ELECTRONIC CIGARETTES IN ASIA
A Review of Promotions and Availability

May 2014

ACKNOWLEDGMENTS

EXECUTIVE SUMMARY

Electronic cigarettes or **e-cigarettes** are the most popular form of electronic nicotine delivery systems (ENDS) that take the form and shape of a cigarette but are operated by a battery and involve heating a concoction of chemicals, usually called e-liquid or e-juice, to produce a flavor and vapor. They may or may not contain nicotine and are aggressively marketed as a smoking-cessation aid despite insufficient scientific evidence to date on their efficacy as cessation devices. Notwithstanding this and the lack of evidence on their safety to users (commonly referred to as vapers) and on safety of exposure to secondhand vapors or e-cigarette emissions, many industry-led researches claim that they are safe or safer than regular cigarettes because it does not contain the same chemicals present in the combustible cigarettes or toxins in secondhand smoke -, and recommend them as part of a tobacco harm-reduction strategy. The few independent researches that are available have, thus far, been inconclusive as to the product's safety. In fact, some literature shows that the likelihood of harm from ENDS, either by directly using it or through inhalation of its vapors, is potentially high, although less than in traditional cigarettes.

While e-cigarettes have been commercially available since 2005, their sale and use have increased rapidly in recent years; the e-cigarette business is expected to soar up to US$10 billion by 2017. Because of this, the top four transnational tobacco companies, Philip Morris International, British American Tobacco, Japan Tobacco International, and the Imperial Tobacco Group, have already bought into the e-cigarette business and are promoting and marketing their e-cigarette products in similar ways as their tobacco products. Consequently, although it is well established that tobacco companies' interests are diametrically opposed to public health, their getting involved in the e-cigarettes business creates a conflict of interest situation in case governments intend that ENDS would serve a public health purpose, as the e-cigarette industry proposes.

This report documents how e-cigarettes are promoted and sold in selected countries/ jurisdictions in the region, and is intended to inform policy makers on points of regulation in order to deal with the proliferation of e-cigarettes in the market. Because e-cigarettes are known to be widely available online and in specialty retail shops, Internet searches and observational studies were carried out in five (5) Asian countries/jurisdictions, namely, Hong Kong, Japan, Malaysia, Philippines and Thailand.

Japan and Hong Kong have banned nicotine-containing e-cigarette, Thailand has expressly banned the sale of e-cigarettes, Malaysia has a ban on imitation cigarettes but not e-cigarettes, while Philippines has no applicable ban on the product. ENDS are widely available even in countries where they are purportedly banned. The observational surveys in countries showed that ENDS are sold in general stores, specialist stores, or mobile booths.

Types of promotions offered in these stores include price cuts (discount offered for multiple buys), coupons (ticket that can be exchanged for discount or rebate), and bundling discounts (buying e-liquid and e-cigarette device together).

Information and warnings on labels vary among countries and across product types. Of note is that e-liquid labels typically indicate nicotine content (mg or %), but overall information gaps are observed in terms of ingredients, handling instructions, health warnings, toxicity warnings, safety seals, government approvals, manufacturer's information and other details usually present in consumer products.

Because of the insufficiency of information found on product packages and labels, consumers are likely to turn to other information sources, such as the Internet where accuracy of information is

not guaranteed. This report shows that most of the information in the internet are provided by profit organizations through e-commerce sites and by users through user generated sites like blogs and forums.

Governments should take further regulatory action in addition to declaring the legal status and harms of e-cigarettes. Whether a ban or some form of strict regulation is undertaken, regulatory efforts should focus on specific areas of concern in order to protect the population from the both the immediate and potential harms of ENDS:

A. **Manufacturers, Suppliers, Distributors, and Retailers:** Governments should require licenses for all suppliers and manufacturers of ENDS within the country's jurisdiction, even those that are producing only for export, and where possible, require them to pay a bond for potential future harms. Internet sales must be banned and existing e-commerce laws must be utilized to implement this ban.

B. **Advertising or Promotional Claims:** Governments should be prepared to find ways to counter misleading information in the internet by providing balanced information and enforcing consumer protection laws including in the online environment.

C. **Safety Seals and Government Approval:** Even before a complete regulatory framework is developed for ENDS (which can take a long time), governments should recognize that e-liquids are already widely available in the market, including through online access, and should take immediate action to protect consumers and the public from exposure to dangerous substances contained therein. In order to minimize the risk involved in mishandling toxic substances, governments should develop strict measures to limit the availability of and require proper marking of any liquid that contains propylene glycol, a key ingredient in most e-liquids.

D. **Nicotine Claims**: When considering ENDS regulation, governments must be conscious about their own capacity to test samples of a wide array of e-liquids for nicotine content. Practically all e-cigarettes, including those that claim to have no nicotine, actually contain nicotine. If there is no capacity to repeatedly undertake the countless tests and inspections, then the better option to a partial ban or a ban only for nicotine containing e-cigarettes, is to prevent the proliferation of e-cigarettes in different outlets/stores by restricting access or accrediting/ licensing retailers in addition to a rigorous approval process.

E. **Flavors:** Governments should immediately ban flavoured e-cigarettes as these do not have any beneficial health effect and could potentially be the gateway for the youth to start smoking. Enforcement for this type of regulation will be less challenging than regulating the content of the product because anyone with olfactory senses would be able to detect a violation. Civil society and the private sector can be engaged to assist in monitoring the presence of flavoured e-liquids in the market.

