



nicotine  
paradigm

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## DISCUSSION & REVIEW QUESTIONS:

- Towards the beginning of the video, Ms. Kitchens claims that, “E-cigarettes are the most innovative and promising smoking-cessation product yet invented. So, public health officials and anti-tobacco activists are all in favor of this life-saving innovation, right? Actually, they’re almost all totally against it.” What do you think might be considered so innovative about e-cigarettes? Why do you think that health officials and anti-tobacco activists oppose e-cigarettes so vehemently?
- Ms. Kitchens answers this last question with, “Because, incredibly, they make no substantial distinction between e-cigarettes and real cigarettes – even though they are completely different products.” Why do you think that this is the case? What do you think the arguments might be from health officials and anti-tobacco activists for conflating e-cigarettes with tobacco cigarettes?
- Later in the video, Ms. Kitchens explains that, “...e-cigarettes aren’t cigarettes. They contain no tobacco. Instead, a liquid containing nicotine derived from tobacco leaves is vaporized. And users of e-cigarettes inhale that vapor; vapor mind-you, not smoke.” How do you think the fact that e-cigarettes don’t produce smoke or tar affects the arguments that health officials and anti-tobacco activists might attempt to make concerning the health of people who ‘vape?’ What about the arguments opponents might make regarding the health of people around those who are vaping?
- Ms. Kitchens also shares with us that, “Many former smokers have successfully used e-cigarettes to help them kick their nicotine addiction altogether. A recent study in an Oxford Journal peer-reviewed publication, Nicotine and Tobacco Research, said that e-cigarettes could reduce smoking-related deaths by 21 percent. That’s thousands of lives every year.” How, specifically, do you think e-cigarettes help smokers kick their nicotine addiction? Considering the significant benefits of e-cigarettes, why do you think anyone, especially the government, would so actively oppose them?
- At the end of the video, Ms. Kitchens states, “The government needs to develop a new paradigm for dealing with e-cigarettes - one that ensures basic standards but recognizes their relative safety and immense benefit to public health. If they don’t, more people will die.” What do you think she means when stating that the government needs to ‘develop a new paradigm for dealing with e-cigarettes - one that ensures basic standards?’ Do you agree with her dire prediction of what will happen if the government continues to overregulate the e-cigarette industry? Why or why not?

## EXTEND THE LEARNING:

### CASE STUDY: VMR

INSTRUCTIONS: Read the article “Can E-Cigarettes Survive The War Against Vaping?” then answer the questions that follow.

- What is VMR? How well do nicotine gum and patches work? Why did Mr. Verleur sell 51 percent of VMR’s shares to Huabao? Why does Mr. Verleur think that VMR won’t be able to introduce new, better products, and who does he blame? How much has Philip Morris spent on cigarette alternatives?
- Do you think the FDA has gone too far in regulating the e-cigarette industry? Why or why not? What do you think will happen to VMR in the long term?
- What is your position on e-cigarettes? Explain.



# QUIZ

## WHAT'S WRONG WITH E-CIGARETTES

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1. **E-cigarettes are the most innovative and promising smoking-cessation product yet invented.**
  - a. True
  - b. False
  
2. **What is the difference between a cigarette and an e-cigarette?**
  - a. There is no difference.
  - b. E-cigarettes contain no tobacco.
  - c. Cigarettes contain no nicotine.
  - d. None of the above.
  
3. **How safe are e-cigarettes?**
  - a. Completely safe.
  - b. Any potential risk is outweighed by a real good.
  - c. As harmful as cigarettes.
  - d. More harmful than cigarettes.
  
4. **What are the attitudes of public health officials and anti-smoking groups toward e-cigarettes?**
  - a. They are all in favor of this life-saving innovation.
  - b. There is little agreement.
  - c. They are almost entirely against them.
  - d. They don't put much focus on e-cigarettes.
  
5. **With less competition, e-cigarettes will \_\_\_\_\_, and many people will \_\_\_\_\_.**
  - a. create more carbon dioxide; die
  - b. fail; lose their nicotine addiction
  - c. thrive; be even more addicted to nicotine
  - d. become more expensive; go right back to smoking



# QUIZ - ANSWER KEY

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<https://www.forbes.com/sites/susanadams/2016/05/05/can-e-cigarettes-survive-the-war-against-vaping/#4a3b076c4cd0>

Entrepreneurs

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## Can E-Cigarettes Survive The War Against Vaping?



E-cig entrepreneur Jan Verleur with Princess. Credit: Sonya Revell For Forbes

Susan Adams Forbes Staff

I write about entrepreneurs, small business owners & what drives them

This story appears in the May 31, 2016 issue of Forbes.

