

Evaluating tobacco industry 'transformation': a proposed rubric and analysis

Richard Edwards ,¹ Janet Hoek ,¹ Nancy Karreman,² Anna Gilmore³

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¹Department of Public Health, University of Otago, Wellington, New Zealand

²MRC Epidemiology Unit, Cambridge University School of Clinical Medicine, Cambridge, UK

³Tobacco Control Research Group, University of Bath, Bath, UK

Correspondence to

Prof Richard Edwards, Department of Public Health, University of Otago, Newtown, Wellington, 6021, New Zealand; richard.edwards@otago.ac.nz

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ABSTRACT

Some tobacco companies claim they are 'transforming' by adopting harm reduction goals or even seeking to achieve a 'smokefree' world. What characterises transformation and whether companies can or are transforming is unclear. Nevertheless, such claims are gaining traction. We critically investigated tobacco industry transformation by exploring the definition and criteria for evaluating transformation, and assessed whether transformation is occurring and feasible. Companies' transformation claims centre on increasing sales of new tobacco and nicotine products like e-cigarettes ('new products') with little attention to reducing sales of more hazardous smoked and oral products ('conventional products').

We define a transforming tobacco company as one demonstrating substantial, rapid and verifiable progress towards eliminating the production and sale of conventional tobacco products within 5 years in all markets where it operates.

We found no evidence any tobacco company is meeting the three essential criteria of rapidly progressing towards eliminating conventional products, ceasing to obstruct effective tobacco control measures and taking action to minimise smoking uptake and disparities. While some companies are developing new product portfolios, their actions are more consistent with profit maximisation than eliminating conventional product use. This approach is best described as 'pseudo-transformation', designed to delay implementation of effective tobacco control policies. In addition, our analysis suggests replacing conventional products with new nicotine products is unlikely to be a viable long-term business model. Public health practitioners should not rely on tobacco industry claims but should lead the transformation debate, establish credible definitions and criteria, and monitor and assess whether transformation is occurring.

INTRODUCTION

Because its core product causes millions of avoidable premature deaths¹ and it has consistently promoted its interests above population health, the tobacco industry is widely regarded as a pariah industry. However, recent claims by some companies that they are 'transforming' (box 1) raise important questions about what transforming should entail and how to evaluate industry claims.²⁻⁸

Although the public health community regards tobacco companies' interests as antithetical to public health and sees industry interference as a key barrier to effective tobacco control policies,⁹ the transformation narrative is gaining traction. Recent analyses concluded that some industry strategies 'start to look convincingly reasonable',¹⁰ noted that

the emergence of lower risk nicotine products is 'a new opportunity to dramatically transform the cigarette business in ways that were never imagined'¹¹ and called on the WHO to support tobacco companies' transition to low-risk products.¹²

Great care must be taken to assess industry narratives and language such as 'transformation'. Corporations are adept at using deceptive framing and rhetoric to shape norms and beliefs, influence political and policy agendas and position themselves as part of the solution rather than being the problem.¹³⁻¹⁶ The leading proponent of transformation, Philip Morris International (PMI), funds the Foundation for a Smoke-Free World (FSFW) which recently embellished the transformation narrative by launching the 'Tobacco Transformation Index' (TTI). This 'index' purports to measure the degree to which leading tobacco companies are transforming.^{17 18}

We critically investigated tobacco industry transformation by exploring the definition and criteria for evaluating transformation, assessing whether transformation is occurring and evaluating its feasibility.

METHODS

After identifying and critiquing transformation characteristics inferred from industry statements and the TTI,^{17 19 20} we developed a definition and identified three essential and one secondary criteria that a truly transforming company must meet. Using documentary evidence, including the TTI¹⁷ and an analysis of Euromonitor data on tobacco sales,²¹ we assessed whether tobacco companies' actions meet these criteria, focusing particularly on PMI because of its wide-ranging transformation claims. We note the need for caution regarding the TTI, which has been criticised for its lack of independence and flawed methodology.^{17 18 22 23}

RESULTS

Existing definitions and characteristics of transformation

Analysis of industry documentation (box 1) indicates tobacco companies view transformation largely as increasing production of 'smoke-free', 'reduced risk', 'non-combustible' or 'next generation' products (henceforth 'new products').^{2 5 7} Some companies have made non-specific statements about working towards a 'smoke-free' or 'non-combustible' future, contributing to harm reduction and reducing the harms their products cause, but none have committed to rapidly end the sales of smoked and oral tobacco products (henceforth 'conventional products').