F. **Use in Public Places:** Regardless of the policy direction taken with e-cigarette product regulation, governments should immediately undertake a ban on the public use of e-cigarette for the protection of the general public and for purposes of tobacco control, particularly, the protection from second hand smoke (particularly against particulate toxins that can enter the lungs) and the prevention of further youth uptake. A number of e-cigarettes supporters also agree that vaping in public places should not be allowed and that e-cigarettes should be regulated just like tobacco products.

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I.   Introduction

Electronic cigarettes or **e-cigarettes** are the most popular form of electronic nicotine delivery systems (ENDS) that take the form and shape of a cigarette but are operated by a battery and involve heating a concoction of chemicals, usually called e-liquid or e-juice, to produce a flavor and vapor. They may or may not contain nicotine, and are aggressively marketed as a smoking cessation aid despite insufficient scientific evidence to date on their efficacy as cessation devices.[1] Available since 2005, they have rapidly gained popularity. Over 200 companies currently manufacture e-cigarettes, which vary widely in terms of quality and type. The bulk of e-cigarettes sold in the world are manufactured in China and exported to other countries. Throughout this document, ENDS and e-cigarettes have been used interchangeably.

Currently, the estimated worth of the e-cigarette industry is about US$2 billion globally;[2] it is expected to soar up to US$10 billion by 2017. The major transnational tobacco companies, including the Philip Morris International (PMI), British American Tobacco (BAT), Japan Tobacco International, and the Imperial Tobacco Group have already acquired the e-cigarette businesses. In 2013, PMI stated that entering into the e-cigarette business would be "the single greatest growth opportunity for us," referring to e-cigarettes as "reduced-risk products" that would provide smokers "the taste, sensory experience, nicotine delivery profile and ritual characteristics that match as close as possible to those of cigarettes."[3] BAT introduced its e-cigarette Vype in the UK last year,[4] while Imperial Tobacco has announced plans to launch two (2) electronic cigarettes in 2014.[5]

While e-cigarettes are growing in popularity in many parts of the world, there is little published literature on e-cigarettes in the region, particularly on the types of ENDS, their availability, or how they are advertised, promoted, and sold. Promotions for e-cigarettes are mainly done online; a typical online advertisement claims that e-cigarettes are affordable, available, and delivered with free shipping to buyers. Hence, this study also delves into how e-cigarettes are promoted online, details of online advertising claims, and how and where they are retailed in the five (5) identified Asian countries/jurisdictions. It also describes the popular brands, flavors, packaging, and labeling of e-cigarettes. Finally, this report addresses policy implications and recommends strategies for effective product regulation for e-cigarettes.

II.   Literature Review

A meta-analysis of English language articles on e-cigarette awareness and use has reported a significant increase in awareness from 16% in 2009 to 58% in 2011, and an increase in use from 1% to 6% for the same period.[6] The e-cigarette industry is comprised of both independent e-cigarette companies and, more recently, major tobacco companies, such as Lorillard and Imperial Tobacco.[7] Lorillard's own "blu™ eCigs" accounted for much of the company's 4.2% growth in 2012.[8] In addition, due to the uncertainty as to how e-cigarettes will be classified (i.e., either as drug devices or as tobacco products)—which in turn affects how the devices can be advertised—debates over e-cigarette marketing are likely to intensify in the coming years.[9]

Because they are not producing tobacco smoke, e-cigarettes are heavily marketed as both a smoking-cessation tool and as a sustained-use alternative to combustible tobacco (poly-use), thereby enabling users, in the process, to circumvent smoke-free policies. Media reports in the UK noted that "e-cigarettes are introduced as a way to 'beat', 'get around' or 'dodge' the smoking ban, and descriptions highlighted that e-cigarettes may be used indoors, often emphasizing the legality of this by using phrases such as 'inside the law'."[10] Moreover, aside from promoting e-cigarettes as smoking-cessation and healthier-alternative products, they are also advertised as

alternative to cigarettes or "lifestyle product" a marketing strategy that can also appeal to youth and children.[7] The UK, which has the most advanced legislation to date, classifies e-cigarettes as consumer devices, placing related advertising under the guidelines of its Committee of Advertising Practice (CAP) and Broadcast Committee of Advertising Practice (BCAP).[7] An observational study of in-store marketing in London revealed that 50% of small stores selling e-cigarettes had movable point-of-sale (POS) marketing displays. Due to the widespread availability of e-cigarettes and advertising mimicking traditional smoking behavior, its authors questioned "whether e-cigarettes are renormalizing smoking" "after decades of work to de-normalize smoking."[11]

The regulation of e-cigarette imports, sales, and advertising varies greatly across countries. For instance, in the United States, the Food and Drug Administration (FDA) has been unable to regulate ENDS, owing to a Court of Appeals decision preventing regulation if ENDS "are not marketed for a therapeutic purpose."[12] However, US FDA has recently outlined its plan to regulate e-cigarettes as an extension of the tobacco control regulation law.

