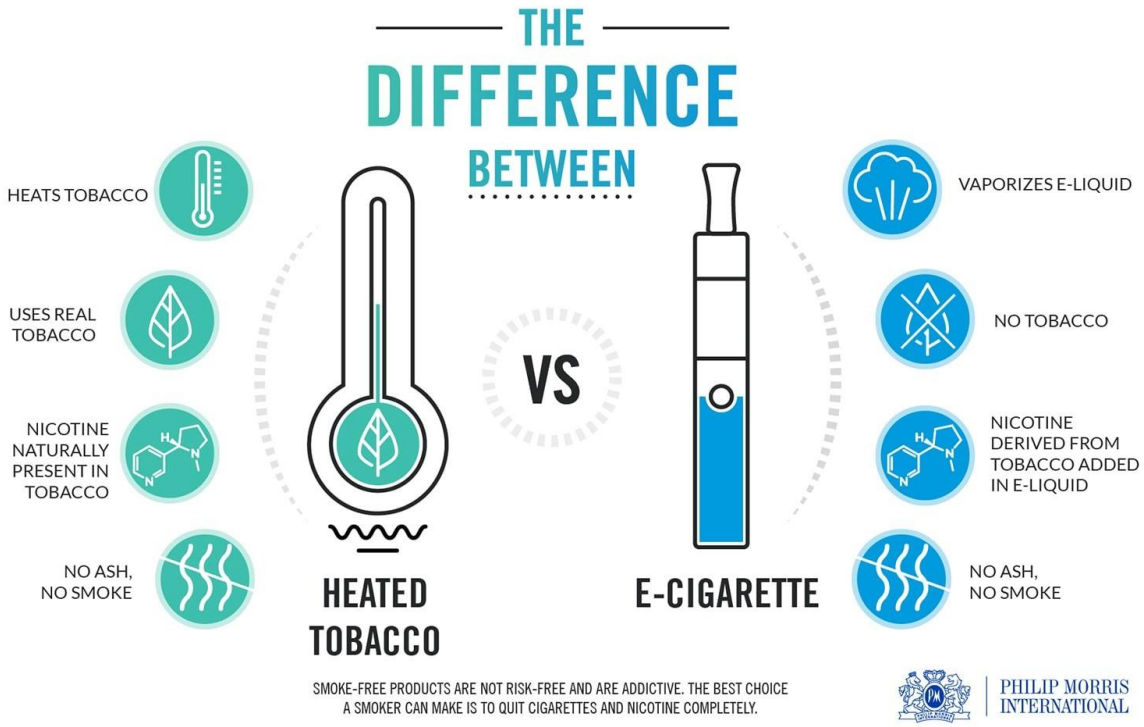
As a young professional, you are thinking about investing your money in stocks. PMI is also on your watchlist, but you are unsure whether it is the right decision to invest in the company. Big questions are buzzing in your head: Should you reward PMI's approach to reinvent themselves and address the problems they helped created or do you choose not to engage with tobacco companies? Do you trust PMI's intentions, and do you believe in a smoke-free future and the Beyond Nicotine strategy? What would you expect from PMI as a shareholder?