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Box 1 Tobacco industry claims of transformation.

Philip Morris International (PMI) announced their intent to transform in 2016 and have since variously claimed to be building a 'smokefree future', 'unsmoking' the world and helping smokers to 'unsmoke'.^{8 26 148}

British American Tobacco (BAT) states its purpose is 'To build A Better Tomorrow by reducing the health impact of our business'⁵ and that people who smoke and cannot quit should be encouraged to switch to 'reduced risk alternatives'.³ They recently claimed that their transformation is 'accelerating'.⁴ **Imperial Brands** claims it is developing a sustainable 'Next Generation Product' business and making a 'meaningful contribution to harm reduction' as part of its 'environmental, social and governance' responsibilities.⁷

Altria claims it will 'transform Altria and our industry' and its 10-year vision is to 'Responsibly lead the transition of adult smokers to a non-combustible future'.²

The TTI defines transformation as 'transformation of the global tobacco industry for the benefit of public health'¹⁸ and the TTI report describes the index as a tool to quantify progress towards a 'world free of combustible cigarettes and other high-risk tobacco products'.¹⁷ However, the TTI's approach aligns with the tobacco industry's focus on transformation through increasing production of new products. For example, only one of the four activities the TTI assesses concerns phasing out conventional products; the others measure the development and marketing of new products. The TTI's product sales metrics apply a weighting of 90% for measures of the conventional:new products sales ratios and only 10% for measures of decline in conventional product sales.²⁰ The TTI did not adopt stakeholders' suggestions to assess whether tobacco companies are impeding tobacco control measures.¹⁹

The self-interest evident in the industry's narrative suggests the public health community should develop its own definition, criteria and metrics for measuring transformation.

Definition of a transforming tobacco company

To transform means to markedly change in form, nature or appearance. Given the highly addictive and deadly nature of tobacco products,²⁴ industry transformation must have at its core the rapid elimination of the production and sale of its conventional products. We propose that a transforming tobacco company must demonstrate substantial, rapid and verifiable progress towards eliminating the production and sale of conventional tobacco products within 5 years, and must do so in all markets in which it operates. This timeline recognises the urgency of ending the smoking epidemic and the need to allow companies time to transition.

In our review of evidence for transformation we have emphasised data on smoked tobacco product sales as these cause the greatest harms to population health. However, oral tobacco products should also be indicators where these contribute substantially to tobacco product use prevalence and tobacco-related morbidity and mortality (eg, India, Myanmar and Sudan).

Characteristics of a transforming tobacco company and review of evidence companies are transforming

We propose four criteria to assess transformation. The first three are essential while the fourth is secondary. Meeting the fourth criterion does not provide evidence a company is transforming

unless the first three criteria are also met. We describe each criterion and its rationale, and briefly assess progress towards meeting it. Further details of proposed metrics and evidence for transformation are presented in the online supplemental table.

Criterion 1: evidence of substantial progress towards eliminating the production, distribution, marketing and sales of conventional tobacco products within 5 years

A transforming company should demonstrate progress in eliminating conventional tobacco products in all markets where it operates, especially countries where sales are growing (eg, lower and middle-income countries (LMICs)). This requirement prevents companies from falsely claiming they are transforming based on actions in high-income countries (HICs), where sales are already declining (as a result of successful tobacco control measures), while maximising conventional product sales in LMICs, where growth remains possible.²⁵

A transforming company should set a target for eliminating the production and sales of conventional products within 5 years, supported by an implementation plan. The plan should include difficult to reverse measures, such as closing production and distribution facilities, cancelling distribution contracts, relinquishing trademarks, withdrawing brands from sale and eliminating design features that contribute to the appeal, palatability and addictiveness of conventional tobacco products. The plan should also set out a reporting framework and should be subject to evaluation by independently appointed external monitors who have full access to internal information such as production, sales and marketing data; or product design and constituents.

Evidence for transformation?