There are a few published research articles on the safety of e-cigarettes, their efficacy as a smoking cessation tool, and their use in smoke-free environments. Initial research has noted that there are often misleading and unsubstantiated purported health claims.[10] A research based on e-cigarettes confiscated by the Immigration and Checkpoints Authority of Singapore (where importation, distribution, and sale of e-cigarettes are banned) revealed inconsistencies between actual nicotine content and the amount advertised. Specifically, there were detectable amounts of nicotine in products purported to be "nicotine-free."[13] Furthermore, inadequate or erroneous labeling and health warnings were noted. Trichounian and Talbot found problems with the build quality of various e-cigarettes brands, including leaking cartridges, which may pose a health hazard from spilled nicotine being absorbed through the skin.[14] Both researchers called for greater regulation of manufacturing and advertising/labeling of e-cigarettes.

There is also limited research on the industry's marketing practice, which is primarily online and unregulated. E-cigarettes have a large online presence that includes both general product information and sales channels. They have an established presence on social media sites, such as Facebook and YouTube, where both e-cigarette company-produced videos and user videos are posted. The use of social media, celebrity endorsements, and online promotions, in conjunction with attractive packaging and flavors, also underlies the targeting of young people.[15] Sponsorships deals are placing e-cigarettes in the spotlight with e-cigarette companies[16] sponsoring football teams in the UK and IndyCar teams in the US.[6]

Health officials note that there is a risk that e-cigarettes can open the gateway for young people to begin smoking conventional combustible cigarettes. US federal research indicates that use of e-cigarettes by young people is increasing, with the percentage of students from grades 6 to 12 more than doubling from 3.3% in 2011 to 6.8% in 2012.[17] Legislation on age requirement to be allowed to purchase e-cigarettes varies among states; young people generally have easy access to e-cigarettes, which are freely available online and in-store.

Additionally, e-cigarette companies have paid advertisements running on popular search engines, such as Google, Yahoo, and MSN.[18] E-cigarette online search queries have grown rapidly[19]—a trend that the industry is clearly aware of and will exploit to maximize their sales potentials. Two (2) studies have examined the online presence of e-cigarette manufacturers and vendors, including the use of affiliate marketing, which can enable sellers to distance themselves from erroneous or misleading claims[10] [17]. A research has noted that e-cigarette advertising in the US is primarily done through print, television, and e-mail. Of these print adverts, the primary themes are "implied use for harm reduction, or as an alternative to cigarettes (dual use) and often incorporated the themes of individuality, sociability, and sexuality."[20]

Given the heavy use of online communication to inform and sell e-cigarettes and the promotion of e-cigarettes as a "lifestyle product," a snapshot of the online promotional landscape should be analyzed to understand the methods and claims of e-cigarette manufacturers and vendors.

III.   Research Objectives

The objectives of this research are the following: (1) to document how e-cigarettes are promoted and sold in five (5) Asian countries/jurisdictions, namely, Hong Kong (China), Japan, Malaysia, Philippines, and Thailand; and, (2) to inform policy makers on strategies for the effective regulation of ENDS.

Because e-cigarettes are known to be widely available online and in specialty retail shops, Internet searches and observational studies were carried out in the said countries/jurisdictions

An Internet search or an observation of top-ranking websites was conducted:
- to reveal the types of information shown online for e-cigarettes;
- to provide a profile of the sellers online; and,
- to identify the popular forums and to check for commercial interests.

In addition, an observational survey was designed to document the typical characteristics of the "most popular" types of ENDS in the market and to provide examples of how they are sold and promoted in the five (5) identified countries/jurisdictions.

IV.   Methodology

a. Observation of Top-Ranking Sites

The methodology for the online search assumed that common terms for ENDS would most likely be searched by the target market for e-cigarette. It also assumed that the first page results yielded by an online search of key terms would reveal the type of information a person searching online would be faced with.

Because Google is the most widely used search engine in the five (5) subject territories,[21] it was used to determine the top-ranking sites. The following key words were used for the online search: "e-cigarette," "e-liquid," and "vaping." Other derivatives of these words were generated through Google Trend,[22] and this yielded terms, such as "ecig," "e-cig," "ecigarette," "e-cigarette," "vape club," "vape," "vaping club," and "vaping forum."

Specifically, the research team looked for information on:
A. **ENDS** by using the search terms "ecig," "e-cig," "ecigarette," "e-cigarette"
B. **E-liquid** by using the search terms "eliquid" and "ejuice";
C. **Stores** selling ENDS by using the search terms "ecig shop," "ecig promo," "ecig store," and "e-cig buy"; and,
D. **Forums** related to ENDS by using the search terms "ecig forum," "e-cig forum," "ecigarette forum," "vape club," "vape, vaping club," and "vaping forum."

Since site visitors typically visit the higher ranked sites on the search results page, sites appearing on the first search results page are classified in this report as the "most popular." The first results pages of the Google search for these seventeen (17) key terms were analyzed. The duration of the online search was done from 1 to 15 February 2014.

Sites were then recorded in a spreadsheet and categorized into:

    A. **Promotional or selling sites**, such as e-commerce sites, corporate or organizational sites;

    B. **Sites with user-generated content**, such as social networking sites (e.g., Facebook, Twitter), forum, blog, or user-generated content sites (e.g., Wikipedia);

    C. **News/reports** include content sites and online magazines (e.g., webmd, how stuff works), and news sites (e.g., CNN, BBC); and,

    D. **Educational sites** include sites of government agencies, and resource sites of educational institutions.

The categorization reflects the level of reliability and objectivity of information available on the website. It also manifests the level of accountability of those providing the information. To illustrate, it can be assumed that government sites would be more reliable and objective than promotional sites when it comes to information relating to product safety and effectiveness. News sites, like CNN or BBC, would be more accountable for information they provide than individual contributors or user-generated content sites, such as blogs and forums.

