

How to launch a “Safer” Cigarette



Economics of Competitive Strategy

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Executive Summary

The U.S. cigarette industry is currently in a state of disarray. The U.S. federal government is suing the cigarette companies to recover costs associated with treating smokers. The Master Settlement Agreement between the states and the cigarette companies was recently signed, requiring the cigarette companies to pay billions of dollars to the states over the next few decades. In addition, the cigarette companies are facing attacks at historically unprecedented levels from regulatory agencies and public health groups over the companies' promotions. In particular, the public health groups take issue with the industry's promotions of "safer" cigarettes.

In response to this criticism, the cigarette companies today are trying to reduce the harmful effects of smoking by altering the tobacco during its curing process and by changing the method of delivering the tobacco, such as heating the tobacco instead of burning it. *The challenge to the cigarette companies, and the focus of this analysis, is how to effectively promote these products in a climate that is characterized by (1) hostile reaction by the public health community to the introduction of any "safer" cigarette, due to the belief that there is no such thing as a safe cigarette, and (2) government regulation that proscribes the use of advertising claims that may be construed as deceptive or misleading.* In particular, we are interested in the best strategy to be used by Philip Morris in its introduction of a safer cigarette.

This report begins with an analysis of the recent trends in the cigarette industry and the development of "safer" products. We then thoroughly analyze the industry structure and its competitive landscape. We learned that many economists characterize the industry as an oligopoly in which the firms clearly recognize their mutual interdependence. Although no evidence of explicit collusion has been uncovered, economic history indicates that the cigarette firms have, for long periods, been able to price cigarettes above competitive levels, notwithstanding infrequent episodes of more intense price competition and product innovation. Next the report considers the current promotions of "safer" cigarettes by Philip Morris' competitors and their effectiveness. We then recommend that Philip Morris should launch its product, but abstain from touting it as a "safer" cigarette until it receives FTC and other third-party approval. And finally, given the shift occurring among smokers towards safer cigarettes and the shift by some public health groups towards acceptance of safer cigarettes, we conclude that it is in all companies' joint interest to avoid conflict and come up with new ways of industry cooperation with the government. As the largest player in the industry and the de-facto leader, Philip Morris needs to initiate government cooperation in the area of "reduced-risk" cigarettes and leverage this cooperation with credible third parties.

I. Introduction - Industry Trends Towards Safer Cigarettes

On November 16, 1998, States attorneys general and cigarette manufacturers signed an agreement to reimburse the States for the costs of treating smoking-related illnesses and to reduce underage smoking.¹ Key elements of the pact are:

- \$206 billion to be paid to States over 25 years.
- \$1.5 billion over 10 years to support anti-smoking measures plus \$250 million to fund research into reducing youth smoking.
- Limitations on advertising and ban on cartoon characters in advertising.
- Ban on “branded” merchandise.
- Limitations on sporting event sponsorship.
- Disbanding of tobacco trade organizations.²

Post-1998 settlement the following trends have been evident³:

- Rising prices have caused cigarette consumption to decline 7.5%.
- Other factors, such as restrictions on where people can smoke, anti-smoking sentiment whipped up by government, press, advertising, anti-smoking groups and health care institutions and the greater knowledge of the health risks associated with smoking, also have contributed to lower cigarette consumption.
- Year-end 2000 cigarette consumption was 430 billion pieces compared with 435 billion pieces in 1999.
- Per capita consumption continued to slip at 2,025 pieces per person (total U.S. age 16 and over population) compared with 2,067 pieces for the same group in 1999.
- Cigarette consumption in the United States is likely to decline between 1 and 3 percent per year, assuming price increases similar to those of the past 2 years.