There is no evidence that any company is meeting this criterion. Even the FSFW-funded TTI found that during 2017–2019 when the transformation narrative became established smoked tobacco sales among 15 leading companies declined by only 1.2% per annum globally.¹⁷ Our analysis of Euromonitor data indicates that PMI's smoked tobacco sales declined at a similar rate before (2012–2017) and after (2017–2019) adoption of their 'smoke-free vision'.²¹

No tobacco company has committed to ending the production and sale of conventional tobacco products in all its markets within 5 years, or indeed within any time period. The TTI report provides no evidence of any company having a plan to eliminate conventional tobacco product sales; we have not found this evidence elsewhere. PMI has announced a goal to reduce combustible tobacco product sales, but its goal has no timeline and proposes only 'aspirational' annual reductions in shipments for 2019–2025.^{26 27} Our analysis of Euromonitor data shows PMI's projected reductions are less than those observed from 2012 to 2019.²¹ If this aspirational rate of reduction was maintained, zero shipments would not occur until 2043, one year later than if the 2012–2019 rate of decline continued (see online supplemental table).²⁶

While PMI has claimed it intends to stop selling combustible tobacco products in the UK, its undertaking has several caveats. First, it promises to cease sales in 10, not 5, years; second, the claim applies to a single HIC where smoking prevalence has declined rapidly; third, PMI has less than 10% market share in the UK, meaning it has little to lose by stopping sales there.^{28 29} Meanwhile, in LMICs PMI has continued to launch new conventional tobacco product lines with supporting marketing.^{6 30 31}

Industry-wide transformation should result in rapidly declining global sales of tobacco products, paralleled by

accelerating decreases in consumption and smoking prevalence. There is no evidence that these changes are occurring. Global cigarette sales of cigarettes peaked in 2012 and have declined slowly since. The rate of decline has not accelerated and may even have slowed since 2017 (see online supplemental table).^{17 21} Similarly, smoking prevalence in recent years declined slowly in most countries,²¹ with HICs showing greater decreases than LMICs.^{6 32} Estimates of global smoking prevalence trends find that the decline in prevalence slowed after 2015³³ and forward projections suggest a gradual decline will continue to 2025.^{1 32}

Criterion 2: no obstruction of core and innovative tobacco control measures in any jurisdiction

Evidence-based population-based policy measures, such as those recommended in the Framework Convention for Tobacco Control (FCTC) (see [table 1](#)), are key drivers of declining global smoking prevalence.^{34–38} Implementing core FCTC (MPOWER: Monitor tobacco use and prevention policies; Protect people from tobacco smoke; Offer help to quit tobacco use; Warn about the dangers of tobacco; Enforce bans on tobacco advertising, promotion and sponsorship; Raise taxes on tobacco) measures to the highest level is essential to accelerate reductions in smoking

Table 1 Examples of tobacco control measures that a transforming or transformed company should not obstruct

Intervention domain	Tobacco control interventions transforming companies should not oppose or obstruct	Supporting actions that transforming companies might take
Tax and price interventions	Measures to reduce the affordability of tobacco products, including: <ul style="list-style-type: none"> ▶ Tobacco tax increases. ▶ Minimum excise tax stipulations. ▶ Hypothecation of tax revenues. 	Actions to prevent undermining of tax/price measures, including: <ul style="list-style-type: none"> ▶ Minimal price spread across brand portfolio. ▶ No use of differential price rises, price smoothing, cushioning or proliferation of 'budget' brands. ▶ No use of price-related marketing strategies like discounting. ▶ Removal of tobacco products from duty-free sales outlets.
Marketing (includes advertising, packaging, sponsorship, social media, product placement, etc)	Policy measures to eliminate marketing of tobacco products, including: <ul style="list-style-type: none"> ▶ Standardised packaging. ▶ Bans on advertising and sponsorship in all media, including use of third-party endorsers. ▶ Bans on retail point-of-sale product displays and marketing. ▶ Standardised or dissuasive sticks. 	Actions to reduce company marketing of tobacco products and support enforcement of marketing restrictions, including: <ul style="list-style-type: none"> ▶ Elimination of all tobacco product marketing and marketing-related expenditure at local/national/cross-national level. ▶ Cease use of influencers and other social media marketing. ▶ Full compliance with independent regulators charged with monitoring and enforcing compliance with marketing restrictions. ▶ Verifiable steps to identify, report and eliminate any efforts by the company and its staff to subvert marketing restrictions.
Product supply and availability	Measures to restrict the supply and availability of tobacco products, including: <ul style="list-style-type: none"> ▶ Restricting store types where tobacco can be sold. ▶ Tobacco retailer licensing, and proximity or density controls on tobacco retailers. ▶ Increases in age-related sales restrictions (eg, Tobacco 21 laws). ▶ Progressive increases in age-related sales restrictions (tobacco-free generation). ▶ A gradual phasing out of the sale of conventional tobacco products. Implementation of the Illicit Trade Protocol and government interventions to control the illicit tobacco trade.	Actions to reduce and then eliminate the production and sale of conventional tobacco products, including: <ul style="list-style-type: none"> ▶ Close production facilities and distribution and sales networks. ▶ Cease online sales. ▶ Cease supplying the illicit market and take steps to prevent 'leakage' from supply chains to the illicit market (currently large volumes of illicit tobacco include products from PMI and other major tobacco companies).¹⁴⁹
Tobacco product portfolio and product design	Measures to reduce the addictiveness, palatability and appeal of tobacco products, including: <ul style="list-style-type: none"> ▶ Bans on design features and innovations that increase product appeal and palatability, for example, filters and filter ventilation, 'slim' and capsule cigarettes, characterising flavours such as menthol and sweeteners. ▶ Mandated reductions of nicotine to zero or non-addictive levels. 	Actions to support and prevent undermining of these measures, including: <ul style="list-style-type: none"> ▶ No development of product design innovations. ▶ No launches of new conventional tobacco products or brands/brand variants. ▶ No investment in R&D and product development, other than to support elimination. ▶ Progressive elimination of tobacco products with design features designed to increase appeal and palatability.
Other policy measures	Other measures to support reducing smoking prevalence, including: <ul style="list-style-type: none"> ▶ Large pictorial warning labels. ▶ Enhanced cessation support services. ▶ Smoke-free mass media and social media interventions. ▶ Extensions to smoke-free policies such as smoke-free outdoor dining and bar areas, cars and playgrounds. 	

