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E-Cigarette Market Trends in Traditional U.S. Retail Channels, 2012–2013

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Abstract

Introduction: E-cigarette sales continue to increase in the United States. To date, little surveillance research has documented the specific product attributes driving growth. This study uses national market scanner data to describe sales trends in traditional U.S. tobacco retail channels between 2012 and 2013 and identifies product features associated with sales increases.

Methods: Data on e-cigarette sales in convenience stores, drug stores, grocery stores, and mass merchandisers in the United States were obtained from the Nielsen Company. Each product was coded for attributes such as brand, flavor, and unit size. Total sales volume, market share, and percent growth were calculated for various product attributes.

Results: E-cigarette sales more than doubled between 2012 and 2013, from $273.6 million to $636.2 million, respectively. Growth was particularly strong in the convenience store channel. Blu eCigs quickly emerged as the best-selling brand and in 2013 constituted nearly half (44.1%) of overall sales. Although fruit-flavored and other flavored products experienced marked growth, unflavored and menthol e-cigarettes overwhelmingly dominated the market. Sales of single unit products (likely disposable e-cigarettes) increased by 216.4%, a much faster rate than multi-unit packs and cartridge refills.

Conclusions: In traditional U.S. retail channels, particularly the convenience store channel, sales of e-cigarettes continue to grow, with brands like blu and disposable products as the likely drivers. Given the rapidly-changing market, expanded surveillance is needed to monitor sales not only in traditional retail locations, but sales online and in specialty "vape shops," as well.

Introduction

Electronic cigarettes, commonly called "e-cigarettes," entered the U.S. market in 2007 and have swiftly become a $2.5 billion industry.[1] Prevalence estimates indicate that e-cigarette use has increased among U.S. adults and trial is particularly high among current smokers.[2–5] Indeed, a 2013 study found that one in two current and former adult cigarette smokers have tried an e-cigarette.[3]

In their early years of adoption, e-cigarettes were primarily sold over the internet or at mall kiosks, but the market later began consolidating into traditional retail settings such as convenience stores, drug stores, and grocery stores. Increasingly, e-cigarettes and similar products are also sold in small, independent "vape shops" that specialize in the devices and e-liquid. Although a proportion of e-cigarette sales still occur online and are increasing in the emergent "vape shop" channel, the traditional tobacco retail environment will likely remain a major distribution outlet due to e-cigarettes' potential appeal to smokers at the point of sale. Moreover, as tobacco companies continue to enter the e-cigarette market, they will likely leverage existing relationships with traditional tobacco retailers. In mid-2013, RJ Reynolds and Philip Morris began distributing their respective e-cigarette brands, VUSE and MarkTen, in select U.S. test markets.[6,7] Following Lorillard's purchase of blu eCigs in April 2012, blu distribution expanded from 10,000 to 136,000 retail outlets.[8]

The tobacco industry spends millions of dollars to secure prime placement of their products in stores;[9] in 2011, over $800 million was spent on point of sale marketing and promotional allowances in the traditional retail environment.[10] Increased marketing efforts may lead to brand differentiation and the emergence of brand leaders, factors which may influence uptake of those brands and e-cigarettes overall.[11] Also, some e-cigarette brands sell flavored varieties (e.g., "cherry") that could appeal to young people. Lastly, while the early e-cigarettes were largely of the "rechargeable" variety, the last few years have seen the emergence of low-cost disposable units, which promote "trialability," in traditional tobacco retail channels.

This study utilized market scanner data to describe changes in e-cigarette sales by product features (i.e., brand, flavors, and unit size) in four retail channels: convenience stores, drug stores, grocery stores, and mass merchandisers between 2012 and 2013. Additional analyses explored product features driving growth in the three top-selling brands.

Methods

Data Source

Data on e-cigarette sales in the United States between 2012 and 2013 were obtained from the Nielsen Company, an industry research firm that measures point-of-sale data in various retail outlets. Employing a proprietary, sample-based methodology, Nielsen generates representative sales estimates using a combination of in-store scanner equipment (i.e., barcode readers) and field audits for stores without scanner equipment.[12] This analysis used e-cigarette sales information from Nielsen's Convenience Track and All Outlets Combined channels, which include convenience stores (independent and chain), drug stores, food/grocery stores, and mass merchandisers (excluding Walmart, club stores like Sam's Club and BJ's, and dollar stores).

