

Investment Insight

A LEGACY INDUSTRY DISRUPTING ITSELF

Vapes and Heatsticks—The Imminent Transformation of the Tobacco Industry



I believe there will come a moment in time where I would say we have sufficient adoption of these alternative products ... to start envisaging, together with governments, a phase-out period for cigarettes. ... I hope this time will come soon.

*André Calantzopoulos, Philip Morris International CEO
30 November 2016*

Many of us make New Year's resolutions. Most revolve around self-improvement. Eat healthier, drink less, do more exercise, or quit smoking. Smoking of course is among the hardest. 70% of smokers say that they intend to quit their habit at any time. Yet studies show that it takes a year or more to give up cigarettes. The relapse rate is 90% within three months. Withdrawal and physical craving for nicotine is just the first phase. Mental cravings can be triggered at any time and are even harder to overcome.

We look for disruptive technologies that have the potential to disrupt industries for the better, to identify risks to existing businesses and to find opportunities for future ones. The tobacco industry is undergoing such a disruption. But unlike others, it is disrupting itself. The CEO of Philip Morris International has said that his company, the makers of Marlboro, could stop selling conventional cigarettes sometime soon. The industry's next generation products (NGPs) have the potential to become viable alternatives to cigarettes. Their success will have significant positive implications for smokers and public health but also for the tobacco industry and for investors.

Anti-smoking: The most successful public health campaign ever

The global public health campaign against smoking has been among the most successful campaigns ever. Decades of public health policy mean that most smokers are aware of the health risks. The industry is highly regulated and taxed throughout the world. In volume terms smoking is in broad decline in the developed world and is peaking in emerging markets. In pricing terms, the addictive nature of nicotine means that smokers are largely price-inelastic allowing the industry and governments to collude together to raise prices. About 70% of the cost of a pack of cigarettes goes to governments. For many cash strapped governments it is an important source of revenues.

The history of the industry is appalling, with the well documented denials of the health impact of smoking. Since the 1970s the industry has at least acknowledged the impacts although it has made only incremental changes to improve its products and diminish their harm.

An industry disrupting itself?

Today, the tobacco industry is in the early stages of disrupting itself. The companies have invested billions of dollars in the development of NGPs to replace cigarettes. For the first time, vaping and heat-not-burn products offer a consumer experience that is close enough to cigarettes to offer an alternative while avoiding most if not all of the health impacts of burning tobacco. For Philip Morris International, the fact that its IQOS heat-not-burn product contains tobacco allows it for the first time to brand an alternative to conventional cigarettes with its most valuable asset, its world famous Marlboro trademark.

What if there really were an alternative cigarette product that delivers nicotine in a pleasurable way and provides a similar experience to cigarettes without the health impact of inhaling tar and other by-products of combustion, and that therefore does not lead to the types of cancer and other issues that conventional cigarettes do? Could it mean that smoking becomes a vice similar to alcohol or sugar?

Consider the comparison between nicotine itself and alcohol. Both are highly addictive toxins. Both can be lethal if consumed in high quantities. Regular consumption of alcohol leads to physical incapacitation in ways that nicotine does not. The cost to society of alcohol consumption is high in the form of direct and indirect health costs and other issues. It is either highly regulated in terms of access and taxes or is outright prohibited, as it was in the United States in the 1920s and 30s. And yet many societies have decided to allow its consumption within the rules they have established.

We do not yet know if next generation products will be proven to deliver sufficient health benefits or whether they will achieve widespread customer acceptance. We also do not know what the eventual public health and regulatory response will be.

What we can say is that if they do work, the implications of this disruption are no less staggering than those in other industries. The impact will be tremendous. A vilified and declining industry could evolve into a potentially acceptable and growing industry much like the spirits industry. It is early days but it is exactly this kind of change—in this case a positive disruption driven by the industry itself—that we look for in terms of interest and opportunity.

Next Generation Products: Working towards a less harmful future for cigarettes

Quitting smoking is difficult. It is not just the nicotine in tobacco that is addictive but the other parts of the ritual of smoking a cigarette, like having something to occupy your hands, the drag on the cigarette and the exhalation that smokers crave. The nicotine replacement therapies developed so far, like patches and gums, can improve the odds of successfully quitting. Without the other features of the ritual however, they cannot fully satisfy the craving.

The relentless pressure on the tobacco industry has led to a wave of innovation that has only just begun. NGPs hold the promise of reducing the health impact of smoking, making it easier to quit smoking cigarettes and transforming the industry. They are the first substitutes for cigarettes that combine the delivery of nicotine without the risk of

combustion with an experience that mimics many more of the rituals involved with smoking a cigarette and is close enough to offer smokers a pleasurable experience.