After the settlement, cigarette makers, now acknowledge their products are toxic. *However, market surveys tell them smokers want safer brands. In this backdrop, investment in research of so-called “reduced-risk” brands is becoming a business necessity for the tobacco companies.*

R.J. Reynolds, Star Scientific and Brown & Williamson have all launched “safer” cigarettes, and both Philip Morris and Lorillard are aggressively researching ways to make “less dangerous cigarettes.” Vector has most strongly tied its fortunes to the potential success of its less-toxic cigarette “Omni.” After Omni, it plans to introduce a nearly nicotine-free cigarette called “Quest” made from a bio-engineered tobacco leaf developed at N.C. State University.⁴ In addition, its scientists are trying to reduce cigarettes carbon monoxide, a poison tied closely to heart disease in smokers.

¹ Forty-six states, the District of Columbia and various territories signed the agreement, referred to as the Master Settlement Agreement. Four states settled earlier.

² As part of the trade organization disbandment, manufacturers are proscribed from meeting.

³ Capehart, Thomas C., Jr., *Trends in the Cigarette Industry after the Master Settlement Agreement*, USDA, October 2001.

⁴ www.liggett.com

However, in the absence of government regulations requiring new cigarettes to undergo independent scientific evaluation, the very viability of the claim “safe cigarette” is open to legal challenges. There is no single government agency in charge of assessing and certifying the medical effects of these new cigarettes. Tobacco opponents fear this latest generation of cigarettes may be just the latest marketing innovation by companies that once added filters and then low-tar and low-nicotine brands to project safer images. But the tobacco manufacturers say that they need help from the government: fair guidance on how to test the new goods and controls on what they can say about why the cigarettes are different. In late 2001, a National Cancer Institute study reported that changes in cigarette design and production over the last 50 years did not protect smokers from lung cancer, heart disease or emphysema.⁵ Light cigarettes, as well as new slow burning and other “safer” varieties that claim to reduce health risks, may be just as harmful as conventional cigarettes, according to another major report by the National Academy of Sciences.⁶

Thus, despite the fact that there exists a huge potential for “safe cigarettes” – there are numerous pitfalls in launching and establishing these cigarettes. In the next sections, we analyze the tobacco industry and the various considerations that Philip Morris needs to keep in mind as it prepares to launch its safe cigarettes.

II. Industry Analysis

Barriers to Entry

The tobacco industry imposes significant barriers to entry for new products/firms. Any new entrant not only faces economic barriers but also regulatory ones.

Switching Costs - Cigarette smokers are known for their brand loyalty. A large part of firm resources are spent retaining existing customers through loyalty programs and attracting new customers by offering promotional campaigns. For example, Philip Morris offered “Marlboro Miles,” a campaign which allowed repeat Marlboro customers to redeem points earned from their purchases for Marlboro merchandise such as jackets and shirts.⁷ However, today, the Master Settlement Agreement (MSA) proscribes any manufacturers from promoting “branded” merchandise. This makes it more difficult to establish new brands.

Regulatory Authorities - The tobacco industry is one of the most tightly regulated industries and for that reason is also the most difficult to enter, as there is a plethora of government imposed regulations and restrictions. In addition all manufacturers are required to make payments to the states pursuant to the MSA.⁸ The cigarette industry does not fall under the purview of any one particular governmental agency, but instead is supervised in part by Congress, the Food and Drugs Administration and the Federal Trade Commission.

⁵ Clabby, Catherine, “‘Safer’ Cigarettes Show Promise -- or Threat,” *The News and Observer*, December 28, 2001.

⁶ “‘Safer’ Cigarettes May Be as Harmful as Regular Varieties,” *The Washington Post*, February 23, 2001.

⁷ “Loyalty Program Takes RJR's Doral to No. 3,” *Advertising Age*, August 30, 1999, p. 4.

⁸ The MSA payments even apply to manufacturers entering the industry after the MSA signing.

Congress/Senate – The tobacco industry is under the overall supervision of Congress, which has laid down the regulatory structure for monitoring and controlling advertising and investigating and policing antitrust violations. At present, there are several pending regulations in the Senate with respect to bringing the cigarette industry under the jurisdiction of the FDA. Through the Federal Cigarette Labeling and Advertising Act, 15 U.S.C. § 1331, Congress requires a warning label on all cigarette advertisements and labels. The federal government also heavily taxes cigarettes through excise taxes.