Detailed sales information, including total dollar and unit sales, is presented for each e-cigarette product by its Universal Product Code (UPC) number. Each UPC entry also describes product attributes, like flavor, parent company, brand, and "unit size" (i.e., how many nicotine-containing cartridges are sold with each product). Product type (e.g., "Cigalike," vapor/tank/mod [VTM], etc.), was determined based on brand. "Cigalikes" are defined as products that resemble cigarettes in shape and size and do not require the user to add their own "e-liquid," and constituted over 98% of all sales in our dataset. Between January 2012 and the end of December 2013, there were 499 unique UPCs, representing 67 unique brands, for which sales data were available.

Data Analysis

Sales data from all years and channels were merged into one master database and analyzed using SPSS (v.21.0). Due to relatively low sales in the food/grocery and mass merchandiser channels, these data were pooled into a combined food/mass category. Descriptive statistics highlighted sales totals and market share trends in each channel and for various product attributes like flavor, brand, and unit size. Percent growth in sales and market share change were also calculated for these same variables. A more focused analysis of the top-selling brands in these channels (blu, NJOY, and Logic) identified specific product features associated with those brands' observed sales increases. Dollar sales, rather than unit sales, were used to calculate market share to account for the extreme variation in e-cigarette product types (e.g., disposable units, refill cartridges, starter kits, etc.).

Nielsen's flavor descriptions were recoded into four groups: not flavored, menthol/mint, fruit, and other. Not flavored included any product that was tobacco flavored or had no flavor stated. Fruit included any flavor that referenced a fruit or fruit-like product (e.g., Peach, Strawberry Margarita). Other included flavors such as chocolate, vanilla, coffee, etc. Although Nielsen did not provide a variable for rechargeable versus disposable e-cigarettes, the unit size variable can generally be used as a proxy for these product types. Typically, units sold with one cartridge are disposable e-cigarettes (e.g., 1 count), while multi-cartridge units (e.g., 5 count) are usually starter kits or cartridge refill packs.

Results

Between 2012 and 2013, e-cigarette sales in the tracked channels more than doubled, increasing by 132.5% across all markets (Table 1). Although the food/mass channel experienced the fastest growth (202.4%), only 2.0% of all sales in 2013 were from food/mass retailers. Convenience store sales drove most of the overall growth and accounted for 81.9% of e-cigarette sales in 2013. Both blu and Logic experienced tremendous sales increases and emerged as the first and third best-selling brands, with 44.1% and 12.5% of the market share, respectively. NJOY also maintained strong sales, but fell from its position as the leading brand in 2012 to the second best-selling brand. Only two major brands, 21st Century Smoke and Mistic, saw decreases in sales during the study period. Of note, MarkTen and Vuse, the inaugural e-cigarette brand extensions of Philip Morris and RJ Reynolds, respectively, entered test markets in 2013 and during that time generated nearly $2 million in total sales.

While unflavored and menthol products continued to dominate the market and together comprised 94.0% of the overall market share in 2013, fruit flavored and other flavors gained market share from 2012 to 2013. The popularity of "1 count" products (typically disposable e-cigarettes) increased substantially: in 2012, these products made up less than half of all sales (49.8%) compared to over two-thirds of all sales (67.7%) in 2013. During the same period, "5 count" products (most likely cartridge refill packs or starter kits) grew at a much slower rate and lost market share.

Brand Analysis

The top three e-cigarette brands in 2013 (blu, NJOY, and Logic, respectively) all at least doubled their sales volume between years. However, each brand had unique features that were associated with most of its growth (Table 2). For example, the flavor and unit size distributions of blu products did not change between years, but the brand's sales shifted drastically between retail channels. Nearly 80% of blu e-cigarette sales occurred in drug stores in 2012, but by 2013, blu products were overwhelmingly purchased in convenience stores (73.0%). In fact, over 85% of blu's overall growth is attributable to its explosive growth in the convenience store channel. In the case of NJOY and Logic, most of their growth was attributable to shifts in unit sizes. "One count" products constituted 65.1% of NJOY sales in 2012 versus 86.4% in 2013. Conversely, Logic increased its sales of "5 count" products fourfold between years. In 2013, nearly half of Logic's sales in these channels were generated from cartridge refill packs.