*The Food and Drug Administration regulations referred to in this story as pending, came out May 5. As expected, the rules require e-cigarette makers to put all products that came on the market after February 15, 2007, through an extremely costly, retroactive pre-market application process, that will likely put thousands of vaping entrepreneurs out of business. Companies have a two-year period to comply. The regulations also ban the sale of e-cigarettes to Americans under 18.*

In the winter of 2008 Jan Verleur was living on the outskirts of Prague, working on a novel about three failed Internet entrepreneurs who invest their dwindling capital in an ecstasy-smuggling ring. It wasn't exactly autobiographical, but Verleur, now 36, was writing from experience with

failed ventures. His most recent had been an ambitious pornography business that lost \$22 million of investors' money, including \$1.6 million of his own.

One day, as he was picking up a pack of smokes at a Vietnamese convenience store, he noticed a box of e-cigarettes. He tried one, and it leaked liquid into his mouth. "The technology wasn't ready for market," he says, "but the idea struck me as amazing." Soon after, Dan Recio, his buddy and colleague in the porn business, persuaded him to return to the U.S. and take another crack at making money by satisfying a different human craving.

The nascent e-cig market was wide open. Startup costs were low, and regulation was nonexistent. The potential payoff looked huge: Vaping seemed poised to grow into an enormous global market for a healthier product. Invented in 2003 by a Chinese pharmacist whose father had died of lung cancer, e-cigarettes use lithium-ion batteries to heat nicotine-laced liquid, turning it into a vapor that has only traces of some of the 60-plus carcinogens in cigarette smoke. At first Verleur and Recio's Miami-based company, VMR, looked to be riding a big, beautiful wave.

But the industry has shifted dramatically in the six years since Verleur and thousands of other entrepreneurs jumped in. Demand for e-cigs has turned out to be smaller than at first expected. It grew from virtually nothing a decade ago to an estimated \$3.7 billion in the U.S. last year, according to ECigIntelligence, a British outfit that supplies information to the industry. But Nielsen NLSN +0.78% reports that sales in convenience stores and big retailers like Wal-Mart have started to contract, shrinking 6.2% in the 52 weeks that ended Mar. 26. Nielsen doesn't capture sales online or in America's 10,000 vape shops, but last year those channels were flat for VMR, which logged 2015 revenue of \$50 million. All told, e-cig sales still pale in comparison with the \$92 billion U.S. cigarette market.

Many smokers try e-cigs once and abandon them, disappointed that vapor doesn't taste or feel the same as real smoke in their mouths and throats and gives a slower nicotine hit. "There is a lot of trial and a lot of rejection," says tobacco analyst Vivien Azer, of Cowen and Company, in New York. "I'm not convinced the e-cigarette market will grow at all."

Meanwhile the forces arrayed against the many little players trying to grab a piece of that smaller-than-expected pie are daunting. Vaping entrepreneurs are up against a three-headed monster--Big Tobacco, the Food & Drug Administration and an army of antismoking zealots--which is able and more than willing to wipe them out.

Tobacco giants like Reynolds and Altria have leveraged their fat balance sheets, huge sales forces and established distribution channels to enter the e-cig market and now own the top four brands in the U.S. Vaping cognoscenti say those are inferior devices that don't really threaten Big Tobacco's core product, traditional cigarettes (the tobacco companies insist they are committed to their cigarette alternatives).

More ominous for smaller players like Verleur: The FDA is expected to announce regulations soon that will treat e-cigs as tobacco products. If a draft rule released by the FDA in 2014 stands, thousands of e-cig products on the market will have to go through an onerous preapproval process that e-cig companies say could cost them as much as \$2 million per item. (The FDA puts the figure at \$330,000.) VMR, which sells mostly online and doesn't need to limit itself to what will fit in a convenience store display, offers more than 500 types of e-liquids, vaporizers and e-cig accessories, so fully complying with the new regulations will cost it anywhere from \$175 million to \$1 billion. Daniel Walsh, CEO of Purebacco, an e-liquid maker in Gaylord, Mich., which sells more than 200 selections, calls the impending rules "Vapocalypse."

The FDA has been egged on by antismoking groups like the American Lung Association and the Campaign for Tobacco-Free Kids, which have taken a hard line against vaping. Ignoring or minimizing the fact that millions of smokers have used e-cigs to quit or cut down, the antismoking lobby instead obsesses over the minimal health risks of vaping. They prefer that would-be quitters stick with patches and gum, which work as little as 7% of the time. Some 70% of American smokers say they want to quit, and 480,000 people died last year of smoking-related illness.

One tobacco industry consultant, who did not want to be quoted on the record for fear of irritating his powerful clients, recently remarked that the warnings against e-cigs by one prominent antismoking public health professor are "the best p.r. campaign for cigarettes going."