The contents of promotional or selling sites were analyzed in terms of types of claims made, and reviewed according to the typical claims made about e-cigarettes such as safety,[1] efficacy as smoking-cessation tool,[2] and use in smoke-free environment.[3]

The search was generally undertaken using google.com. However, in some cases such as in determining online stores and brands available online in a specific country, the local google domain name is used (i.e., by using google.ph for Philippines, google.my for Malaysia, etc.) In these cases, Google Translation was used to translate sites that are not in English.

b. In-Country Observations at Points of Sale

Current focal points of SEATCA's tobacco industry surveillance project and contacts in these countries were tapped to conduct a mini-field survey or "in-country survey" in the form of observational survey. Data on brands, product types, availability, and other pertinent product information were gathered at points of sale. An interview guide was also used in interviewing sales personnel. Data collected include the following:

    1. Places selling e-cigarettes;
    2. Types and brands of e-cigarettes;
    3. Promotional activities;
    4. Price; and,
    5. Manufacturers of e-cigarettes.

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[1] e.g .The information indicates that the product is safer than regular tobacco
The information does not make any claims about the safety of the product
The information indicates that the product is not safer than regular tobacco
A mix of information about safety (in case the information reflects a debate or opposing views)
[2] e.g. The information indicates that the product helps quitting smoking
The information does not make any claims about whether the product helps quitting smoking
The information indicates that the product does not help quitting smoking
A mix of information about efficacy (in case the information reflects a debate or opposing views
[3] E.g. The information indicates that the product can, should be used or has been used in places where smoking is banned
The information does not indicate whether the product can, should or has been used in places where smoking is banned
The information indicates that the product cannot or should not be used in places where smoking is banned
A mix of information about use in smoke free environments (in case the information reflects a debate or opposing views)

V.   Results: Observation of Top-Ranking Sites

From the first results pages of each Google search, 178 websites in total were identified, reviewed, and categorized. Some sites appeared several times using different key words; the number of "unique sites" or sites that are left after removing duplicates were then analyzed. The subset for these websites included searches for information on e-cigarettes, e-liquid, stores, and forums. Results for each are shown below.

a. Information on E-Cigarettes

E-commerce sites and sites with user-generated contents are clearly the preferred platform for e-cigarette promotions.

Table 1: Results of Key Word Search for "ecig," "e-cig," "ecigarette"

Category	Types	Count	Sites Found
Promotional/ selling sites	E-commerce site	14	ecigzone, madvapes, provape, totally wicked, ukecigstore, volcano ecigs
	Corporate/ organizational site	0	
User-generated content	Social networking	0	
	Forum	4	ecigarette forum
	Blog	1	
	User-generated content/ opinion site	6	Wiki, Daily Beast
News / reports	Content site/ online magazine	5	howstuffworks, webmd
	News site	13	BBC, NY Times, Guardian, dnainfo
Educational site	Government or educational institution site	0	
	Others	3	Google search news page, Yahoo finance
	Total	42*	

28 unique sites

Results showed that out of forty-two (42) sites churned out by the online search process, fourteen (14) are promotional (e.g., e-commerce sites), eleven (11) user-generated contents, and eighteen (18) news and reports. In other words, majority (25) are considered subjective/biased information compared to relatively-objective information of news and reports (18). On the first page of the search results, there were no news reports or information from government or established research institutions from which information can be verified.

An e-commerce site or a site that sells e-cigarette typically contains product information, shows a variety of products, has testimonials of satisfied users, and is equipped with payment facilities (e.g., online payment). Some sites visited also has a forum page on which visitors can interact.

b. Information on E-Liquid

The assumption is that the terms "e-liquid" or "e-juice" would likely be searched by anyone interested to know more about e-cigarette refills, or anyone seeking further information on e-

cigarette contents. Table 2 shows the types of sites yielded by the online search process.

Table 2: Results of Key Word Search for "e-liquid" and "e-juice"

Category	Types	Count	Sites Found
Promotional/ selling sites	E-commerce site	18	liberty fights, madvapes, smokshop, totallywicked eliquid, virginvapor, zeusejuice, mistereliquid
	Corporate/ organizational site	0	
User-generated content	Social networking	0	
	Forum	0	
	Blog	1	eliquidco
	User-generated content/ opinion site	1	Wiki
News / reports	Content site/ online magazine	0	
	News site	0	
Educational site	Government or educational institution site	0	
	Total	20*	

9 unique sites

The results revealed that out of twenty (20) websites yielded by the search, eighteen (18) are promotional and two (2) are user-generated content which are all sources of subjective/biased information. There were no news reports or information from government or established research institutions on the first page of search results.