Table 1. Characteristics of E-Cigarettes Sold in Convenience, Drug, and Food/Mass Channels: 2012 and 2013 Nielsen Scantrak

	2012		2013		Difference between 2012 and 2013	
	$ sales (in millions)	Market share (%)	$ sales (in millions)	Market share (%)	Percent growth (sales)	Change in market share
Total e-cigarette sales	273.6		636.2		132.5	
Channel						
Convenience	208.4	76.2	520.9	81.9	150.0	5.7
Drug	61.1	22.3	102.9	16.2	68.4	−6.1
Food/mass[a]	4.1	1.5	12.4	2.0	202.4	0.5
Brand						
Blu	52.5	19.2	280.7	44.1	434.7	24.9
NJOY	63.1	23.1	154.6	24.3	145.0	1.2
Logic	11.9	4.3	79.7	12.5	569.7	8.2
21st Century Smoke	42.9	15.7	37.2	5.8	−13.3	−9.9
Finiti/Fin[b]	15.8	5.8	20.5	3.2	29.7	−2.6
Nicotek	11.8	4.3	20.4	3.2	72.9	−1.1
Mistic	59.1	21.6	6.4	1.0	−89.2	−20.6
Vuse	0.0	0.0	1.3	0.2	n/a	0.2
MarkTen	0.0	0.0	0.6	0.1	n/a	0.1
Other	16.6	6.1	34.7	5.5	109.0	−0.6
Flavor						
Not flavored	170.0	62.1	376.2	59.1	121.3	−3.0
Menthol/mint	96.4	35.2	215.7	34.9	123.8	−0.3
Fruit	4.9	1.8	16.7	2.6	240.8	0.8
Other[c]	2.3	0.8	27.7	3.4	1104.3	2.6
Size[d]						
One	136.2	49.8	430.9	67.7	216.4	17.9
Two	19.1	7.0	20.8	3.3	8.9	−3.7
Three	22.4	8.2	30.0	4.7	33.9	−3.5
Five	85.0	31.1	133.2	20.9	56.7	−10.2
Six	9.3	3.4	10.0	1.6	7.5	−1.8
Ten	1.3	0.5	1.1	0.2	−15.4	−0.3
Other	0.2	0.1	10.1	1.6	4950.0	1.5

Note. Market share calculated based on dollar sales; standardized to 2013 dollars to adjust for inflation.
[a]Does not include Walmart, club stores, like Sam's Club, or dollar stores.
[b]Name changed between years.
[c]Includes flavors like vanilla, coffee, etc.
[d]The number of nicotine-containing cartridges sold with the product (one count products are most likely disposable e-cigarettes, products sold with more than one cartridge are most likely cartridge refills or starter kits).

Although the market share of fruit and other flavored products is relatively small, it is worth noting that blu was the dominant brand for sales of these flavors in both 2012 and 2013. More specifically, in 2013, 80.2% of all fruit flavored e-cigarettes were sold by blu. This is solely attributed to the brand's "Cherry Crush" cartridges. Blu's other flavored products (i.e., "Vivid Vanilla" and "Java Jolt") accounted for 89.1% of all sales in the other category in 2013.

Discussion

The rapid growth in e-cigarette sales in traditional tobacco retail channels between 2012 and 2013 was largely attributed to three major brands (i.e., blu, NJOY, and Logic) and occurred predominantly in the convenience store channel. Lorillard's acquisition of blu eCigs in April 2012 might explain that brand's shift to convenience stores and perhaps its precipitous sales increases and market dominance. Indeed, a recent study on e-cigarette advertising documented a near sevenfold increase in blu's expenditures after the acquisition.[11] Consistent with industry reports of high rates of trial and low rates of adoption, the majority of sales during this time period were for single unit products (i.e., disposables).[13] The Logic brand is a noteworthy exception; 5-count products (i.e., cartridge refills) drove most of its growth, indicative of repeat purchases. Despite media reports on the increasing popularity of flavored products, the vast majority of e-cigarette sales in these channels were for unflavored or menthol products.