INDIVIDUAL COMPONENT - TEACHING NOTE



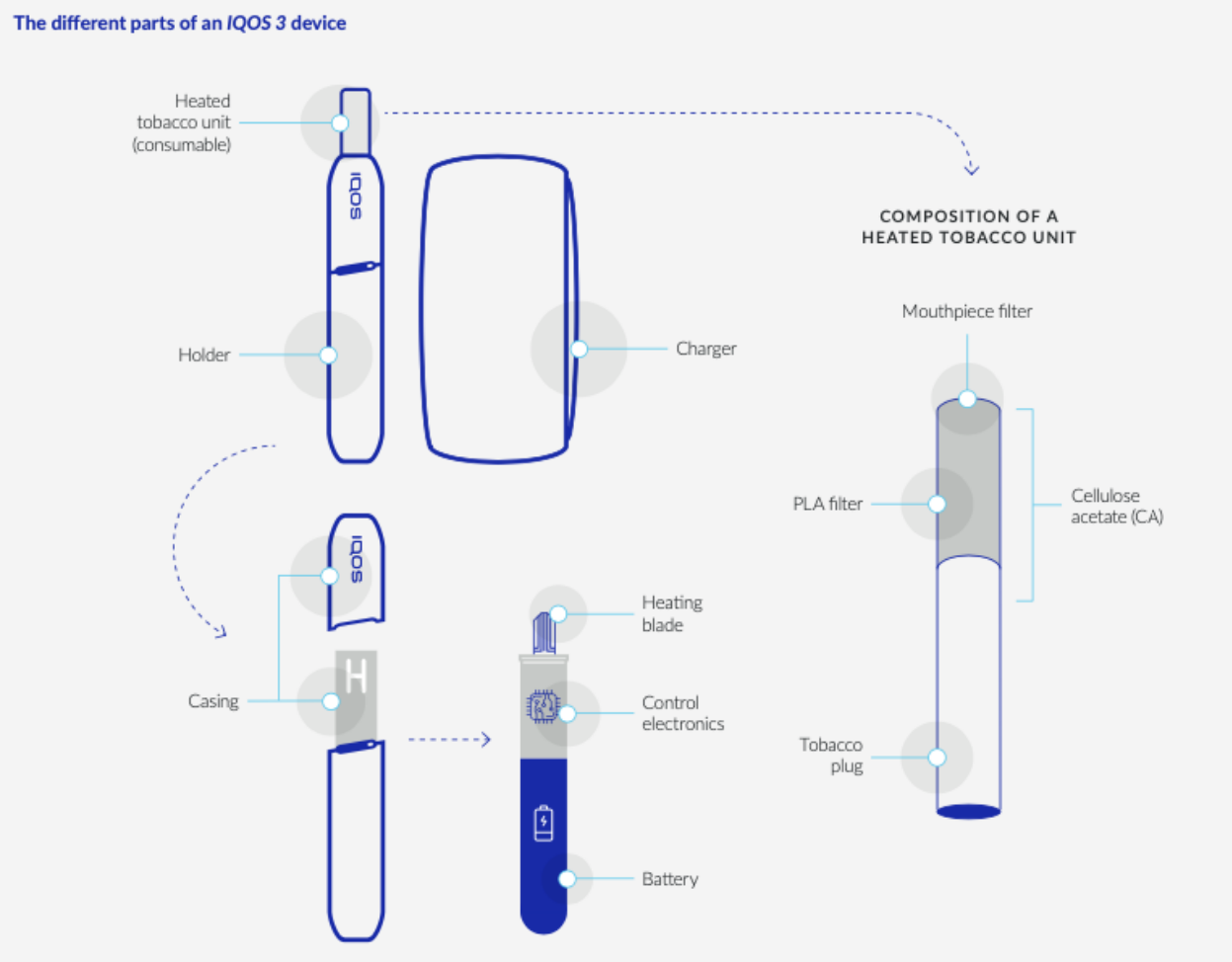
Source: https://www.who.int/publications/i/item/9789240039322 (Accessed December 16, 2021)

Exhibit 2: The difference between Heated Tobacco and E-Cigarettes



Source: https://www.pmi.com/our-science/difference-between-heated-tobacco-products-and-ecigarettes (Accessed 17 Nov, 2021)

Exhibit 3: The different parts of an IQOS 3 device



Source: https://www.pmi.com/sustainability/integrated-report-2020-digital (Accessed 17 Nov, 2021)

Exhibit 4: IQOS Retail stores around the world

IQOS Retail Stores

IQOS store in Lisbon, Portugal
https://www.behance.net/gallery/33712684/IQOS-Flagship-Store-Chiado-Lisboa-Philip-Morris

IQOS store in Tokyo, Japan, with cafe
https://jp.iqos.com/iqos-store

IQOS store in UK
https://www.boxpark.co.uk/shoreditch/shopping/iqos/

IQOS store in Moscow, Russia
http://poliansky.com/portfolio/427/

Source: https://www.tobaccofreekids.org/assets/content/press_office/2019/IQOS-mktg.pdf

(Accessed 04 Dec, 2021)