This is a cause for concern because e-juice is extremely hazardous while information on its proper handling is not readily available. A couple of sites have warnings regarding the dangers of handling e-juice but these warnings are not prominent, oftentimes with minute fonts and blurred color found at the bottom of the webpage.

c. Information on Stores

Table 3: Results of Key word Search
for "ecig shop," "ecig promo," "ecig store," "ecig buy"

Category	Types	Count	Sites Found
Promotional/ selling sites	E-commerce site	31	Ecigpromo, ecigshop, ecig-shopfr, logicecig, govype, v2cigs, blucigs, ecigshopau, ecigsupply, ecigzone, electrictobacconist, eluminateecig, eversmoke, myvaporstore, provape, retailmenot, totallywicked-eliquid, ukecigstore, vaporlabsonline, vipeelectroniccigarette, ecigcrib, wordupecig, e-cigshop
	Corporate/ organizational site	1	Ecigshopmn[4]
User-generated content	Social networking	6	Facebook
	Forum	0	
	Blog	1	
	User-generated content/ opinion site	1	Wiki
Others		3	Google search news, bizjournal
	Total	*41	

36 unique sites

The key word search for "ecig," along with terms "shop," "store," "buy," or "promo," indicates an interest in purchasing, yielding the "most popular" or visible e-cig online stores. The search produced twenty four (24) unique shops, including what seems to be a chain of online shops in France and Australia (ecigshop.com).

Notably, six (6) Facebook pages appeared when searching for stores. These pages are being used to sell e-cigarettes although they do not have any online payment facility. They only provide an address where e-cigarettes can be purchased or where a person can be contacted to deliver the products.

A great majority (31 out of 41) are e-commerce sites. In general, each e-commerce site has any or a combination of the following features:
-    Showcase/gallery of variety of products;
-    Testimonials;
-    Payment method and policy;
-    Contact information and online contact form;
-    Location of shops;
-    Promotions such as coupons and discount prices, and
-    Membership system.

All e-commerce sites have a membership system, while some allow non-members to post

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[4] Notably, there is one corporate site, http://www.ecigshopmn.com/, a website of e-cig shop located in the US. It provides the physical address of the shop as well as information on a variety of available e-cigarettes and e-liquid products, but does not show the prices of these products or allow online transactions.

comments as guests. All ecommerce sites have price-related promotions such as coupons and price discount.

About half of the sites require age verification which is typically used to legally protect companies from liability from laws intended to prevent child access, however the age verification system used by the sample sites are easily bypassed therefore, weak and ineffective.

Notably, not all ecommerce sites sell both e-cigarette and e-juice; a few specialize in e-cigarette only or on e-juice only.

Figure 1: Sample of an E-Commerce Site Selling ENDS (Home page)
http://www.blucigs.com/
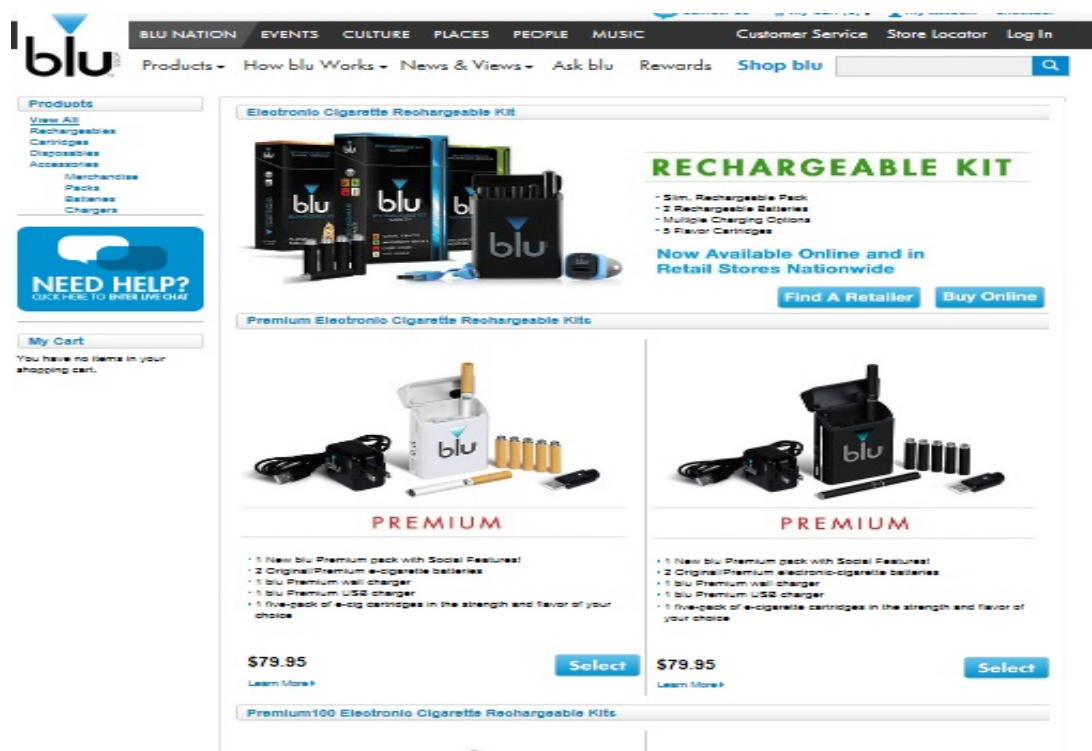
In the online shops or e-commerce sites, the most frequently mentioned marketing claim, including those made through "testimonials" of customers, is that e-cigarette can:
- be used more places than cigarettes and does not have strong smell like cigarette, and the smell will disappear sooner than cigarette
- help smokers to quit smoking; (primarily appears in user/customer testimonials e.g., some stores show testimonials how ex-smokers used e-cigarette to quit smoking and how they and their friends appreciate with the change.)