Food and Drugs Administration (FDA) – In 1996, the FDA assumed control of the industry but this move was later turned down in 2000 after the tobacco firms turned to the Supreme Court. However, there are many FDA regulations in place, which govern the means of distributing and selling cigarettes.

Federal Trade Commission (FTC) – Pursuant to the Federal Cigarette Labeling and Advertising Act, 15 U.S.C. § 1331, the Commission annually reports to Congress on sales volume and advertising expenditures by the major domestic cigarette manufacturers.⁹ The Commission has additional responsibilities under the Cigarette Labeling and Advertising Act and has investigated and frequently challenged cigarette advertising. In addition, the Commission has investigated competitive practices of the cigarette firms over the past seventy years and challenged the 1994 merger between the American Tobacco Company and Brown & Williamson.

Anti-smoking Groups and Pending Litigations – Both these factors tend to be deterrents for new entrants. In case of new brand launch on the “safer cigarette” platform, we expect the anti-smoking groups to be especially vocal in their opposition, based on their historical record.

Scale of Economy- The cigarette industry is marked by large economies of scale, particularly in distribution. All the leading players have extensive distribution networks spread across the United States.

Thus, looking at all these barriers to entry, it will be extremely difficult for a new firm/brand to enter, as it has to reach the customer through a plethora of government regulations and restrictions. In addition, health related claims (low “tar,” low nicotine, smokeless, etc.) made by firms are minutely scrutinized by the FTC, the FDA and anti-smoking groups.

Rivalry

The rivalry in the industry is relatively low, as most of the time the firms do not compete on price. Reasons for this non-price competition are: (1) a small number of players (loose oligopoly), (2) high barriers to entry, (3) product differentiation and innovation through a wide portfolio of brands and cigarette varieties, (4) advertising and promotional activities and (5) brand loyalty among customers.

The cigarette industry has been characterized as an oligopoly in which the firms clearly

⁹ Mathios, Alan and Mark Plummer, *Regulation of Advertising: Capital Market Effects*, Bureau of Economics Staff Report to the FTC, April 1988.

recognize their mutual interdependence. Although no evidence of explicit collusion has been uncovered, economic history indicates that the cigarette firms have, for long periods, been able to price cigarettes above competitive levels, notwithstanding infrequent episodes of more intense price competition and product innovation.¹⁰

Several structural factors support the industry's ability to raise prices above competitive levels. First, there are relatively few firms. Currently, there are only five significant firms and three of these (Philip Morris, R.J. Reynolds, and Brown & Williamson) account for about ninety percent of the U.S. market. Second, overall demand by adults for cigarettes is relatively insensitive to changes in price. Third, the industry is well insulated from entry by new firms. Finally, the opportunity for firms tacitly to coordinate price increases is enhanced because rival firms, making price-cutting an unprofitable short-run strategy, can quickly match changes in price.⁸

The marginal costs of making the cigarettes is critical, as it affects the manufacturer's margin and how much can be spent on advertising and promotional activities. The leading manufacturer, Philip Morris, has the lowest cost per pack of producing cigarettes, U.S. \$0.50, compared to an industry average of U.S. \$0.54. The smallest of the major domestic manufacturers, Liggett, has the highest cost, U.S. \$0.67.¹¹ Of course, a low manufacturer cost per pack is as much a result of the company's market share as it is a cause. The cigarette industry has been able to retain its post-tax margins rather than passing it onto the customers by way of price wars.¹²

The Master Settlement Agreement in 1998 had an important effect on competition in this market. A substantial price increase of cigarettes was contemplated by the authorities as one immediate goal of the proposed settlement that would enable the companies to pay for the liabilities and *possibly* reduce the overall tobacco consumption due to increased prices.

Almost all the major firms are either planning a "safe" cigarette launch or have already done so. But this may not lead to build-up of competitive pressures as most of the players want to keep their products low profile until they are explicitly (by promulgation of statute) or implicitly granted legitimacy. Any advertising or high profile brand launch may be suicidal and hence this aspect reduces the impact of the overall rivalry in the "safer" segment. Moreover, all the cigarettes are based on different platforms and thus are largely differentiated from each other.