PMI, Philip Morris International; R&D, research and development.

consumption and prevalence. However, implementation is inadequate in most countries.^{34 39 40}

Adoption of more innovative ‘endgame’ policies could profoundly accelerate declines in smoking prevalence.^{41–43} These measures include mandated reductions in nicotine content,^{44 45} progressive increases in the legal age of purchase⁴⁶ and substantially reducing the availability of tobacco products.^{47 48} However, despite some policy proposals,^{47 49 50} only small subnational jurisdictions have so far adopted any of these measures.⁵¹

A truly transforming company would welcome and never obstruct implementation of policies that support their stated goal to eliminate sales of conventional products in any jurisdiction. This would be particularly true where potential health gains are greatest, such as in countries where a transforming company has the greatest market share, or in LMICs where tobacco product sales are often growing and tobacco control policies are weak.^{34 52} Policy measures should appeal to transforming companies as policies impact all companies equally and would not commercially disadvantage transforming relative to non-transforming companies. A transforming company would also fully respect FCTC Article 5.3, which requires governments to protect policy-making processes from industry influence.⁵³ It would reject underhand tactics such as using front groups and third parties to lobby policy makers, and it would disclose all encounters with government agencies and politicians.^{54 55} A visionary and sagacious company might also support legal changes, including amendments to corporate law removing limited liability or fiduciary responsibilities such as profit maximisation, to prioritise social, environmental and health goals.⁵⁶

Evidence for transformation?

Tobacco companies’ behaviour contrasts sharply with genuine transformation.^{34 39 55} For example, PMI’s 2014 10-year Corporate Affairs Objectives and Strategies document describes numerous policies it opposes, including many listed in [table 1](#).^{57 58} Nor is this opposition merely historical. Companies continue to impede and oppose evidence-based tobacco control policies in multiple countries (see online supplemental table).^{59–76} PMI’s recent actions suggest it has maintained the stance outlined in 2014 well beyond announcing its smoke-free vision in 2016.^{6 60}

The New Zealand government recently released a draft action plan for its Smokefree 2025 goal that proposes a comprehensive range of tobacco control policy interventions.⁷⁷ Leading tobacco control researchers welcomed the plan as a potential exemplar for ending the smoking epidemic.⁷⁸ Logically, transforming tobacco companies would welcome these innovative ideas and pledge support. Yet, submissions from Imperial Tobacco, British American Tobacco (BAT) and Japan Tobacco International to the consultation opposed all the major policy proposals, including world-leading endgame policies such as denicotinisation of cigarettes and greatly reducing retailer numbers. BAT was caught out encouraging retailers to oppose the plan,^{79 80} and PMI missed the opportunity to express support and did not make a submission.