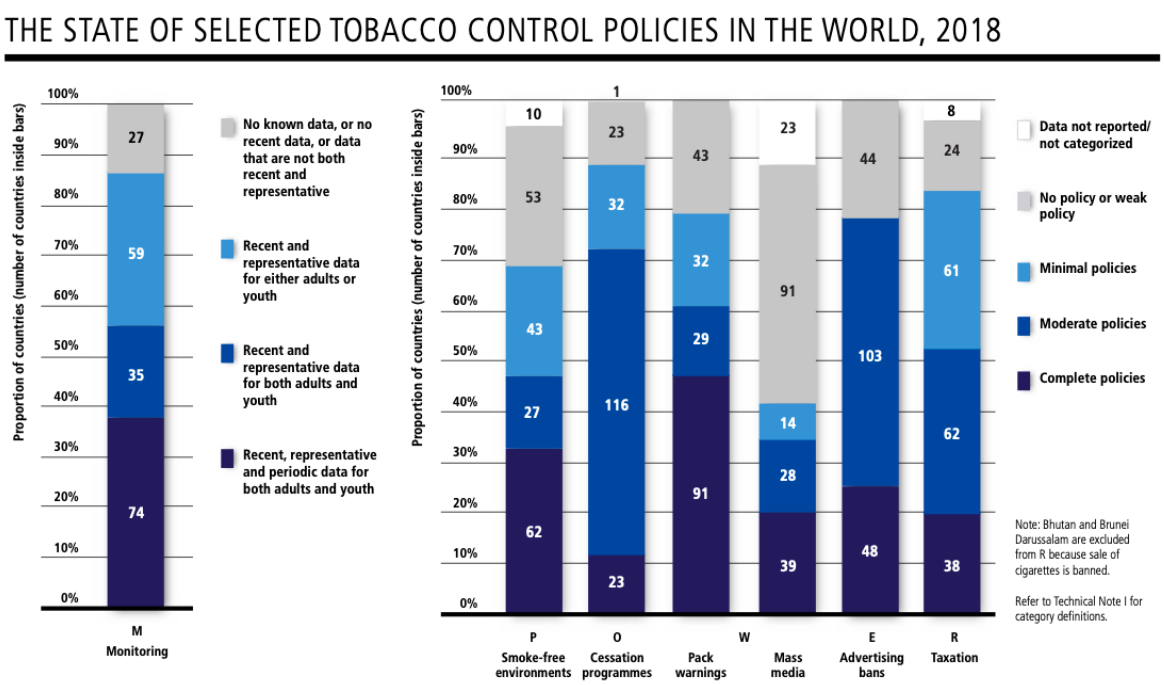
Exhibit 5: Business transformation metrics

Business transformation metrics	2016	2017	2018	2019	2020
R&D expenditure (in millions USD)*	429	453	383	465	495
R&D expenditure (smoke-free/total)* [1]	72%	74%	92%	98%	99%
Cumulative investments behind smoke-free products (since 2008, in billions USD)[6]	3.2	4.6	6.2	7.2	8.1
Year-on-year change in number of SKUs—combustible products[8]	-1.7%	-6.5%	-6.1%	-5.5%	-4.1%
Year-on-year change in number of SKUs—smoke-free products	78.2%	9.9%	37.1%	24.9%	38.2%
SKUs (smoke-free/total)	4.7%	5.5%	7.8%	10.1%	13.9%
Number of markets where IQOS is available for sale*	20	38	44	52	64
Proportion of markets where IQOS is available for sale that are outside the OECD	32%	41%	44%	45%	52%
Number of IQOS stores	26	63	81	199	259
Commercial expenditure (marketing) (smoke-free/total)	15%	39%	60%	71%	76%
Smoke-free product shipment volume (billion units)	8	36	42	60	76
Combustible product shipment volume (billion units)	845	791	767	732	654
Smoke-free product shipment ratio (smoke-free/total)	0.9%	4.4%	5.1%	7.6%	10.4%
Total IQOS users (in millions)	2.1	6.9	9.6	13.5	17.5
Estimated users who have switched to IQOS and stopped smoking (in millions)	1.5	4.7	6.6	9.6	12.7

Estimated users outside the OECD countries who have switched to IQOS and stopped smoking (in millions)	**0.0**	**0.2**	**1.1**	**2.9**	**4.3**
Net revenues (smoke-free/total)	**2.7%**	**12.7%**	**13.8%**	**18.7%**	**23.8%**
Number of markets where net revenues from smoke-free products exceed 10% of total net revenues	**1**	**5**	**19**	**31**	**38**
Number of markets where net revenues from smoke-free products exceed 50% of total net revenues	**0**	**1**	**3**	**4**	**6**

Source: https://www.pmi.com/sustainability/business-transformation-metrics (Accessed 17 Nov, 2021)

Exhibit 6: The state of selected tobacco control policies in the world, 2018



Source: https://apps.who.int/iris/bitstream/handle/10665/325968/WHO-NMH-PND-2019.5-eng.pdf?ua=1 (Accessed 17 Nov, 2021)