Customers

Some of the behavioral trends in cigarette consumption are as follows:

- First, the consumers are fragmented and hence do not exert significant power over the producer of cigarettes.

¹⁰ *Competition and the Financial Impact of the Proposed Tobacco Industry Settlement*, FTC Staff Report Prepared upon Request by the Congressional Task Force Staff on Tobacco and Health, September 1997.

¹¹ Cost figures from www.euromonitor.com.

¹² State tax, for instance, is a substantial component of retail price, as high as \$1.50 per pack in New York and Washington.

- Second, the ability of cigarette manufacturers to raise prices is significant as the estimates of overall price elasticity of demand for cigarettes, a common measure of price sensitivity, are commonly put in the vicinity of -0.4 .¹³ Brands enjoy significant brand loyalty amongst users and maintaining this loyalty is an important determinant of a manufacturer's gain or loss of share. Although aggregate cigarette consumption in the US has declined by about 35 billion cigarettes since 1998, premium brands especially have shown a tenacious grasp on market share.³

Suppliers

The major input suppliers to the industry are tobacco farmers who are scattered and have traditionally taken their harvested crops to warehouses scattered across Virginia and much of the Southeast, where the tobacco is sold to companies at daily auctions during the late summer and early fall. There has been a trend in last couple of years towards direct contracting between the farmers and the cigarette manufacturer, thus totally by-passing the auction system, which is a federally regulated quota system.¹⁴ In addition, Vector is attempting to introduce a genetically modified zero nicotine tobacco which will be grown in land owned by the company. Given these aspects, the growers have virtually no market power over the cigarette companies.

Substitutes

Nicotine patch, nicotine gums and low "tar" and nicotine cigarettes have all in the past been positioned as substitutes for those trying to quit smoking or reduce the negative effects of smoking. However, various regulatory agencies and anti-smoking groups have denounced these products as poor substitutes. Thus, many anti-smoking groups believe there is no good substitute for smoking. Cigarette consumption is in the late maturity phase of the product life cycle, and tobacco consumption has dropped over the last few years, in part due to the public health campaign and in part due to the recent post-MSA price increases. In the next section, we now analyze the various product promotions and launch strategies of competitors and finally use the option value of investment model to evaluate the decision to launch in progressive steps.

III. Overview of Strategic Options

A. Option Value of Investment Delay

Vector and B&W launched their safer cigarettes with an aggressive advertising and marketing campaign, with claims that there is no such thing as a "safe" cigarette. B&W took a step further in communicating in the ads that there are adverse health consequences of smoking. R.J. Reynolds Tobacco Co., on the other hand, launched its differentiated "Eclipse" brand with

¹³ FTC vs. B.A.T. Industries p.l.c., 94 Civ 7849, (filed Oct 31, 1994, S.D.N.Y.) (testimony of Lewis Tatem, economic expert of FTC, Tr. 543-44).

¹⁴ "Philip Morris to Buy Tobacco Directly from Growers, Bypass Auction System," *Richmond Times-Dispatch*, December 1, 2000.

relatively low-profile test marketing. The rationale behind RJR's low profile launch strategy was that it may not be able to roll out the brand nationally with extensive advertising and communication of its claim that its cigarettes present smokers with less risk of cancer, chronic bronchitis and emphysema. In fact, the American Cancer Society, the American Heart Association and the Campaign for Tobacco-Free Kids called on the company to immediately stop test marketing its Eclipse cigarette and to cease from making health claims about the product.

In the wake of negative media attention and Federal Trade Commission restrictions on advertising, one of the key decisions to make while launching a new safer cigarette is your differentiation and communication strategy. The option view to investment suggests appropriate caution by proceeding in steps instead of committing yourself to the investment. It also suggests not taking a final and irreversible plunge into very specialized lines unless the rate of return to the investment is sufficiently greater than the cost, with high enough rewards to justify killing/exercising the option.