Criterion 3: evidence of action to reduce uptake and eliminate disparities in use of conventional tobacco products

Smoking, and the harms that follow,^{81 82} are increasingly concentrated in marginalised groups, including people with low incomes and socioeconomic status.^{83–85} Indigenous peoples,^{85 86} people living with mental illness^{85 87–89} and LGBTIQ+ groups.⁸⁵ These inequities reflect historic targeting by the tobacco industry,^{90–98} which has maintained the smoking epidemic by recruiting new cohorts of addicted users among youth and young people.

Transforming companies would seek to promote equity and reduce smoking among marginalised groups, and would work to minimise smoking uptake among young people to promote intergenerational equity.⁹⁹ They would set robust targets to minimise, and then rapidly eliminate, the use of their products by these groups.

A transforming company would not oppose policies that could reduce smoking among minority or marginalised communities: for example, menthol bans to reduce smoking among African-Americans in the USA.¹⁰⁰ Nor would they continue to oppose, as they have in the past, measures aiming to reduce smoking uptake such as Tobacco 21 laws,^{101–103} marketing restrictions and bans on product innovations that appeal to young people.

Transforming companies would also help minimise smoking uptake and smoking-related disparities directly through their own actions: for example, by fully complying with existing policies and regulations, withdrawing conventional products that have high brand share among young people and marginalised groups, ceasing to target marketing to marginalised groups and avoiding price strategies that foster disparities.^{62 104}

Evidence for transformation?

Although tobacco companies have supported youth access restrictions, minimum (<18 years) age of sale laws and school-based education programmes,⁵⁷ these measures relocate responsibility to other actors, including retailers and young people themselves. The industry has consistently opposed policy measures that would constrain their activities to foster youth uptake.^{54 55 57 58 73 104 105} Tobacco companies continue to obstruct policies that aim to reduce smoking uptake and smoking-related disparities.^{60 63 65 70 106–109} They also continue to market conventional products to young people^{110–113} and marginalised populations,^{62 63 69 90 92 94 104 111–114} and produce products that appeal preferentially to these groups (see online supplemental table).^{59 61 66 68–70 115}

No tobacco company has proactively withdrawn conventional tobacco product brands popular among young people or marginalised communities nor has any company set targets to reduce or eliminate use of its products among these groups.

Criterion 4: replacement of conventional tobacco products with acceptable alternative products or services

This is a secondary criterion; evidence of transitioning into alternative products or services can only be compatible with transformation if the first three criteria are met. This criterion requires further debate, as definitions of acceptable alternative products or services may vary and will change as products and markets evolve, and evidence accumulates.

The preferred option would be for a transforming company to transition into completely different (non-nicotine) harmless and non-addictive consumer products or services. There is little evidence of tobacco companies taking this route, although PMI’s recent acquisition of three pharmaceutical companies could arguably indicate initiation of such a strategy, if only PMI had fully met the first three criteria.¹¹⁶ Until it does so, such acquisitions can be used to falsely signal transformation and also create a perverse ‘monopoly of harm’ in which PMI can maximise its profits by first causing and then treating lung disease.

Instead, companies that claim to be transforming are developing portfolios of new products such as e-cigarettes, heated tobacco products (HTPs) and nicotine pouches. There is an active and evolving debate about the place of new products in tobacco control, and views differ about whether these products

offer an acceptable alternative to conventional tobacco products. Positions depend on perceptions of their harmfulness, impact on smoking uptake and quitting, and net benefit (or harm) to population health.

Some tobacco control experts may argue that replacing conventional products with another addictive, although less harmful, product is inconsistent with transformation. For example, in New Zealand many Māori (Indigenous peoples) who led the Tupeka Kore (tobacco free) vision saw eliminating addiction as important as eliminating smoking.¹¹⁷ This reasoning views new nicotine and tobacco products as transitional, to be eliminated once conventional product use ceases.¹¹⁸

Others view companies transitioning to these new products as consistent with transformation provided the new products are substantially less harmful and help greatly reduce conventional product use, and hence improve population health.¹¹⁹ Views about appropriate regulatory structures vary; some regard such products as acceptable only if approved as medical (cessation) products regulated via medical agencies. Others believe new products should be made widely available as consumer products with minimal regulation, and support actively encouraging people who smoke to switch.

