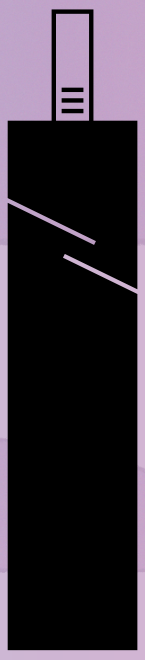
COPENHAGEN INSTITUTE FOR FUTURES STUDIES

The Unseen Future of Nicotine:

Beyond the Vape Cloud



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The story of tobacco has always been complicated.

Because, at first, it was not seen as a problem. It was just part of the scenery, a popular pastime that claimed it aided digestion, signalled a premium lifestyle, or helped imitate your idols.

Tobacco, in all its forms, became so ingrained in our collective culture that even the protagonists of our stories were smokers. *"As I entered, however, my fears were set at rest, for it was the acrid fumes of strong, coarse tobacco, which took me by the throat and set me coughing. Through the haze I had a vague vision of Holmes in his dressing gown coiled up in an armchair with his black clay pipe between his lips."*

–THE HOUND OF THE BASKERVILLES, ARTHUR CONAN DOYLE, 1902

Sherlock Holmes had his pipe; Jay Gatsby had his cigars and James Bond his signature cigarettes. All the style, but what of the repercussions?

While fictional characters never faced the outcome, the real world very much did.

The first potential links between tobacco and severe health issues began to emerge in the 1920s. By the 1950s, Sir Richard Doll's landmark epidemiological studies provided definitive proof of the link between smoking and lung cancer.

However, it took considerable time for these scientific findings to translate into comprehensive public health policy. By the time regulations were finally in force, tobacco use was already accepted in the social and economic reality, and tobacco products were carving new paths to new consumers.

Today, the rise of alternative nicotine products reflects this all-too-familiar dynamic, forcing a renewed look at how science, policy, economics, and innovation interact.

The central challenge is no longer simply tobacco control, but governing a rapidly innovating nicotine ecosystem where promotion, regulation, and public health impacts are moving at drastically different speeds.

In many ways, alternative nicotine products are back in the "pre-1950s" phase of tobacco: widespread global uptake preceding long-term scientific certainty.

But we have one advantage.

We know that what happens in the future will be decided now.

The Shifting Landscape

To understand why policymakers are still playing catch-up, we need to understand how the nicotine market is structured.

In the West, traditional smoking is increasingly concentrated among older, often lower-income individuals, while in the East it remains a broad, culturally embedded behaviour among men. But as cigarettes' dominance wanes across all demographics, new products are rising to fill the gap, creating a nicotine consumer that risks being caught young and hooked for life.

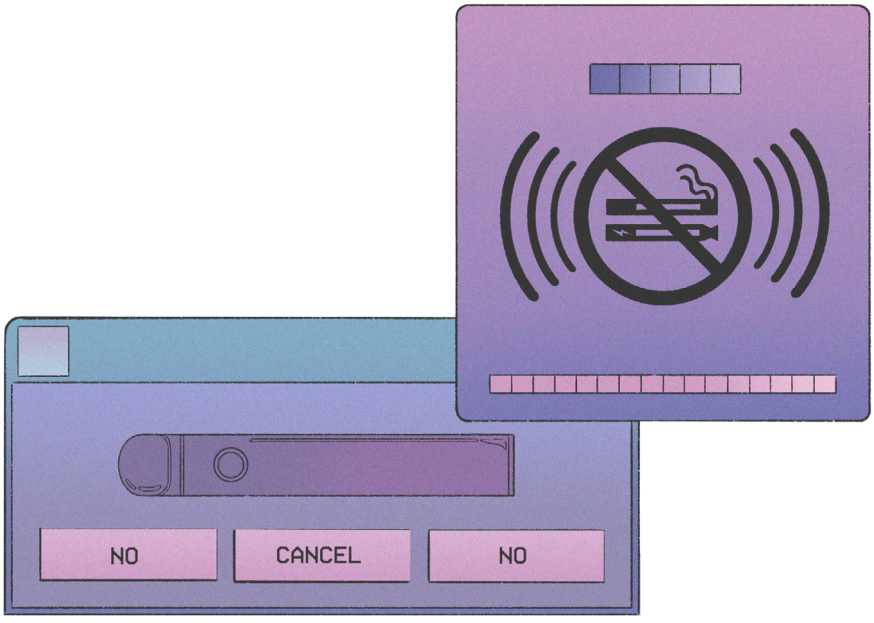
In the UK and the US, young ex-smokers and "dual users" fluidly switch between cigarettes and alternatives, providing an effective gateway into habit building. In developing markets across Africa and Asia, vaping is seen as an affluent, urban lifestyle choice. Perhaps most alarmingly, a new generation of "never-smokers" – youth uninterested in cigarettes but drawn in an endless array of synthetic flavours – is growing.