Nielsen does not track every e-cigarette retail outlet; as such, this study has limitations that necessitate cautious interpretation of the findings. First, online sales and sales in tobacco stores and "vape shops" are not included in Nielsen's sampling frame and the products sold in these channels differ. At the time of writing, most e-cigarette products sold in traditional tobacco retail outlets are "Cigalikes", although brands like NJOY and Fin have introduced VTM products. "vape shops," however, offer a wider selection of e-cigarettes as well as VTMs, which allow users to add their own "e-liquid" to the devices.[14] Because these venues enable customization of e-cigarette flavoring, the proportion of flavored product sales in the "vape shop" channel may be higher than in traditional retail channels. Financial analysts estimate that by mid-2014, internet and "vape shop" sales represented 30% and 23%, respectively,

Table 2. Product Attributes of Top-Selling E-Cigarette Brands in Convenience, Drug, and Food/Mass Channels: 2012 and 2013 Nielsen Scantrak

	Blu				NJOY				Logic			
	2012		2013		2012		2013		2012		2013	
	$ sales (millions)	Market share (%)	$ sales (millions)	Market share (%)	$ sales (millions)	Market share (%)	$ sales (millions)	Market share (%)	$ sales (millions)	Market share (%)	$ sales (millions)	Market share (%)
Total e-cigarettes sales	52.5		280.7		63.1		154.6		11.9		79.7	
Channel												
Convenience	10.4	19.8	204.9	73.0	60.8	96.4	146.3	94.6	11.3	95.3	78.2	98.1
Drug	41.3	78.7	72.0	25.7	2.2	3.5	7.3	4.7	0.1	1.2	0.4	0.5
Food/mass[a]	0.8	1.5	3.8	1.4	0.1	0.2	1.0	0.6	0.4	3.6	1.1	1.4
Flavor												
Not flavored	35.0	66.7	171.2	61.0	36.1	57.2	97.4	63.0	6.3	53.5	35.9	45.0
Menthol/mint	11.7	22.3	77.1	27.5	27.0	42.8	57.2	37.0	5.5	46.5	43.8	55.0
Fruit	3.7	7.0	13.4	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[b]	2.1	4.0	19.0	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Size[c]												
One	40.2	76.6	216.7	77.2	41.1	65.1	129.3	83.6	10.3	86.4	35.0	43.9
Two	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.9	6.5	8.2
Three	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.0	0.0	0.0	0.0
Five	12.3	23.4	54.5	19.4	22.0	34.9	24.7	16.0	1.2	10.7	38.2	47.9
Other	0.0	0.0	9.5	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note. Market share calculated based on dollar sales; standardized to 2013 dollars to adjust for inflation.

[a]Includes food/grocery stores and mass merchandisers (excluding Walmart).

[b]Includes flavors like vanilla, coffee, etc.

[c]The number of "e-liquid" cartridges sold with the product (one count products are most likely disposable e-cigarettes, products sold with more than one cartridge are most likely cartridge refills or starter kits).

of the total e-vapor market.[1] It should, however, be noted that the methodology used by analysts to estimate sales in various channels, including the internet, has not been disclosed nor validated. Second, sales data for Walmart and club stores were not available in our dataset. It is possible that products in these channels differ from the products in our analysis. However, Sam's Club (owned by Walmart) currently sells only brands found in our dataset (i.e., blu, NJOY, FIN, Mistic, MarkTen, VUSE), suggesting that trends by product features would likely be similar, although brand market share may differ.[15] Indeed, sales of Mistic considerably decreased from 2012 to 2013 in this analysis, but it was the top brand at Walmart in 2013.[16] Third, the market is rapidly changing, and "current" sales estimates quickly become outdated. By the second quarter of 2014, for example, Logic overtook NJOY as the number two brand in all tracked channels.[17] Similarly, rapidly-evolving product designs will likely alter the market in the near future. As previously stated, NJOY recently introduced its new VTM system, perhaps signifying a trend in next-generation vapor products becoming more mainstream.[18] Lastly, brand consolidation and divestment may also influence the e-cigarette marketplace in the coming years. RJ Reynolds, after acquiring Lorillard in mid-2014, sold the blu eCig brand to a smaller tobacco company, Imperial Tobacco Group, perhaps to focus on the development of Vuse as a brand leader.[19]

Despite limits on the generalizability of this study, the findings reveal popular product characteristics in retail channels experiencing rapid growth. A better understanding of the marketplace can provide insight into how potential Food and Drug Administration (FDA) deeming regulations may influence sales. Tobacco industry leaders RJ Reynolds and Philip Morris have already begun to market and distribute VUSE and MarkTen in these traditional tobacco retail channels; careful attention to sales in these outlets will be vital given the companies' historical dominance in the tobacco marketplace. Future efforts are needed to better capture all e-vapor sales, including sales occurring online and in "vape shops," in order to monitor the full range of products available to consumers in a rapidly changing and increasingly diverse and innovative marketplace. To better understand how consumers use e-cigarettes, it is essential to know what they are using and develop appropriate survey measures to assess use.