Appendix – Individual Component

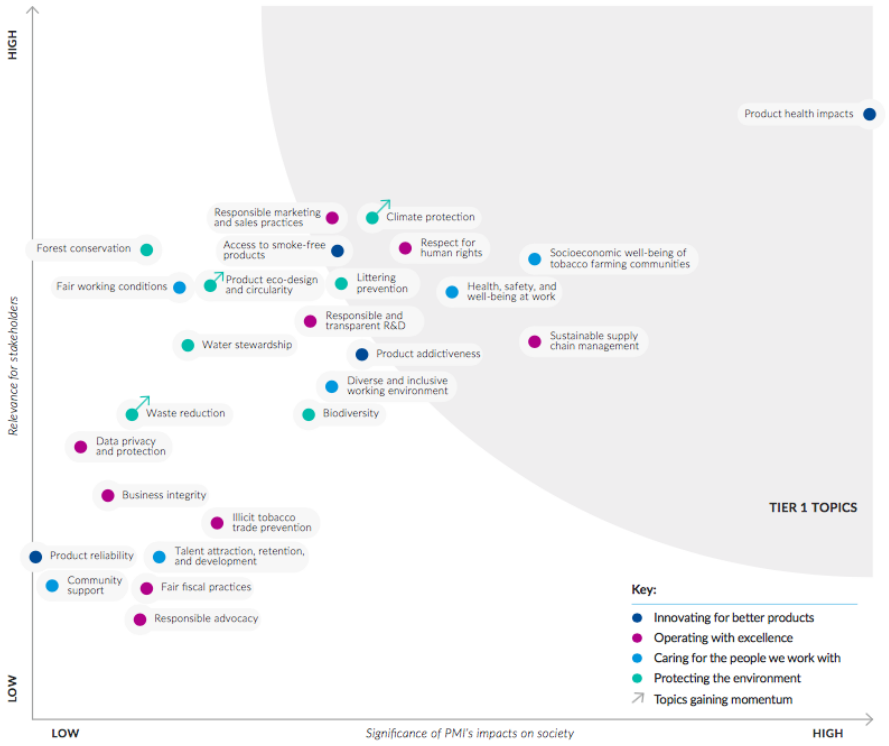
Exhibit 1 – United Nations Sustainable Development Goals

Source: https://sdgs.un.org/goals

Exhibit 2- Sustainability at PMI: Strategic framework

Source: https://www.pmi.com/sustainability/our-approach-to-sustainability

Exhibit 3 – PMI´s Sustainability Materiality Matrix



Source: https://www.pmi.com/resources/docs/default-source/default-document-library/pmi_sustainability-materiality-report.pdf?sfvrsn=7fc23bb4_4

References - Group Component

Action on Smoking and Health, "ASH reaction to new Philip Morris IQOS 'heat not burn' product" Accessed November 17, 2021, https://ash.org.uk/media-and-news/press-releases-media-and-news/ash-reaction-to-new-philip-morris-iqos-heat-not-burn-product/.

American Heart Association. 2018 "Smoking in America: Why more Americans are kicking the habit" Accessed November 18, 2021, https://www.heart.org/en/news/2018/08/29/smoking-in-america-why-more-americans-are-kicking-the-habit.

Bar-Zeev, Yael, Hagai Levine, Gil Rubinstein, Ihab Khateb, and Carla J. Berg. "IQOS Point-of-Sale Marketing Strategies in Israel: A Pilot Study - Israel Journal of Health Policy Research." BioMed Central. BioMed Central, January 14, 2019. https://ijhpr.biomedcentral.com/articles/10.1186/s13584-018-0277-1.

Barron's, "Philip Morris CEO on Vaping, Juul, and Staying Relevant", Accessed November 17, 2021, https://www.barrons.com/articles/philip-morris-ceo-on-vaping-juul-and-staying-relevant-51549577459.

Belluz, Julia. "An FDA Panel Is Ruling on a New Philip Morris Product That Could Upend the Cigarette Market." Vox. Vox, January 25, 2018. https://www.vox.com/science-and-health/2018/1/25/16925652/iqos-philip-morris-health-fda.

Bialous, S.,/Freeman B.. "Communication Challenges of a Tobacco Addictiveness Reduction Policy." Tobacco Induced Diseases. The International Society for the Prevention of Tobacco Induced

Diseases, May 12, 2021. http://www.tobaccoinduceddiseases.org/Communication-challenges-of-a-tobacco-addictiveness-reduction-policy,134747,0,2.html.

British Thoracic Society, "BTS statement: Proposed takeover of Vectura by Philip Morris International", Accessed November 17, https://www.brit-thoracic.org.uk/news/2021/bts-statement-proposed-takeover-of-vectura-by-philip-morris-international/.

Castaldelli-Maia, João Mauricio, Antonio Ventriglio, and Dinesh Bhugra. "Tobacco Smoking: From 'Glamour' to 'Stigma'. A Comprehensive Review." Psychiatry and Clinical Neurosciences 70, no. 1 (2015): 24–33. https://doi.org/10.1111/pcn.12365.