In the WHO European Region, 11,6% of children aged 13-15 reported using tobacco products and 20% of 15-year-olds report having vaped in the past month. The nicotine market is projected to double to approximately $66.2 billion by 2030.

Yet, regulatory frameworks remain behind, with 74 countries currently having no vaping regulations in place, while 88 lack a minimum purchasing age, according to the World Health Organization.

74

Countries currently having no vaping regulations in place



88

Countries lack a minimum purchasing age, according to the World Health Organization

And that landscape goes beyond vapes.

Heated tobacco products (HTPs) are seeing a rapidly growing user base, despite the aerosol containing toxic substances, such as acrolein, known to cause blood vessel damage and lung inflammation.

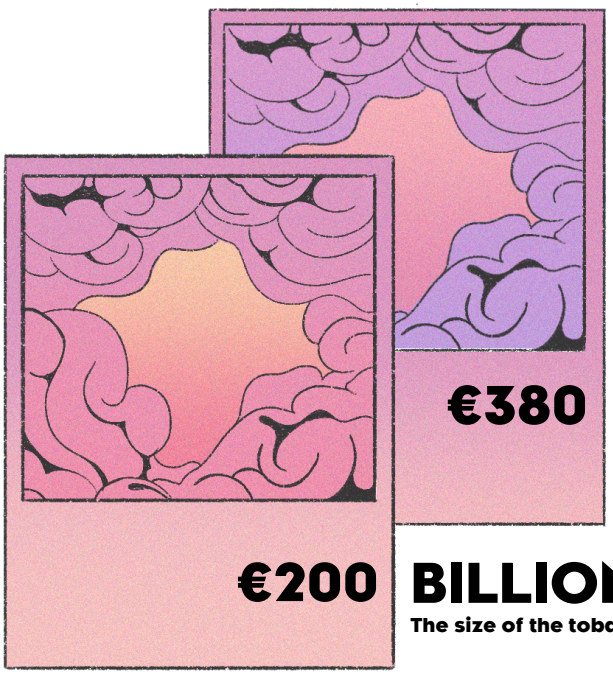
Faced with this unprecedented diversification of the tobacco and nicotine market, policy design has become vastly more complex. This challenge is exacerbated by regulators' inability to keep pace with the development and marketing of ever more tobacco and nicotine products that drive addiction in a legal grey area.

You see, the battle is no longer only against smoking, but against new forms of nicotine addiction in its rapidly mutating forms – but we have seen these drivers before.

What's the Health Outcome?

Each year, tobacco kills over 1.1 million people in the WHO European Region alone. That is just a fact.

The care of patients with chronic respiratory diseases in the European Union costs a staggering €380 billion annually, reflecting a diverse array of pulmonary conditions, with tobacco smoking as its chief driver. By contrast, the size of the tobacco market in Europe stands at around €200 billion.



€380 BILLION

Annual cost of the care of patients with chronic respiratory diseases in the European Union

€200 BILLION

The size of the tobacco market in Europe

Smoking causes more than a quarter of all chronic respiratory diseases worldwide, costing people millions of healthy years. It is the top preventable cause of as Chronic Obstructive Pulmonary Disease (COPD), lung cancer, and tuberculosis, killing over 8.7 million deaths globally each year.

While the science on traditional cigarettes is settled, alternative nicotine products lack the same decades of conclusive data. This forces an attempt to regulate for an unseen future, often perceived as prophecy, despite short-term findings make it feel like fact.

This dynamic creates a dangerous "scientific lag" that runs parallel to our "regulatory lag," where the decades-long epidemiological data required for absolute certainty simply does not yet exist. The thing is, we have never needed absolute certainty to act.

History and science have shown the harm of nicotine itself, particularly its cardiovascular and pulmonary impacts, as well as increasing the risk of developing type 2 diabetes, and worsening the condition if you have it. But beyond the drug, new delivery mechanisms and alternatives have presented a new challenge without the benefit of a 40-year retrospective.

What we do know, however, is already troubling.

Researchers are observing cellular inflammation caused by inhaled flavouring agents, tracking exposure to contaminants like heavy metals from heating coils, and noting the risks associated with chemicals like diacetyl, linked to bronchiolitis obliterans, or "popcorn lung."