Some e-commerce sites claim that e-cigarettes:
- can help users to save money compared smoking cigarettes.
- does not need to contain nicotine (some e-liquid has 0% nicotine) and hence, it is safer than cigarette.
- are "cool and attractive"

The shops that appeared on the first page of the search are located primarily in the US, while some are located in Australia, France, Ireland, and UK. Local shops based on the subject

countries/territories do not appear in the google.com search, and instead appeared only when searching for e-cigarette shops under the local google domain. In searches using the local google domain, only a few locally based shops were found. US based shops comprise the majority of the sites found.

Table 4: Location of the "Most Popular"/ Highest Rank Online Shops for E-cigarettes based on online search

ID	URL	Location
01	http://ecigpromo.com/	USA, ecigpromo2013@gmail.com
02	http://e-cigshop.eu/	e-CigShop.eu 9 Rian Na Ri Ballycasey Shannon, Co.Clare Ireland
03	http://store.logicecig.com/	LOGIC Technology Development LLC, 615 S Livingston AveLivingston NJ07039
04	http://uk.govype.com/	CN Creative Ltd Phoenix Park Unit 1 Blakewater Rd Blackburn Lancashire BB1 5SJ
05	http://v2cigscouponcodes.org/	VMR Products LLC. 3050 Biscayne Boulevard # 8 Miami, FL33137-4153
06	http://www.blucigs.com/	Lorillard Tobacco Company, P.O. Box 21688 Greensboro, NC 27420
07	http://www.ecigshop.com.au/	E-Cig Shop, 8 Maxwell Drive Deeragun Queensland 4818 Australia
08	http://www.ecig-shop.fr/	ECIG-SHOP 3ème 69, rue Quincampoix 75003 Paris Métro Chatelet, Chatelet Les Halles, Etienne Marcel et Rambuteau.
09	http://www.ecigsupply.com/	21620 N 26th Ave suite 110 Phoenix, AZ US
10	http://www.ecigzone.co.uk/	SGP VENTURE LTD, LIVERPOOL, 42 GREENBANK DRIVE, United Kingdom.
11	http://www.electrictobacconist.co.uk/	The Electric Tobacconist Ltd, Rocket Park, Half Moon Lane, Pepperstock, Luton, LU14LL
12	http://www.eluminateecig.com/	Inter-Continental Trading USA Inc 1615 W Algonquin Rd, Mt Prospect, IL 60056, Estados Unidos
13	http://www.eversmoke.com	EverSmoke 1269 N Wood Dale Rd Wood Dale, IL 60191
15	http://www.myvaporstore.com/default.asp	32-30 62nd Street Woodside, NY 11377
16	http://www.provape.com/#	ProVape, Inc.14751 North Kelsey St., STE 105, PMB 199 Monroe, WA 98272
17	http://www.retailmenot.com/coupons/ecig	RetailMeNot, Inc. 301 Congress Avenue, Suite 700 Austin, TX 78701
18	http://www.totallywicked-eliquid.co.uk/products.html	Pillbox38 (UK) Limited Totally Wicked Stancliffe Street Blackburn Lancashire BB2 2QR United Kingdom
19	http://www.ukecigstore.com/	UK Electronic Cigarette Limited, 20-24 Broadwick Street, London W1F 8HT
20	http://www.vaporlabsonline.com/home.asp	Vapor Labs Garden Grove 11542 Knott St Ste 3 Garden Grove, CA 92841
21	http://www.vipelectroniccigarette.co.uk/	VIP, Must Have Ltd. Unit 14, Dale Street Industrial Estate, Radcliffe, Manchester, M26 1AD.
22	https://www.ecigcrib.com/default.asp	3027 Coon Rapids Blvd NW Minneapolis, Minnesota 55433-3400 United States
23	https://www.ecigshop.com/	Extreme Solutions Box 111 325 East Jimmie Leeds Rd, Suite # 7 Galloway, NJ 08205
24	https://www.wordupecig.com/	7136 SE Osprey St Hobe Sound FL 33455

Finally, when a similar search was done using the local Google domain in each of the identified countries/jurisdictions, a similar trend was observed:

1) Majority are promotional or user-generated content sites.
2) There are no educational/reputable research institutions from which their data can be verified.
3) Facebook is being used to provide information on where to buy the products.
4) E-commerce sites are mostly located in the US and other foreign countries. *(With the exception of Hong Kong which showed more manufacturer's websites that are based in China)*

In Hong Kong, more manufacturer sites appeared during the online search, providing wholesale, retail, and manufacturer's contact information, although without online payment facilities. Such e-juice manufacturers' sites that resulted from the search using google.co.hk, no warnings were found.

Figure 2: Sample Manufacturer's Site in Hong Kong[23]

d. Information on Forums Relating to E-Cigarette

Search terms used to find forums (i.e., "ecig forum," "e-cig forum," "ecigarette forum," "vape club," "vape, vaping club," and "vaping forum") yielded a total of 61 sites. First page results revealed that a few forum sites (such as http://www.e-cigarette-forum.com/forum) keep reappearing regardless of the various search term used. After removing duplicates, only eleven (11) forum sites were analyzed.