Center for Tobacco Control Research and Education University of California San Francisco, "FDA should not authorize Philip Morris International to market IQOS with claims of reduced risk or reduced exposure" Accessed November 17, 2021, https://tobacco.ucsf.edu/fda-should-not-authorize-philip-morris-international-market-iqos-claims-reduced-risk-or-reduced-exposure.

Centers for Disease Control and Prevention, "About Electronic Cigarettes (e-Cigarettes)." September 30, 2021. https://www.cdc.gov/tobacco/basic_information/e-cigarettes/about-e cigarettes.html.

Chun, Lauren, Farzad Moazed, Michael Matthay, Carolyn Calfee, and Jeffrey Gotts. "Possible Hepatotoxicity of IQOS." Tobacco Control 27, no. Suppl 1 (2018). https://doi.org/10.1136/tobaccocontrol-2018-054320.

Curley, Bob. "'Heat Not Burn' Products as Harmful as Cigarettes." Healthline. Healthline Media, April 21, 2021. https://www.healthline.com/health-news/heat-not-burn-products-may-be-almost-as-harmful-as-cigarettes.

Degenhard, J. "Smoking Prevalence in the World 2025." Statista, August 23, 2021. https://www.statista.com/forecasts/1148647/smoking-prevalence-forecast-in-the-world.

Directive 2014/40/EU of the European…, European Commission. Accessed December 16, 2021. https://ec.europa.eu/health/sites/default/files/tobacco/docs/dir_201440_en.pdf.

Euromonitor, "Heat-Not-Burn Launches Open a New Front for the Future of...", November 22, 2014. https://www.euromonitor.com/article/heat-not-burn-launches-open-a-new-front-for-the-future-of-tobacco.

European Commission, "Draft of the UAE GCC Technical Regulation "Electronic Nicotine Products" Accessed December 12, 2021, https://ec.europa.eu/growth/tools-databases/tbt/en/search/?tbtaction=search.detail&num=482&Country_ID=ARE&dspLang=EN&BASDATEDEB=&basdatedeb=&basdatefin=&baspays=ARE&basnotifnum=482&basnotifnum2=482&bastypepays=ARE&baskeywords=.

European Commission – Public Health, "Product Regulation.", December 14, 2021. https://ec.europa.eu/health/tobacco/products_en.

"Evidence Review of e-Cigarettes and Heated Tobacco Products 2018: Executive Summary." GOV.UK. Accessed December 16, 2021. https://www.gov.uk/government/publications/e-cigarettes-and-heated-tobacco-products-evidence-review/evidence-review-of-e-cigarettes-and-heated-tobacco-products-2018-executive-summary.

Financial Times, "Philip Morris rules out future merger with Altria", Accessed November 17, 2021, https://www.ft.com/content/bebc116d-f2ad-49b7-83a4-8bc1b3cc798a.

Ghosh, Palash. "Tobacco Stock Prices Are Surging despite Cigarette Sales Declines, Here's Why Philip Morris and Others Are Still Smoking Hot." Forbes. Forbes Magazine, March 11, 2021. https://www.forbes.com/sites/palashghosh/2021/03/11/tobacco-stock-prices-are-surging-despite-cigarette-sales-declines-heres-why-philip-morris-and-others-are-still-smoking-hot/?sh=1b8f67ad57da.

Go–PopUp, "The secret behind the IQOS stores", Accessed November 17, 2021, https://magazine.gopopup.com/en/success-story-the-secret-behind-the-iqos-stores/.

Gruszczynski, L., Melillo, M. 2020. "The FCTC dilemma on heated tobacco products." Global Health 16, 81. Accessed December 12, 2021, https://doi.org/10.1186/s12992-020-00596-x

Law No. 63/2017. Portugal (2017). Accessed December 12 2021, https://www.tobaccocontrollaws.org/files/live/Portugal/Portugal%20-%20Law%20No.%2063_2017.pdf.

Jacobson, Peter D., Jeffrey Wasserman, and John R. Anderson. "Historical Overview of Tobacco Legislation and Regulation." Journal of Social Issues 53, no. 1 (2010): 75–95. https://doi.org/10.1111/j.1540-4560.1997.tb02432.x.

Kirkham, Chris. "Inside the Philip Morris Campaign to 'Normalize' a Tobacco Device." Reuters. Thomson Reuters, February 21, 2020. https://www.reuters.com/article/us-philipmorris-international-iqos-insig-idUSKBN20F1Q7.