Philip Morris currently has the option on whether or not to aggressively promote the product. There is an uncertainty over the response of Government and anti-smoking agencies over the claim for safer cigarettes. RJR has already exercised its option by claiming its Eclipse cigarettes to be safer. Vector and B&W have also exercised their options by making claims that there is no safe smoking but their cigarettes are safer than others.

In all cases, the response from anti-smoking agencies has been very negative and there is a big threat of legal actions. In such a scenario, it may pay to wait and see if competitors experience a favorable public reaction. Because the other firms have had a head start, the cost of delay does not involve a loss of a first-mover advantage that is already lost. Delay eliminates the scenarios of lawsuits and negative publicity. The result of savings on possible lawsuit settlements may be worth more than the value of slightly earlier entry.

We therefore recommend that Philip Morris should launch its product, but abstain from touting it as a "safer" cigarette until it receives FTC and other third-party approval. In other words, we recommend that Philip Morris retain its option till such time as there is an endorsement or approval from a credible third-party. We now analyze why it is important to receive third-party approval.

B. Cooperation

Though, it may be very desirable from the point of view of industry profitability to establish a trade association to lobby the government and quasi-judicial bodies like the FTC and the FDA, the tobacco companies are unable to do so pursuant to a Department of Justice (DOJ) consent decree, which prohibits the tobacco companies from meeting, and pursuant to the 1998 Master Settlement Agreement, which abolished the TIRC/CTR and prohibits the tobacco companies from ever forming a trade association again. Essentially the companies today are not allowed to work together - not even to lobby the government. This is unlike any other industry where the players often form trade associations that lobby the government. Therefore, any cooperation with the government must be performed on an individual basis, which we describe as an attempt to obtain a third-party endorsement.

The history of lower “tar” and nicotine cigarettes and charcoal filters indicates that “endorsement” by credible third parties is a key determinant in consumers’ perceptions about potential health benefits of specific cigarette products. In 1966, the Public Health Service announced that “the preponderance of scientific evidence strongly suggests that the lower the ‘tar’ and nicotine content of a cigarette, the less harmful [will] be the effect.”¹⁵ Following this announcement, the sales weighted average “tar” and nicotine per cigarette fell precipitously (Exhibit 1). In its 1979 report, the Surgeon General accredited this reduction in the “tar” content partially to its 1966 announcement.¹⁶

Liggett’s Lark charcoal filtered cigarettes later received “credible” endorsement by a member of the Surgeon General’s staff. Louis F. Fieser, a Harvard University chemist and a member of the Surgeon General’s staff, stated that he switched to a charcoal filter brand because “it represents a definite improvement.”¹⁷ Sales of Lark cigarettes increased dramatically after this endorsement (Exhibit 2).

In 1978, Gio B. Gori, then deputy director of the National Cancer Institute’s causes-and-prevention division, discussed with the Associated Press a study of cigarettes conducted by his staff. He concluded that cigarettes yielding the lowest quantities of toxic substances could be smoked in moderate amounts without serious danger to the smoker’s health. Gori recommended American Tobacco’s Carlton brand and Reynolds’ Now brand as the safest, and sales of these brands surged (See Exhibits 3 and 4).¹⁸

Over the last two decades, the potential for credible third party support for new cigarette products has fallen very substantially, particularly with the government and public health community’s marked shift of policy to emphasizing smoking cessation rather than policies encouraging potentially safer smoking behavior. *But recent comments by the Institute of Medicine indicate that this policy is changing. In 2001 an Institute of Medicine committee recommended a shift in policy towards promoting the research and production of safer cigarettes, concluding that many smokers will continue to smoke cigarettes, and for those smokers a safer alternative is preferred.*¹⁹ We recommend that Philip Morris should attempt to exploit this apparent thawing or at least amenability of regulatory attitude. Vector has been partly exploiting this strategy with respect to the “nicotine-free” tobacco that it plans to use in its forthcoming brand Quest. A study by the Department of Agriculture confirmed the low levels of nicotine, the addictive chemical, in the tobacco and found that the crop poses little risk to the environment.²⁰

¹⁵ Hearings before the Consumer Subcommittee of the Senate Committee on Commerce, as quoted in “Staff Report on the Cigarette Advertising Investigation,” Federal Trade Commission, May 1981, pp. 1-49.