In an e-mailed statement, FDA spokesman Michael Felberbaum says, "The FDA's responsibility is to protect Americans from tobacco-related disease and death," insisting that the agency's objective is to learn as much as it can about e-cigs before approving them rather than put anyone out of business. Yet the proposed rules require that companies present comprehensive research findings on the impact of every product on the entire population and gauge the likelihood that ex-smokers will start vaping, a near-impossible task for small players like VMR.

Joel Nitzkin, former cochair of the Tobacco Control Task Force of the American Association of Public Health Physicians, who is now a fellow at a free-market think tank called R Street Institute, says of the FDA, "They think they're on a mission from God. The horrific part is that they're going to maintain cigarettes as the lead nicotine-delivery product in American society." What's more, he says, "they are refusing either to tell the public or allow manufacturers and vendors to tell the public about the difference in risks between e-cigarettes and tobacco cigarettes." Indeed, even if a vaping company can jump through the FDA's proposed regulatory hoops, it won't be allowed to claim its products pose less harm than traditional cigarettes.

No one suggests that e-cigs are completely safe. They deliver nicotine, which can interfere with brain development in young people, harm a developing fetus and pose risks to people with cardiovascular disease. E-cig vapor contains a dozen or so of the carcinogens found in cigarette smoke, though at very low levels. As an August 2015 report from Public Health England, an arm of the U.K.'s health service, reported last year, e-cigs are 95% safer than cigarettes. This April the Royal College of Physicians cited that figure and urged smokers to switch to vaping.

But the British evidence hasn't swayed antismoking advocates like the American Lung Association's assistant vice president of national advocacy, Erika Sward, who says she's worried that e-cig makers are marketing to kids with flavors like cotton candy, that the majority of vapers continue to smoke and that former smokers will start vaping. "Cigarettes are the nuclear option," she says. "That doesn't make conventional warfare any less deadly."

Media reports have fed the idea that e-cigs pose all sorts of dangers. In January 2015 the New England Journal of Medicine published a study that showed toxic levels of formaldehyde could be produced by a high-powered vaporizer. The report also noted that no one would ever heat e-liquid to that temperature. Likewise, when a Harvard study showed the presence of the chemical diacetyl in 75% of e-liquids, there were headlines about e-cigs causing irreversible scarring of the lungs, despite the fact that diacetyl is present in extremely low doses. The toxic chemical is hundreds of times more plentiful in traditional cigarettes.



Since Verleur started VMR, the American e-cig market has stratified into two broad segments: "cigalikes," which mimic traditional cigarettes, and "mods," which are more powerful and satisfying.

The differences are striking. Cigalikes, which include VUSE (Reynolds), MarkTen (Altria), blu (Imperial Tobacco) and Logic (JTI), are the Budweisers and Millers of the vapor market, sold in convenience stores and chain retailers. They are packaged to look like cigarettes, with a long, tubular battery making up the body, a cartridge of fluid where the filter would go and, on the tip, an LED that glows when in use. A VUSE startup kit costs \$10 for a vaporizer, a battery charger and a cartridge of liquid that roughly equals a pack of cigarettes. Replacement cartridges are \$6 for a pack of two.

Mods are more like craft brews. There are thousands of them, and they're typically modified to accommodate more powerful batteries, for a greater volume of vapor and a more satisfying experience. Mods are open systems, meaning that the vaper buys bottles of nicotine liquid and fills the tank herself. Most are made by mom-and-pop entrepreneurs and small companies like VMR. They sell mainly in vape shops, which stock e-liquids that cost as little as \$1.20 for the equivalent of a pack of cigarettes.

Big Tobacco brands have light-years to travel before their e-cigs make anywhere near the money combustibles do. Extrapolating from Nielsen-tracked retail sales numbers, the four top brands combined were responsible for just \$300 million in U.S. revenue last year, barely a rounding error in an industry where, in the same period, Reynolds alone brought in nearly \$11 billion. Also e-cigs yield little if any profit. VUSE, the No. 1 brand, which Reynolds introduced in 2014, was still in the red at the end of last year. Among the reasons for the poor performance, says tobacco analyst Vivien Azer: e-cigs' relatively high manufacturing cost and heavy discounting to attract customers. By contrast, gross margins on Reynolds' traditional tobacco products were 44% last year, according to Azer. (Reynolds declines to comment except to say that it is continuing to invest in VUSE.)

At VMR, Verleur has pushed to attract both the masses and the connoisseurs, offering cigalikes, mods and multiple e-liquids in convenience stores, online and in vape shops. Unlike the Big Tobacco brands, which focus on the domestic market, a quarter of his business is overseas, where he sells in 30 countries. In December he sold a 51% stake to a Chinese company, Huabao, in exchange for entrée to a largely untapped market, where some 315 million smokers spend more than \$200 billion a year on cigarettes. Controlled by billionaire Chu Lam Yiu, Huabao had \$558 million in revenue last year and, at least in theory, deep enough pockets to pay for regulatory compliance back in the U.S. The company supplies tobacco flavoring to the state cigarette monopoly and already sells e-cigs to the Chinese market. Huabao paid \$23 million and left Verleur in control as chairman and CEO. (The deal includes a golden parachute that he says will pay him more than \$23 million should he be ousted.) The three-headed monster has hounded him into business exile.