Kirkham, Chris. "Exclusive: Philip Morris Suspends Social Media Campaign after Reuters Exposes Young 'Influencers'." Reuters. Thomson Reuters, May 11, 2019. https://www.reuters.com/article/us-philipmorris-ecigs-instagram-exclusiv/exclusive-philip-morris-suspends-social-media-campaign-after-reuters-exposes-young-influencers-idUSKCN1SH02K.

Liu, Xiaoqiu, Alessandra Lugo, Lorenzo Spizzichino, Takahiro Tabuchi, Giuseppe Gorini, and Silvano Gallus. "Heat-Not-Burn Tobacco Products Are Getting Hot in Italy." Journal of epidemiology. Japan Epidemiological Association, May 5, 2018. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5911679/.

Mallock, N., Pieper, E., Hutzler, C., Henkler-Stephani, F., & Luch, A. (2019). Heated Tobacco Products: A Review of Current Knowledge and Initial Assessments. NCBI. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6795920/.

Ministero della Salute, “Prevenzione e controllo del tabagismo” (2020), Accessed December 12, 2021, https://www.salute.gov.it/imgs/C_17_pubblicazioni_2916_allegato.pdf.

Ministry of Health Singapore, “Heated tobacco products are harmful to health”, Accessed November 17, 2021, https://www.moh.gov.sg/news-highlights/details/heated-tobacco-products-are-harmful-to-health.

National Research Council (US) Committee on Population. “Tobacco Control Policy Strategies: Lessons from Western Developed Countries.” Premature Death in the New Independent States. U.S. National Library of Medicine, January 1, 1997. https://www.ncbi.nlm.nih.gov/books/NBK233392/.

O'Connell, Dominic. “Philip Morris Could Stop Making Conventional Cigarettes.” BBC News. BBC, November 30, 2016. https://www.bbc.com/news/business-38152297.

OECD, “National taxes and retail price for a pack of 20 cigarettes of the most sold brand”, Accessed December 15, 2021, https://www.oecd-ilibrary.org/social-issues-migration-health/national-taxes-and-retail-price-for-a-pack-of-20-cigarettes-of-the-most-sold-brand-2018_23ef50d3-en.

PMI Investor Relations, “Philip Morris International Reports Progress Toward Accelerating the End of Smoking”, Accessed December 12, 2021, https://www.pmi.com/investor-relations/press-releases-and-events/press-releases-overview/press-release-details?newsId=23916.

Philip Morris International, “Can a tobacco company be sustainable?”, Accessed December 12, 2021, https://www.pmi.com/media-center/news/transforming-our-business-the-sustainable-way.

Philip Morris International, “Can innovative products like IQOS accelerate the decline of smoking? - A case study from PMI’s Integrated Report 2020.” Accessed November 17, 2021, https://www.pmi.com/sustainability/case-studies/can-innovative-products-like-iqos-accelerate-the-decline-of-smoking.

Philip Morris International, “Communication on Progress 2016 United Nations Global Compact.” Accessed December 16, 2021, https://www.pmi.com/resources/docs/default-source/pmi-sustainability/ungc_report_2016_.pdf.

Philip Morris International, “Delivering a smoke-free future” Accessed December 12, 2021, https://www.pmi.com/our-transformation/delivering-a-smoke-free-future.

Philip Morris International, “FDA Authorizes Marketing of IQOS as a Modified Risk Tobacco Product” Accessed November 17, 2021, https://web.archive.org/web/20200719161635/https:/www.pmi.com/investor-relations/press-releases-and-events/press-releases-overview/press-release-details/?newsId=22631.

Philip Morris International, “Integrated Report 2020” Accessed November 17, 2021, https://www.pmi.com/sustainability/integrated-report-2020-digital.

Philip Morris International. “Key Milestones.” Philip Morris International. Philip Morris International, July 31, 2019. https://www.pmi.com/who-we-are/key-milestones.

Philip Morris International, “Philip Morris International Looks Toward A Smoke-Free Future” Accessed November 17, 2021, https://www.pmi.com/media-center/press-releases/press-details/?newsId=12056.

Philip Morris International, “Philip Morris International Progress Report 2016.” Accessed December 16, 2021. https://www.pmi.com/resources/docs/default-source/pmi-sustainability/ungc_report_2016_.pdf.

Philip Morris International, “PMI aims to become a majority smoke-free business by 2025” Accesses November 17, 2021, https://www.pmi.com/our-transformation/pmi-aims-to-become-a-majority-smoke-free-business-by-2025.

Philip Morris International, “*Responsible Marketing Practices at PMI*.”, Accessed December 12, 2021, https://www.pmi.com/resources/docs/default-source/default-document-library/responsible-marketing-practices-at-pmi.pdf?sfvrsn=496446b4_4.