¹⁶ Smoking and Health: A Report of the Surgeon General, 1979, p. xii.

¹⁷ Brown, R. “Tobacco – The Washington Hearings on Cigarette Labeling,” *Time*, March 27, 1964, pp. 79-80; “Cigarette ads: accent on ‘taste’,” *Printers’ Ink*, vol. 289, no. 11, December 18/25, 1964, pp. 26-27.

¹⁸ Louis, Arthur M., “The \$150-Million Cigarette,” *Fortune*, November 17, 1980, p. 122.

¹⁹ Stratton, Kathleen, Padma Shetty, Robert Wallace, and Stuart Bondurant, *Clearing the Smoke: Assessing the Science Base for Tobacco Harm Reduction*, Institute of Medicine, National Academy Press, 2001.

²⁰ “Vector says new cigarette is almost nicotine free,” *The New York Times*, March 12, 2002, page 6.

IV. Strategic Issue and Recommendations

Strategic Issue

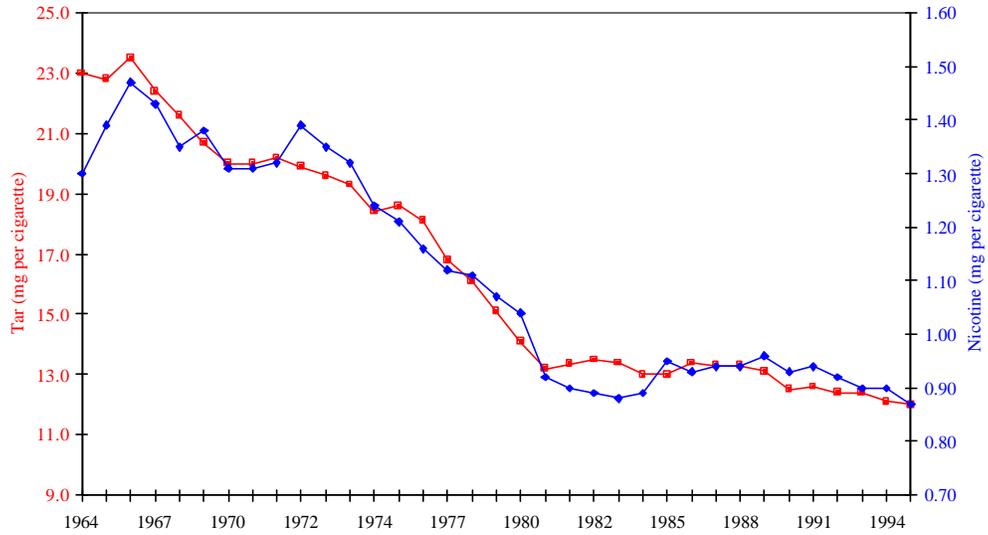
How should Philip Morris launch a “safer” cigarette in a climate that is characterized by government regulations that proscribes the use of advertising claims that may be construed as deceptive or misleading, and a hostile reaction by the public health community to the introduction of any “safer” cigarette, due to the belief that there is no such thing as a safe cigarette?