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Declaration of Interests

None declared.

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References

1. Wells Fargo Securities. *Equity Research: Tobacco-Nielsen C-Store Data-e-cig $ Sales Decline Moderates*. Wells Fargo Securities; 2014.
2. King BA, Alam S, Promoff G, Arrazola R, Dube SR. Awareness and ever use of electronic cigarettes among U.S. adults, 2010–2011. *Nicotine Tob Res*. 2013;15:1623–1627.
3. Giovenco DP, Lewis MJ, Delnevo CD. Factors associated with e-cigarette use: a national population survey of current and former smokers [published online ahead of print 2014]. *Am J Prev Med*. doi: 10.1016/j.amepre.2014.04.009.
4. Regan AK, Promoff G, Dube SR, Arrazola R. Electronic nicotine delivery systems: adult use and awareness of the 'e-cigarette' in the USA. *Tob Control*. 2013;22:19–23.
5. Pearson JL, Richardson A, Niaura R, Vallone DM, Abrams DB. E-cigarette awareness, use, and harm perceptions in US adults. *Am J Public Health*. 2012;102:1758–1766.
6. Breaking news: R.J. Reynolds Vapor launches 'VUSE' digital vapor cigarette. Convenience Store Decisions. 2013. http://www.csdecisions.com/2013/06/06/r-j-reynolds-vapor-launches-vuse-digital-vapor-cigarette/. Accessed July 7, 2014.
7. Chudgar S. Altria to launch MarkTen e-cigarette in Indiana. Advertising Age. 2013. http://adage.com/article/news/altria-launches-markten-e-cigarette-indiana/242043/. Accessed July 7, 2014.
8. Lorillard 2013 annual report. Lorillard. 2013. http://www.lorillard.com/wp-content/uploads/2014/04/Lorillard_Annual-Report_2013.pdf. Accessed July 8, 2014.
9. Feighery EC, Ribisl KM, Clark PI, Haladjian HH. How tobacco companies ensure prime placement of their advertising and products in stores: interviews with retailers about tobacco company incentive programmes. *Tob Control*. 2003;12:184–188.
10. Federal Trade Commission cigarette report for 2011. Federal Trade Commission. 2013. http://www.ftc.gov/reports/federal-trade-commission-cigarette-report-2011. Accessed July 9, 2014.
11. Kim AE, Arnold KY, Makarenko O. E-cigarette advertising expenditures in the U.S., 2011–2012. *Am J Prev Med*. 2014;46:409–412.
12. Consumer panel and retail measurement. The Nielsen Company. 2014. http://www.nielsen.com/us/en/nielsen-solutions/nielsen-measurement/nielsen-retail-measurement.html. Accessed July 7, 2014.
13. Reynolds American: Transformation through innovation. Reynolds American. 2013. http://files.shareholder.com/downloads/RAI/2864866953x0x707287/38bb7b2d-ab67-4192-b3e1-753b8c2223c9/Investor%20Day%202013%20Print%20PDF.pdf. Accessed July 9, 2014.
14. Lee YO, Kim AE. 'Vape shops' and 'e-cigarette lounges' open across the USA to promote ENDS [published online ahead of print 2014]. *Tob Control*. doi: 10.1136/tobaccocontrol-2013–051437.
15. Electric cigarette product listing. Sam's Club. 2014. http://www.samsclub.com/sams/electric-cigarette/3210101.cp?altQuery=&rootDimension=4210101&navAction=push. Accessed July 10, 2014.
16. Mistic top selling e-cig brand at Walmart. Business Wire. 2013. http://www.businesswire.com/news/home/20131218006220/en/Mistic%C2%AE-Top-Selling-E-Cig-Brand-Walmart#.U5HwGvmwLYg. Accessed July 7, 2014.
17. Wells Fargo Securities. *Equity Research: Vapor - NJOY's New Product Line Positions it Ahead of the Pack*. Wells Fargo Securities; 2014.
18. New NJOY products will 'bring vape national': Herzog. CSP Daily News. 2014. http://www.cspnet.com/category-news/tobacco/articles/new-njoy-products-will-bring-vape-national-herzog. Accessed July 8, 2014.
19. Mangan D. Feeling blu? E-cig company spun off in major tobacco deal. CNBC. 2014. http://www.cnbc.com/id/101837775. Accessed November 18, 2014.