These days Verleur shuttles back and forth between China and Florida. He lives half the year in a hotel in Shenzhen, where VMR has 60 full-time employees and contracts with 3,000 workers in two factories. The rest of the time he's in Miami, where he says he's "homeless" after splitting up with the mother of his third child. ("I'm a hard person to have a relationship with.") He sometimes sleeps in a room next to his office, making conference calls to China at 3 a.m., or stays in a company apartment nearby. He keeps a packed suitcase in the trunk of his Jeep, which is covered in shiny bronze bulletproof Kevlar. "I bought it because it looked cool," he says.

Before he hit on e-cigs, Verleur displayed a knack for sales and hit-or-miss entrepreneurship. As a freshman at Penn State, he says, he made as much as \$30,000 a month selling \$1,000 Cutco knife sets before dropping out. Next he got a job in Orlando with a company that sold Web-design services. Then he followed a Cuban girlfriend to Miami, where he started and shut down a series of businesses, including one that sold sales-intelligence software and another that supplied Indian tech workers to American companies. "There were times when I'd have a million-dollar year," he says, "and other times I'd lose a couple hundred grand."

Or more. In 2003 he tried to build an online venture he hoped would become "the HBO of porn." It produced its own Internet programming, including a reality show called *The Brothel*, at studios in Miami and Prague. He planned to sell sex toys and lingerie on the shows and to pipe live porn into hotel rooms. "If I had endless capital," he shouts over a plate of bacon-wrapped dates at a trendy Miami restaurant, music thumping, "I think we'd be the largest adult entertainment company in the world today."

When he got around to e-cigs, in 2010, he figured he'd be most successful online, where there were only a handful of poorly designed sites selling them. He and Recio invested \$7,500 each, as did a third partner. Within a year VMR had moved into a ten-story glass-and-steel office building in Miami, and revenue hit \$19 million. Two years later, revenue ballooned to \$75 million and the head count was at 180, split among Miami, Shenzhen, a distribution center in Prague and small offices in Hamburg, London, Moscow and Hong Kong. Then came two years of declining sales and growing concerns about regulation.

By 2013 there were rumblings that online sales of e-cigs might be banned in the U.S. Verleur responded by selling a limited number of products in brick-and-mortar stores, despite much lower margins. Meanwhile competitors, including NJoy, which had attracted investors like billionaires Sean Parker and Peter Thiel, were flooding the market and growing fast. Last December, anxious to strengthen his position before the FDA made its long-awaited move on regs, Verleur sold half of VMR to Huabao.

Verleur says he's hopeful that the FDA's regs will ultimately be softened. (In April the House Appropriations Committee approved a measure that would exempt from the costly pre-market approval process all the vaping products on the market before the regulations take their final form.) He's still sure, though, that it will soon be prohibitively expensive for VMR and other small players to introduce new, better products. "Big Tobacco wants to stop innovation in its tracks and make sure no one comes out with something that will collapse its empire," he says.

Verleur himself remains a slave to the empire. Vaping has helped him cut down his two-pack-a-day habit. But he still smokes. "I have four or five a day," he says. His brand? "Marlboro, my arch-nemesis."

## Beyond Cigarettes



Philip Morris International's iQOS

Many smokers find e-cigs disappointing. As a result, a lot of money is going into the development of products that taste and feel more like smoking. One is a "heat not burn" device called iQOS (see FORBES, May 28, 2014), created in Philip Morris International's \$120 million research facility in Neuchâtel, Switzerland, where the company has spent more than \$2 billion on cigarette alternatives. IQOS was introduced in Europe and Japan last year. It uses a tobacco stick inserted into what looks like a cigarette holder, which heats the stick enough to produce a vapor. In just six months iQOS has taken over 3.4% of the tobacco market in Tokyo, according to a Philip Morris spokesman. The company plans to apply for FDA approval at the end of this year as a modified-risk tobacco product.



PAX Labs' JUUL

The most promising new thing in the U.S. is the JUUL, made by PAX Labs in San Francisco, which recently raised \$47 million in its third round of venture funding. The company was started in 2007 by two former engineering-design graduate students from Stanford, who already have a popular heat-not-burn vaporizer frequently used for marijuana. Instead of e-liquid the JUUL vaporizes a nicotine-salt substance that cofounder Adam Bowen says hits the bloodstream more quickly than the nicotine from an e-cig and produces vapor that feels more like smoke. The device, which looks like an elongated thumb drive, was introduced in June and is selling 8.7 four-cartridge refills within a four-week period for every starter kit that leaves the shelf. -- S.A.