Recommendations

In the face of growing hostile environment, falling per capita cigarette consumption and increasingly strict regulatory structure - introduction of new products has become an extremely challenging proposition. We recommend the following approach for Philip Morris:

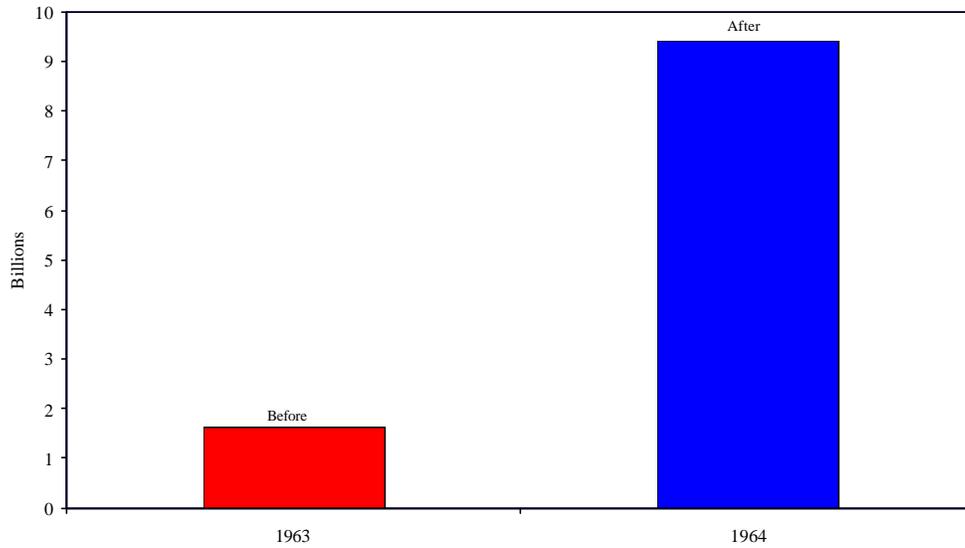
- In view of increasing anti-tobacco sentiment, Philip Morris should not exercise the option of going for a high-profile nationwide launch. Instead, it should go for a quiet rollout, which would attract least media attention. In the event, Liggett (which opted for a full scale launch of “Omni”) is successful in getting a successful endorsement or entry, Philip Morris can be a later entrant. Though Liggett may have some first mover advantage, Phillip Morris can easily overcome this, given its huge marketing machinery and skill.
- The recent shift by the Institute of Medicine (IOM) and some other regulatory authorities indicates that industry cooperation with the government (FTC and FDA) and public health groups, like IOM, is the best strategy to promote the acceptance of safer cigarettes in the short-run. In addition to the FDA providing guidance on the *promotion and delivery of safer cigarettes*, FDA oversight could help Philip Morris preserve their existing brands such as Marlboro. Lobbying with government bodies like the FDA or the IOM to get a “safer” cigarette tag for its brand and proving it scientifically will be the best bet.
- For the long-term, a simultaneous course of action could be to invest heavily in R&D towards new products, which could be less hazardous than the existing ones. Vector group’s “Quest” made from nicotine-free tobacco is one such example of new products in the pipeline. As mentioned earlier, Vector has successfully managed to obtain quasi-endorsement from the USDA for its nicotine-free tobacco.

**Exhibit 1 - Sales Weighted Average Tar and Nicotine per Cigarette
1964-1995**



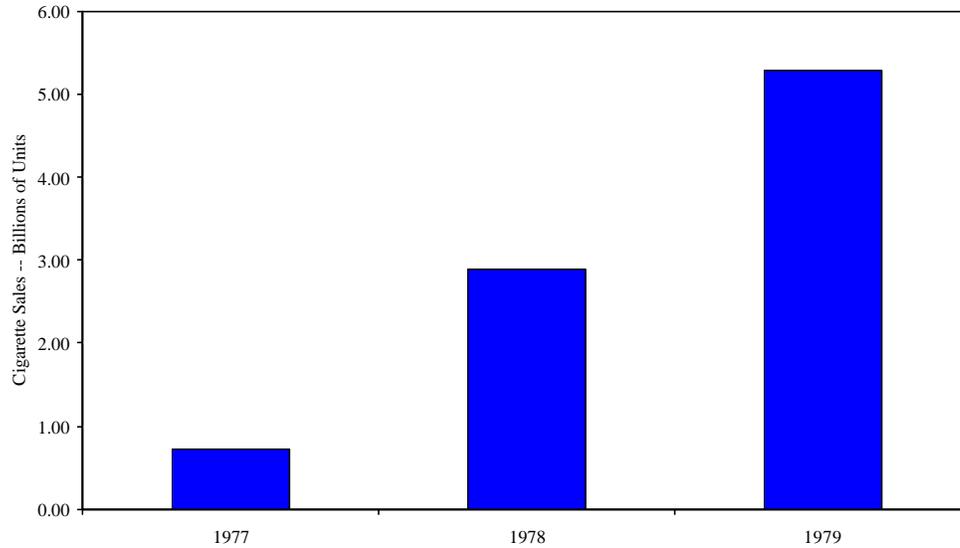
Source: Federal Trade Commission's annual report to Congress: Report of Tar, Nicotine and Carbon Monoxide of the Smoke of Domestic Cigarettes, 1967-1997.