More concretely, a longitudinal study published by Oxford University found that vaping more than doubles the risk of developing COPD, even without prior smoking, while dual use of traditional and e-cigarettes exponentially increases cancer, cardiovascular and pulmonary risks.

These unseen risks compound what epidemiologists call the *impact lag*, referring to the long-term impact of preventative measures we implement today, but also the long-term risk if we do not. This is a critical concern, given how heavily alternative tobacco and nicotine product use skews towards young people.

For combustible tobacco and chronic respiratory diseases, we know that lag is roughly 20 years, but can be shorter if you add cannabis. For vaping, however, the timeline remains unknown.

History has shown us that delay carries a catastrophic human toll, with a 2021 study forecasting that acting decisively to halve global smoking prevalence by 2030 could avoid the loss of 150 million life-years by 2050.

Delaying that action until 2030, however, would erase half of those potential gains, while also allowing alternative products to grow unchecked, potentially reversing decades of hard-won progress in tobacco control.

Health systems are caught in a vice, firefighting against the massive burden

of diseases caused by smoking while simultaneously bracing for an undefined wave of new respiratory conditions from vaping. This uncertainty translates directly into a systemic cost, crippling the long-term planning, resource allocation, and prevention strategies that health services should already be implementing.

A Study of an Overloaded System

To see the real-world consequences of these colliding lags and systemic challenges, we can look at South Africa.

The South African healthcare system is profoundly strained by its current respiratory burden. Ranking low on the Severe Asthma Index, the country is grappling with an incredibly high prevalence of COPD, exacerbated by the colliding, historical epidemics of HIV, tuberculosis, and traditional smoking – despite having incredibly strong tobacco regulations.

Into this vulnerable system, a largely unregulated market has allowed the unchecked spread of alternative nicotine products. A major study published in *The Lancet's eClinicalMedicine* led by researchers at the University of Cape Town surveyed more than 25,000 high school students and found that in some South African schools, up to 46% of final-year students (Grade 12) are currently vaping. Among first-year high school students (Grade 8), the figure is approximately 30%, and the habit is now creeping into junior schools, capturing children as young as nine or ten years old.

Here, once again, we see how the regulatory and scientific lags can converge to paralyse prevention efforts. Faced with an impossible standard of evidence the long-term health consequences of these new products, public health advocates struggle to argue for caution. Instead, they are forced to fight aggressive, well-funded marketing campaigns without the ammunition of concrete, multi-decade science.

As a result, an unregulated environment has allowed industry to successfully capture two separate markets simultaneously: traditional combustible smokers and a new, affluent, and heavily youth-skewed demographic of vapers across both genders.

South Africa is not alone in this problem, but it is ahead of the curve, and should serve as a stark, real-world warning to Europe of the costs of inaction. It demonstrates what happens when market expansion and public health consequences are permitted to outpace regulation.

So, how do we fix it?

Can Europe Get Ahead of the Game?

Europe currently faces a critical opportunity to look inward and stop playing catch-up.

Despite its strong tobacco control legacy, the European Union is no longer setting the global pace. While countries around the world are introducing innovative measures to address emerging nicotine products, Europe continues

to struggle with some of the highest tobacco use rates globally and significant policy disparities between Member States. This fragmentation has made it difficult to develop a unified, future-oriented strategy that can do more than reacting to industry innovation.

But a vital inflexion point is approaching. The upcoming reviews of the EU's Tobacco Taxation Directive, alongside the Tobacco Products and Tobacco Advertising Directives, with proposals expected in late 2026, provide a rare chance to design a proactive, "future-proof" policy.

To succeed, public health regulation must be able to anticipate future risks rather than merely chase current ones. This means regulating based on core principles rather than specific products, enacting comprehensive bans on all youth-appealing flavours, rather than playing a game of legislative whack-a-mole with individual tastes like "tobacco," "mint" or "candy ".

A public health-first approach would require proven safety *before* widespread sale, allowing regulators to repeal restrictions only as evidence permits. While this might be viewed as a radical or "anti-innovation" stance, it is an essential safeguard for the future of public health. Policymakers have ample evidence and recommendations from public health experts and health professionals. What is needed now is action.

To be clear, this is no longer simply a debate about smoking or vaping.

And as explored in the strategic foresight analysis, *Beyond Smoke and Mirrors*, it is a broader question of how societies govern uncertainty in public health before the consequences become irreversible.

Because, when it is all said and done, the final question is simple:

Can Europe learn from its 70 years chasing tobacco to get ahead of the curve on nicotine? Or is it destined to repeat the cycle, leaving its health systems to handle a situation we all saw coming?

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