If replacing conventional with new products is, in principle, deemed compatible with transformation, a transforming company should still give appropriate priority to their stated aim (see [box 1](#)) of enhancing population health rather than focus on maximising sales and profits of the new products.

For example, the transforming company's new nicotine and tobacco products should be independently established as substantially reduced risk products. These products should effectively support full cessation of all nicotine products or switching away from conventional products to sole use of the new products. Their design, marketing and distribution should target only existing conventional product users and lead to minimal use (and hence potential addiction and harm) among non-smokers, particularly adolescents and young people. A transforming company would minimise its new products' appeal to minors and non-smokers. It would not obstruct and would comply fully with measures to minimise youth use, such as marketing and availability restrictions, and welcome external monitoring of product use by these groups. The company would respond to evidence of uptake among youth or non-smokers by ceasing to market and withdrawing products of concern.

Furthermore, a transforming company's new product portfolio would comprise those products least likely (based on emissions, biomarkers and epidemiological data) to cause harm. This criterion implies greater reliance on vaping products rather than HTPs, which likely cause greater harm.^{120 121}

Evidence for transformation?

We are not aware of evidence on tobacco industry diversification into non-nicotine-based products or services, other than some investments in the pharmaceutical sector.^{116 122} The TTI does not consider this aspect of transformation, but reported that six of the 15 companies analysed had diversified into new nicotine and tobacco products. However, it concluded that harm reduction progress had been '*extremely limited*'; smoked tobacco products dominate product portfolios and made up 97% of sales volumes across 15 participating tobacco companies in 2019.¹⁷

Transformation requires a product replacement strategy, not a diversification approach. However, tobacco companies appear to be using new products to augment, rather than replace, conventional product revenue streams. For example, BAT analyst briefings

present their new products as additional to, not replacements for, conventional products, and analysis of the global (excluding China) retail value of conventional and new products suggests that overall value is increasing even as the retail value of conventional products declines.^{6 123} High prevalence of new product use among youth in many jurisdictions,¹²⁴⁻¹²⁷ and evidence that tobacco companies market new products to youth¹²⁸⁻¹³² and oppose measures to reduce youth access and appeal,¹³³ contradict claims by companies that they do not encourage use among young people.

Furthermore, independent investigations, and even the TTI report, reveal that tobacco companies have mostly marketed their new products in HICs, where purchasing power is greater and conventional products are in decline. They have typically not introduced these products in LMICs, where conventional product sales are often growing.^{6 17 134}

PMI's product portfolio is dominated by HTPs (notably IQOS), and other companies also market these products. This is problematic, given the lack of independent research on HTPs¹³⁵⁻¹³⁷ and lack of cessation efficacy data.^{120 121 138} The available evidence suggests HTPs are likely to be more harmful than other new products,^{120 121 139} and often result in dual use alongside continued smoking.¹⁴⁰⁻¹⁴⁴ Marketing strategies present HTPs as premium products that offer higher profit margins than cigarettes.^{6 134} These attributes are more consistent with profit maximisation than with eliminating use of conventional products.

Can the tobacco industry transform?

An additional question is whether the tobacco industry could ever voluntarily transform. Our analysis suggests they cannot genuinely transform and survive in the long term by transitioning to new products and marketing these products only to existing smokers (as they claim to do and criterion 4 requires).

This is because this strategy is not a plausible long-term business model. First, where countries prohibit new products to be sold as consumer products, this transformation route is closed. Second, even where new products are allowed as consumer products, the market will be greatly constrained and eventually decline; as only some smokers will become long-term users of new products and, over time, the number of smokers will decrease through quitting or death, and some new product users will quit. Furthermore, this marketplace will be crowded as transforming tobacco companies compete with each other and with independent manufacturers. Hence, even if new products offered greater profit margins than conventional products, transforming companies relying on these products long term are likely to face extinction or be forced to abandon transformation to address investor resistance and legal requirements to maximise shareholder returns.⁵⁶

Diversifying into non-nicotine products and services, either immediately or following an initial transitional stage in which new nicotine products replace conventional tobacco products, may be the only realistic transformation strategy. This approach would require companies to develop a new business model and eventually effectively cease being tobacco companies. No company has yet adopted this strategy.