**Exhibit 2 - Sales of Lark Cigarettes After Dr. Louis Feiser's
Statement that He Switched to the Charcoal-Filtered Brand**



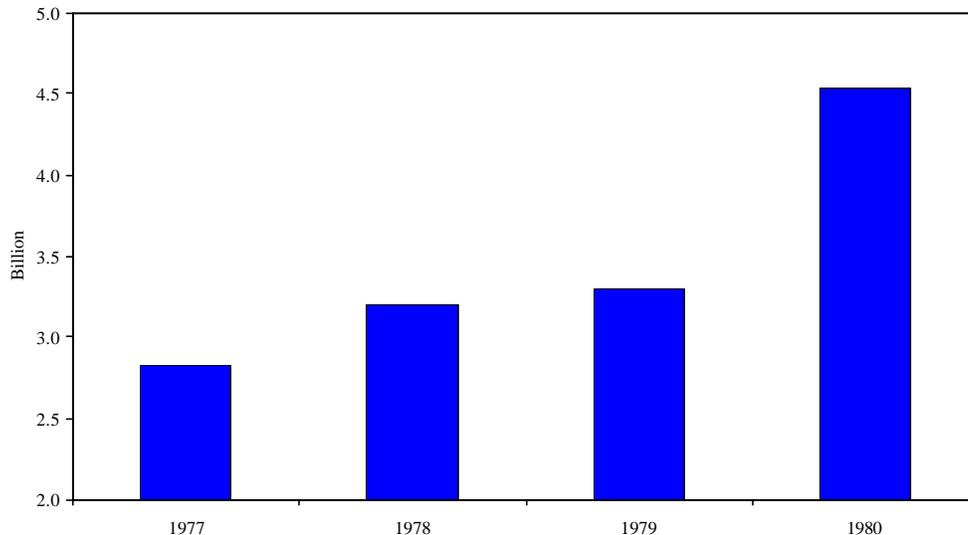
Source: Maxwell, John C., Jr., Historical Sales Trends in the Cigarette Industry: A Statistical Summary Covering 71 Years, 1925-1996, April 1997; "The Washington Hearings on Cigarette Labeling," Time, March 27, 1964, p. 80; Brown, Robert H. "Cigarette Ads: Accent on 'Taste,'" Printers' Ink, December 18, 1964, pp. 26-27.

**Exhibit 3 - Sales of Carlton Filter 100s after Gori's Report
Reveals them to be Lowest in Tar and Nicotine**



Maxwell, John C., Jr., Historical Sales Trends in the Cigarette Industry: A Statistical Summary Covering 71 Years, 1925-1996, Wheat First Butcher Singer, April 1997; Louis, Arthur M. "The \$150-Million Cigarette," Fortune, November 17, 1980, p. 122.

**Exhibit 4 - Sales of Now Cigarettes After Gori's Report
Reveals them to be Lowest in Tar and Nicotine**



Source: Maxwell, John C., Jr., Historical Sales Trends in the Cigarette Industry: A Statistical Summary Covering 71 Years, 1925-1996, Wheat First Butcher Singer, April 1997; Louis, Arthur M. "The \$150-Million Cigarette," Fortune, November 17, 1980, p. 122.