Philip Morris International, "Sustainability Report 2018" Accessed December 16, 2021. https://www.pmi.com/resources/docs/default-source/pmi-sustainability/pmi-sustainability-report-2018-low-res.pdf?sfvrsn=cada91b5_4.

Philip Morris International, "The problem with burning", Accessed December 12, 2021, https://www.pmi.com/our-science/the-problem-with-burning.

Philip Morris International, "The role of nicotine", Accessed December 12, 2021, https://www.pmi.com/our-science/the-role-of-nicotine.

Philip Morris International, "Transforming beyond nicotine: Thinking net positive", Accessed November 17, 2021, https://www.pmi.com/sustainability/reporting-on-sustainability/transforming-beyond-nicotine---letter-from-the-chief-sustainability-officer.

Philip Morris International, "Unsmoke Your World", Accessed December 12, 2021, https://www.unsmokeyourworld.com/en/.

Philip Morris International, "What are reduced-risk products?", Accessed December 12, 2021, https://www.pmi.com/faq-section/faq/what-are-reduced-risk-products.

Philip Morris International, "What is IQOS?" Accessed December 16, 2021, https://www.pmi.com/faq-section/faq/what-is-iqos.

Philip Morris International, "Why burning is the main problem" Accessed December 12, 2021, https://www.pmi.com/smoke-free-products/iqos-our-tobacco-heating-system.

PMI Science, "Platform 1 Heated Tobacco Product." Heated Tobacco Product | PMI Science. Accessed December 16, 2021. https://www.pmiscience.com/our-products/platform1.

PMI Science, "Delivering a smoke-free future", Accessed December 12, 2021, https://www.pmiscience.com/resources/docs/default-source/article-documents/smoke-free-up-close-regular-version.pdf.

PMI Science, "Our Findings", Accessed December 12, 2021. https://www.pmiscience.com/science/our-findings#preliminary-clinical-platform1-reduced-disease-risk.

Reuters, "U.S. senators ask FDA to reject Philip Morris' iQOS application" Accessed November 17, 2021, https://www.reuters.com/article/us-health-tobacco-philipmorris/u-s-senators-ask-fda-to-reject-philip-morris-iqos-application-idUSKBN1FR1WH?feedType=RSS&feedName=topNews&utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+reuters%2FtopNews+%28News+%2F+US+%2F+Top+News%29.

Rodu, Brad, and William T Godshall. "Tobacco Harm Reduction: An Alternative Cessation Strategy for Inveterate Smokers - Harm Reduction Journal." BioMed Central. BioMed Central, December 21, 2006. https://harmreductionjournal.biomedcentral.com/articles/10.1186/1477-7517-3-37.

Smart Brief, “Why PMI is leading a harm reduction campaign” Accessed December 12, 2021, https://www.smartbrief.com/original/2021/11/why-pmi-leading-harm-reduction-campaign.

South China Morning Post, “Hong Kong bans sale of e-cigarettes and other heated tobacco products but personal use still allowed” Accessed November 17, 2021, https://www.scmp.com/news/hong-kong/politics/article/3153176/hong-kong-bans-sale-e-cigarettes-and-other-heated-tobacco.

St Helen G, Jacob Iii P, Nardone N, Benowitz NL. IQOS: examination of Philip Morris International's claim of reduced exposure. Tob Control. 2018 Nov;27(Suppl 1):s30-s36. doi: 10.1136/tobaccocontrol-2018-054321.

Sucher, Sandra J/Gupta, Shalene. 2021. The Power of Trust: How Companies Build It, Lose It, Regain It. New York: Public Affairs.

The Lancet, “Tobacco Control in the Western Pacific Region.” May 2021. https://www.thelancet.com/journals/lanwpc/article/PIIS2666-6065(21)00088-2/fulltext.

Therapeutic Goods Administration, Department of Health (Australia), “Notice of interim decisions on proposed amendments to the Poisons Standard - ACMS/ACCS/Joint ACMS-ACCS meeting” Accessed December 12, 2021, https://www.tga.gov.au/book-page/32-nicotine-heated-tobacco-products.

Tobacco Control Research Group - University of Bath, "FDA does not rule that IQOS reduces tobacco-related harm, yet PMI still claims victory" Accessed November 17, 2021, https://exposetobacco.org/wp-content/uploads/STP054_FDA_IQOS_Brief_v3.pdf.

Tobacco Journal International (2015), PMI expands iQOS ·distribution. http://www.tobaccojournal.com/PMI_expands_iQOS_8231_distribution.53276.0.html.