Table 5: Popular Forum Sites

	Site name	Link	Affiliation to group	Location	Advertisements	Membership	Comments
1	e-cigarette forum	http://www.e-cigarette-forum.com/forum	ECF Group	USA	Volcano e-cig	197,448 members	Claims to be neutral, with "honest reviews"[5]
2	Allaboute-cigarette	http://allaboute-cigarettes.proboards.com	AAEC hosted by ProBoards	USA[6]	pro-ENDS campaign	432 members 5,189 guests	-
3	Reddit	http://www.reddit.com/r/electronic cigarette	Reddit inc.	USA	-	50, 410 subscribers	-
4	Planetofthevapes	http://www.planetofthevapes.co.uk	Planet of the Vapes	USA[7]	App "ECIGNET" Ad is rotated	10,372 members	-
5	Vaportalk	http://www.vaportalk.com/forum	Whitney Group LLC	USA	AsianDating.com	23,680 members	
6	Forum-ecigarette	http://www.forum-ecigarette.com	None	France	pro-ENDS campaign "	59,045 members	Claims that ENDS can help people to quit smoking through an online survey[8]
7	Vapingforum	http://www.vapingforum.com	Owned by Shawn Gossman		E-liquid Ad, rotated	443 members	Claims that ENDS are used as alternative way to smoking[9]
8	Ukvapers	http://ukvapers.org	UK Vapers	UK	pro-ENDS campaign "	18,605 members	Focuses on e-liquid, not ENDS; offers UKV Awards
9	Thevapingforum	http://www.thevapingforum.com	None		pro-ENDS campaign	159 members	Claims that e-juice is safe by suggesting members to access information from a pro-ENDS group[10]
10	Vapersforum	http://www.vapersforum.com/forum.php?s=Be1fc5141c311de	None		-	24, 774 members	Claims that e-juice is safe through scientific studies on vaping
11	C9vforum	http://www.c9v-forum.com	None		pro-ENDS campaign	1,355 members	-

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[5] *"Welcome to ECF! We are the world's largest electronic cigarette website. Here you'll find a world of ecig information, discussion, everything for new and old users, honest reviews, and a whole lot more!"* – Retrieved from http://www.e-cigarette-forum.com/forum/ (last visited 03 May 2014).

[6] ProBoards, Inc. 20381 Lake Forest Dr., Ste. B2 Lake Forest, CA 92630

[7] 6840 65th St, Sacramento, CA 95828, United States

[8] Seventy-four percent (74%) replied "yes" to an online survey which asked if people can quit smoking after using ENDS. Retrieved from http://www.forum-ecigarette.com/ (last visited 03 May 2014).

[9] Vaping Forum is a free online message forum devoted to the discussion of using electronic cigarettes as an alternative to smoking. Retrieved from http://www.vapingforum.com/index.php?action=about (last visited 03 May 2014).

[10] *"The CASAA website is a fantastic resource of important information that will help YOU well on the way to finding THE FACTS about Vaping."* – Retrieved from http://www.thevapingforum.com/Thread-Resources-for-e-Cig-Vaping-Safety-knowledge (last visited 03 May 2014).

1) Some of the sites do not state directly if e-cigarette is safe, but provide discussion categories such as "Health and Safety" encouraging members to post their opinion on e-cigarette and e-liquid.
2) All the sites provide links to its social network sites, such as Facebook, Twitter and Youtube.
3) All "Pro-ENDS" campaign noted here refer to "We Support European Free Vaping Initiative"
4) Claims that are highlighted in the comment area refer to prominent messages found on the Home Page or first page of the Forum/ Discussion

Most of the forum sites have advertisements or are affiliated with companies. Possibly, the online community managers and administrators run these sites for profit. Many of these sites are housed in the US or UK.

In some cases, the Blog or Forum participant would refer to a scientific or pseudo-scientific research from a site or institution that is not reputable. In these researches, conclusions typically point to a strong support for e-cigarette use.

The largest forum, http://www.e-cigarette-forum.com/forum, which has almost 200 thousand members, is supported by over 50 suppliers. This site provides forum discussions on laws relating to e-cigarettes, being part of the e-cigarette consumer association, health effects, and device safety. The e-cigarette association promotes the right to use e-cigarette and encourages regulation instead of a ban on the product. Users worldwide are allowed to post in their own language as the forum provides an automatic translation tool through Google translate. Most experiences and testimonials shared in these sites are positive and tend to promote e-cigarettes (e.g., it has helped someone smoke less cigarettes; one can vape everywhere and people do not so much look at him/her like a bad person; tips on where one can buy e-cigarettes in a specific place or country). Some are just asking questions, like whether e-cigarettes are banned in a specific place or country. A few posts point to the need by the FDA to regulate e-cigarettes

Figure 3: List of Some of the E-cig Forum Suppliers

e. Discussion of Observation of Top Ranking Sites

Top ranking sites are mostly populated by e-commerce sites which promote ENDS and user generated content with unverified, inaccurate and, possibly, misleading information. Online communities (e.g., blog, forum) are also used in promoting e-cigarettes.

1. Online shops/E-commerce sites
Web research shows that sellers are plentiful and, in e-commerce sites, they consist of entities from the US or other countries that can be beyond the reach of local regulators or enforcement officers. Almost all of the top ranking e-commerce / online shops are based in the US or in other foreign countries (Australia, France, Ireland, UK). These sites promote membership and online communities and utilize price related promotions presumably to induce product trial.

Half of such sites include an ineffective age-verification system presumably as legal cover in jurisdictions where the site owner operates.

Despite the extreme toxicity of the e-liquid, practically all of sites do not provide warnings about the harms of e-juice/ e-juice handling. A few provide small and blurred warnings.