Many of us will have seen the first wave of NGPs, e-cigs and vapes. Not quite as many will be familiar with the second wave, heat-not-burn tobacco products, which could be transformative. The following short overview of NGPs is intended to provide a baseline against which we can evaluate the health benefit and the opportunity.

So far NGPs have a worldwide market share of only about 1% at present. We think that this is likely to grow significantly. For the first time it is not just small startups but the tobacco companies themselves who are spearheading the development of these products and are spending significant sums on research and development. Philip Morris International (Marlboro) has spent more than \$2bn on NGPs to research the background science, product development and understanding of adult smoker trends. British American Tobacco (Lucky Strike and Dunhill) has invested more than £500m into its own NGPs.

The first generation: E-cigs and vapes

NGPs can be broadly classed into three different categories. The first are e-cigarettes or vapour products (vapes). E-cigarettes are battery powered electronic devices that heat a liquid solution (called eliquid) to create a vapour. The user inhales the eliquid's vapour rather than smoke. The eliquids come in a variety of different flavours and do not all necessarily contain nicotine. They have created a new experience and even their own language.



The first incarnation of NGPs is best described as cig-a-likes. They were designed to mimic the look of conventional cigarettes. However, e-cigs had only limited appeal for consumers. They did not offer a satisfactory nicotine delivery and the taste experience did not closely enough replicate the taste of a cigarette.

The industry quickly moved away from e-cigs closely resembling a cigarette to vapes emphasising nicotine delivery, taste and convenience. Some vapes are still *disposable* where there is a pre-filled cartridge of eliquid, others are *rechargeable* which allows for refills of the eliquid by the user, and lastly there are *modular* systems which are also refilled by the user but can be altered to regulate the power and are open systems so different eliquid brands can be used.



The vaping industry has achieved initial penetration in Western markets, notably in the US, the UK and France. In the US, vaping has created an industry of its own, with teenagers preferring to vape than smoke. In the UK, it is estimated that 4% of the adult population vape compared to the 19% who smoke.

The vaping industry has been extremely fragmented as countless new start-ups attempt to break into the market and the internet has become an important retail sales channel. It is

estimated that around 35% of vaping products in the USA are sold online. The breadth of products available online creates choice but also confusion given the greater competition

and the constant emergence of newer brands with less brand loyalty. The contrast could not be starker to the cigarette brands, which have built up decades of brand awareness and tightly controlled and regulated retail channels. Additionally, regulatory issues have meant that tobacco companies have been unable to use their tobacco brands or trademarks for use with e-cigarettes, which has resulted in a proliferation of new and seemingly unrelated brands. The fledgling industry has gone through a process of consolidation with major tobacco companies placing their bets on some of the players and others looking to join forces to achieve scale to cope with challenges to production, distribution and increasing regulatory complexity.

The regulatory landscape for NGPs is constantly evolving as legislation catches up with growing demand. It is likely that many smokers have tried e-cigarettes in the US and the UK in the attempt to curb their smoking habit. However, this is not the case elsewhere in the world, where nicotine-based vaping is effectively illegal in more than 20 countries. This includes large countries with significant populations of smokers such as Japan, Australia, Brazil, Sweden, Norway, Switzerland and Turkey. Eliquids not containing nicotine are available, but the absence of nicotine means vapes in those markets are an entirely different product that would not necessarily aid smokers in quitting.

Addressing the health issues: Licensed medical products

The second category of NGPs are licensed medicinal products which have also been developed by the tobacco companies themselves. These are products authorised as a medicine and are subject to strict regulations. We think that these licensed products will have a limited audience. They are designed for medicinal value rather than fashion or lifestyle. Additionally, given the strict regulations, their distribution is likely to be constrained and only available in certain outlets such as pharmacies. With a restricted distribution and functional over fashion design, we think that these licensed products will remain more of a niche product. Indeed during the course of writing this article, British American Tobacco has announced plans to abandon their Voke product as it has failed to achieve commercial success.



The closest yet: Heat-not-burn products

The third category is tobacco heating products. The most popular of these are heat-not-burn products which heat the tobacco to produce the nicotine vapour rather than burning it. Scientists believe that toasting not burning tobacco greatly reduces some of the toxins inhaled with the smoke, in particular the tar that leads to lung cancer. Yet this research is still in the early stages without a conclusive verdict and with the long term effects still unknown. The user experiences a closer taste experience to cigarettes compared to other NGPs and it also replicates many of the same rituals associated with smoking.