A concerning but very plausible alternative scenario is that 'transforming' tobacco companies engage in 'pseudo-transformation'. These companies would take minimal action to reduce production and sales of conventional products and, aided by enhanced legitimacy and influence gained through claimed 'transformation', would continue to impede effective tobacco control policy implementation by arguing that harm reduction renders such policies unnecessary. Meanwhile, they could grow markets for new nicotine products (particularly among youth and young adults) and establish

a substantial population of addicted long-term users. An industry analyst recently predicted a similar scenario, in which conventional product use would remain common in LMICs but decline rapidly in HICs, where the industry would generate a replacement market of new product users.¹⁴⁵

The activities of some companies suggest they have adopted this strategy. For example, while PMI proclaims its transformation, its actions and the slow decline in its cigarette sales since adopting its smoke-free vision suggest otherwise. PMI's company reports make clear it has no intention of abandoning smoked tobacco products or leaving that market to competitors: *'For as long as significant legitimate demand for combustible tobacco exists, PMI will continue to sell such products responsibly and seek to maintain our leadership position internationally.'*²⁶ PMI continues to oppose tobacco control policies; it has launched new cigarette brands, and sells cigarettes with appealing design features like filters, flavours and flavour capsules (see online supplemental table). Its new product portfolio is dominated by relatively higher risk HTPs that it typically markets as a premium product in HICs.^{6 134 140–142 146}

DISCUSSION

We have developed the first independent definition of tobacco industry transformation, and proposed criteria for evaluating its occurrence. We found no evidence of meaningful transformation judged against the three essential criteria and our analysis suggests replacing conventional products by marketing new products solely to existing smokers is not a viable business model. Even companies with growing new product portfolios show minimal progress in reducing sales of conventional products and continue to oppose tobacco control policies. These companies' new product development and marketing is more consistent with profit maximisation than with eliminating conventional product use, and suggest use of a 'pseudo-transformation' strategy.

Our bleak prognosis for industry-led transformation raises the question of where responsibility for elimination of conventional tobacco products should fall: on tobacco companies, on governments or on both? We believe the primary responsibility lies with the tobacco industry to cease producing and marketing a highly addictive and deadly product, and to end their sustained opposition to effective policy measures. However, governments must also demonstrate leadership by implementing comprehensive strategies to eliminate conventional products and appropriately regulate new products to maximise their potential to improve population health while minimising harms (such as uptake by non-smokers). Governments should rigorously enforce FCTC Article 5.3 to protect policy making from industry interference. Limited implementation of core FCTC measures, even in many HICs, and glacial progress in enacting bold endgame measures, indicate much more robust government action is needed. This will require greater political will and recognition of the disparities that urgently need addressing.

Our definition and criteria will benefit from wider debate, which we hope this paper will stimulate. For example, some may think that the timescale for conventional product elimination needs to be longer than 5 years. The public health community must lead this debate, and shape the conceptualisation and the language of transformation. The tobacco industry and its affiliated organisations, such as the FSFW, must not be permitted to set the agenda and control the discourse. We encourage additional work to assess the validity and acceptability and further refine our definition and criteria. Future work could also develop specific metrics to enable monitoring and evaluation of tobacco industry transformation.

In conclusion, tobacco companies' transformation rhetoric is highly questionable. Their record of consumer deception, failure to accelerate reductions in sales of conventional products and continued policy obstruction, suggests they are pursuing a pseudotransformation strategy. The reputational benefits of appearing to transform could increase the industry's legitimacy (or as the PMI strategy puts it, *'establish PMI as a trusted and indispensable partner'*)⁵⁸ and enable tobacco companies to influence (ie, obstruct) and deflect attention from effective population-based tobacco control measures and slow the global decline in conventional tobacco product sales.

Transformation recalls the 1954 Frank Statement, which tobacco companies used to maintain credibility and delay policy responses to evidence that smoking caused lung cancer.¹⁴⁷ Major US tobacco companies denied that smoking was injurious to health and pledged to cooperate closely with public health authorities and fund research that would clarify smoking's health effects. Few would regard those promises as fulfilled.

What this paper adds

⇒ Some tobacco companies claim that they are 'transforming' by adopting public health goals and transitioning to selling new less harmful nicotine and tobacco products rather than conventional smoked and oral tobacco products. This paper critically examines the industry's claims of transformation by defining transformation, exploring the characteristics of transforming tobacco companies and assessing evidence that transformation is occurring and whether it is feasible.

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ORCID iDs

Richard Edwards <http://orcid.org/0000-0003-2264-9823>

Janet Hoek <http://orcid.org/0000-0003-4362-1539>

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