Tobacco Products and Vaping Act. Canada (1997, as amended 2018). Accessed December 12, 2021, https://laws-lois.justice.gc.ca/eng/acts/t-11.5/FullText.html.

Tobacco Tactics, "United Nations Global Compact (UNGC)" Accessed November 17, 2021, https://tobaccotactics.org/wiki/united-nations-global-compact-ungc/.

United Nations Global Compact "Frequently Asked Questions - How do companies participate in the UN Global Compact?" Accessed November 17, 2021, https://www.unglobalcompact.org/about/faq.

Uranaka, Taiga, and Ritsuko Shimizu. "Smoke without Fire: Japan Becomes Test Ground for Real Tobacco e-Cigarette." Reuters. Thomson Reuters, March 29, 2016. https://www.reuters.com/article/us-japan-tobacco-idUKKCN0WV0GQ.

U.S. Food and Drug Administration, "FDA Authorizes Marketing of IQOS Tobacco Heating System with 'Reduced Exposure' Information" (2020). Accessed November 17,

2021, https://www.fda.gov/news-events/press-announcements/fda-authorizes-marketing-iqos-tobacco-heating-system-reduced-exposure-information.

U.S. Food and Drug Administration, "Scientific Review of Modified Risk Tobacco Product Application (MRTPA) Under Section 911(d) of the FD&C Act -Technical Project Lead " Accessed December 12, 2021, https://www.fda.gov/media/139796/download.

World Bank, "Tobacco in South Asia", Accessed December 15, 2021. https://web.worldbank.org/archive/website01213/WEB/IMAGES/TOBACCOI.PDF.

World Health Organization, "Guidelines for implementation of Article 5.3 of the WHO Framework Convention on Tobacco Control" Accessed December 12, 2021, https://www.who.int/fctc/guidelines/article_5_3.pdf?ua=1.

World Health Organization, "Heated Tobacco Products – A Brief", Accessed December, 12, 2021, https://www.euro.who.int/__data/assets/pdf_file/0008/443663/Heated-tobacco-products-brief-eng.pdf.

World Health Organization, "Heated tobacco products: information sheet - 2nd edition" Accessed December 12, 2021, https://www.who.int/publications/i/item/WHO-HEP-HPR-2020.2.

World Health Organization, "Tobacco Key Facts", Accessed December 12, 2021, https://www.who.int/news-room/fact-sheets/detail/tobacco.

World Health Organization, "WHO Global Report on Trends in Prevalence of Tobacco Use

2000-2025, Fourth Edition." Accessed December 16, 2021. https://www.who.int/publications/i/item/9789240039322.

World Health Organization, "WHO statement on heated tobacco products and the US FDA decision regarding IQOS" Accessed November 17, 2021, https://www.who.int/news/item/27-07-2020-who-statement-on-heated-tobacco-products-and-the-us-fda-decision-regarding-iqos.

References – Individual Component

Philip Morris International, "Defining our sustainable priorities." Accessed on December 16, 2021, https://www.pmi.com/media-center/news/material-impacts-defining-our-sustainable-priorities

Philip Morris International, "Integrated Report 2020", Accessed on December 13, 2021, https://www.pmi.com/sustainability/integrated-report-2020-digital

Philip Morris International, "Sustainability Materiality Report", Accessed on December 13, 2021, https://www.pmi.com/resources/docs/default-source/default-document-library/pmi_sustainability-materiality-report.pdf?sfvrsn=7fc23bb4_4

Philip Morris International, "Our Approach to Sustainability." Accessed on December 10, 2021, https://www.pmi.com/sustainability/our-approach-to-sustainability

Philip Morris International, "Our transformation: PMI's journey to deliver a smoke-free future.", Accessed on December 13, 2021, https://www.pmi.com/our-transformation/our-interactive-transformation

Philip Morris International, “Smoke-free Progress: PMI´s Chief Sustainability Officer on Our Integrated Reports (New Release), https://www.youtube.com/watch?v=wI87jdlA4Zw

Philip Morris International, “Strategic sustainability: Why transparent reporting matters.”, Accessed on December 10, 2021, https://www.pmi.com/sustainability/sustainability-news/strategic-sustainability---why-transparent-reporting-matters.

United Nations, “Sustainable Development Goals”, Accessed on December 10, 2021, https://sdgs.un.org/goals

Philip Morris International, PMI’s CEO Jacek Olczak Shares His Vision Of A Smoke-Free Future (Without Cigarettes), Accessed on December 15, 2021, https://www.youtube.com/watch?v=dUbUuv7urlw&t=1s