First among the leading tobacco companies, Philip Morris International has launched its first version called the iQOS (believed to stand for I Quit Original Smoking) but also uses the Marlboro brand on the packaging too. As a reminder, the tobacco companies are legally prevented from using their combustible brands and trademarks on their alternative non-tobacco nicotine products. However, as the iQOS does contain tobacco, then the tobacco trademark such as Marlboro in the case of Philip Morris International can be used. Their brands are the most valuable assets for tobacco companies so the fact that Philip Morris

International has put the Marlboro brand on the iQOS product shows how seriously they are taking the challenge and the opportunity. This association could help spur the demand for the heat-not-burn and tobacco heating market.

One of the first countries in which the iQOS was launched was Japan. It has had good early success. Currently, it is estimated that iQOS has a weekly national market share of around 5.5%. It has a high conversion rate meaning that those who have tried it have decided to persist. However, we should remember that e-cigarettes containing nicotine are banned for sale in Japan, so iQOS was one of the first NGPs available. iQOS has been launched in other cities across Europe and has had success (incidentally in some other countries where the nicotine containing e-cigarettes are also not legal), but to not quite the same degree as in Japan.



After witnessing the early success of the iQOS in Japan, British American Tobacco and Japan Tobacco are both launching their own versions of heat-not-burn devices in Japan too. The big tobacco companies are all increasing their investments into NGPs in the heat-not-burn category given the similarities to combustible tobacco cigarette smoking.

From a consumer perspective, iQOS appears like a version 1.0. It provides a good enough experience in terms of design, useability and taste, but clearly has significant room for improvement in future versions.

From a public health perspective, Philip Morris International has also recently applied to the FDA in the United States for a Modified Risk Tobacco Product for the iQOS. The health impact of smoking is well known and is often cited as one of the key reasons why smokers desire to quit. However, we feel that it is important to note that with the NGPs, there are still questions around consumer safety and the long-term health risks. As these are new products on the market, their long-term effects are unknown. Scientists do believe that the NGPs are of lower risk than smoking and some of the tobacco companies refer to them as Reduced Risk Products.

However, the NGPs do still contain nicotine which is an addictive and harmful substance if consumed in high concentration. Obviously, quitting tobacco use entirely is the best health option but the NGPs could provide a lower risk alternative to smoking cigarettes. It is an open question whether the overall health impact of heat-not-burn products will be limited to nicotine or whether the heating process and the treatment of the tobacco required for the experience still generates by-products that are harmful. The public health issue of whether e-cigarettes and other NGPs act as a gateway into smoking cigarettes also needs to be addressed. This is why we await with interest the FDA's verdict on iQOS.

Disruption and opportunity

From our investment perspective we are positively disposed towards the NGPs and the stance that the tobacco companies are taking. They have acknowledged that their customers are seeking alternatives away from cigarettes and are trying to provide them. With the

sizeable degree of investment that the tobacco companies have already allocated towards the NGPs, we believe that they have a significant first mover advantage.

The prospect of converting a highly addictive and harmful product that is subject to stringent regulation and intense public health campaigns into a product that is more similar to alcohol in its impact is transformational for the tobacco industry.

We think it is far too early to predict which company or products will be the winner in these new markets. Indeed, at the CAGNY conference in 2015, Altria (the American parent company of Marlboro) showed that there have been five different leading e-vapour brands in the USA over the last four years. With such rapid market share shifts, there is a danger that companies engage in price competition to battle market share and erode profitability.

“Leading” E-Vapor Brands Over Time

	2011	2012	2013	2014
Brand A	#1			
Brand B		#1		
Brand C			#1	
Brand D			#1	
Brand E				#1

However, we think that the NGPs can take significant market share over the next decade. We also expect that the adoption of NGPs will be higher in more developed countries that have a larger disposable income and greater education over the health risks associated with smoking. However, we think it is important to keep a close eye upon the regulation and taxation for these NGPs as the stance taken by each government and regulatory agency will affect the growth of the market. Similar to the cigarette market, each country will have their own approach, resulting in each company having their own strategy as to how best to position themselves. We think that the heat-not-burn will appeal more to the existing smokers, whereas the new-type experience of vaping could attract existing non-smokers too.

We found a statistic that only 8% of all New Year’s resolutions are ever kept by the end of the year. That is why we wish everyone the best of luck in their attempt to keep their New Year’s resolutions!

The tobacco industry is disrupting itself in plain sight. For smokers who want to try to quit smoking, we think that this year could be the most successful yet. For us as investors, we think that NGPs, and in particular heat-not-burn products, have the potential to transform the tobacco industry for the better, from the perspective of public health, its businesses and its value.

Giles Tulloch and Christopher Rossbach
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