Online shop owners/ administrator's key selling points are commonly conveyed as "testimonials" from customers/ users. These points include positive experiences of smoking in public and quitting smoking. Other selling points include claiming that e-cigarettes are safer than traditional cigarettes and that vaping is cool and attractive. Marketing claims that are unsubstantiated and, possibly, misleading, such as "vape anywhere," "cheaper," "no nicotine," "helps smoker quit," are prevalent in promotional/e-commerce sites (mostly in the form of testimonials) and blogs, but not in educational/ government sites. The marketing claims of many US based e-commerce sites as to using freely in public places are contrary to many existing smoke free laws in the US. The health claims as to the effectiveness in quitting smoking are not allowed by USFDA unless specifically proven and accepted by the USFDA. These claims made in e-cigarette commercial sites are conveyed through "testimonials" of individuals thus, to a certain extent, allowing the companies to avoid legal responsibility for the statements.

2. Forum/Online Community
Online community or forum administrators are mostly affiliated with either advertisers or suppliers from the e-cigarette industry. Many purport to be an open and neutral exchange of information on e-cigarette; however, the sites most visible pages such as the home page or main discussion page provide positive information about e-cigarettes. A majority of experiences shared in these sites assumes the acceptability of e-cigarettes and tend to promote e-cigarettes such as discussions on how it has aid in quitting smoking; how one can vape everywhere; and tips on where one can buy e-cigarettes in a specific place.

Online community administrators of popular sites are sponsored by corporations that are part of the e-cigarette industry. However, those providing the information in such sites are individuals that can disassociate themselves with the e-cigarette suppliers or manufacturers. Hence, both suppliers and manufacturers are shielded from being held liable for false claims

f. Sample E-Commerce Websites

Figure 4: Main Page of an E-commerce site or online store for E-Liquid

Vape Club website with claims on safety, price, and convenience of products
(http://www.vapeclub.co.uk/)

This website claims that e-cigarettes are safer, more economical than regular cigarettes in the long term, and can be used anywhere including in smoke-free environment.

Figure 5: Forum and Testimonial Page of E-commerce site for E-cigarette
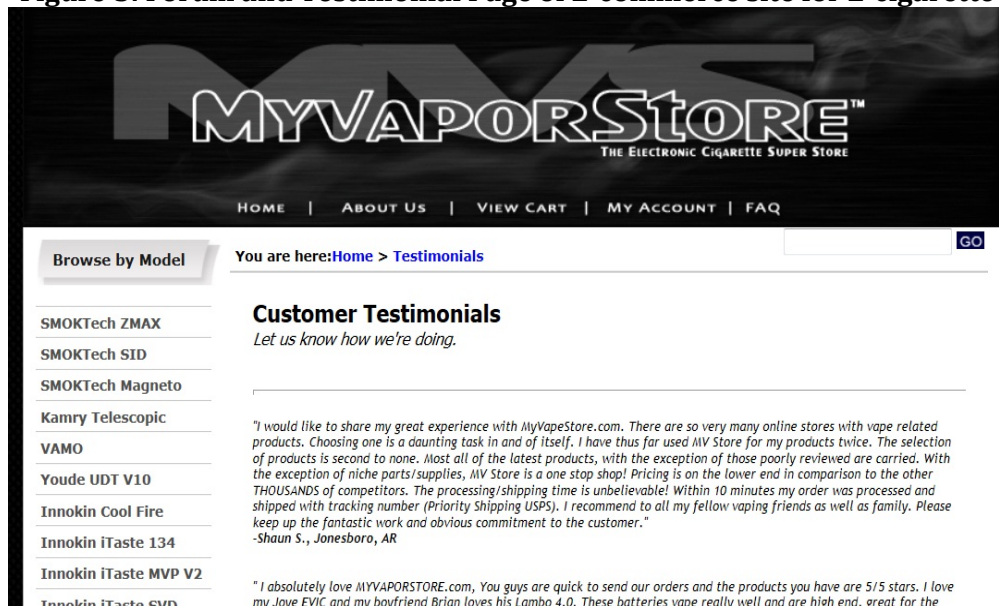
MyVaporStore website customer testimonial admiring store service and product quality.
"I would like to share my great experience with MyVapeStore.com. There are so very many online stores with vape related products. Choosing one is a daunting task in and of itself. I have thus far used MV Store for my products twice. The selection of products is second to none. Most all of the latest products, with the exception of those poorly reviewed are carried. With the exception of niche parts/supplies, MV Store is a one stop shop! Pricing is on the lower end in comparison to the other THOUSANDS of competitors. The processing/shipping time is unbelievable! Within 10 minutes my order was processed and shipped with tracking number (Priority Shipping USPS). I recommend to all my fellow vaping friends as well as family. Please keep up the fantastic work and obvious commitment to the customer."
(http://www.myvaporstore.com/Testimonials_s/43.htm)

Some websites such as the example above provide forums and testimonials to support e-cigarette usage and sales. These websites often verify that only users and buyers can participate by requiring information such as shipping address and product ordering history.

VI.   Results of Country Observations at Points of Sale (POS)

The surveyors chose at least two sites to observe. Researchers were also encouraged to search online for e-cigarette shops nearest their location. A total of twenty (20) shops were visited in the identified territories. The following is a breakdown of shops per city and the types of shops visited:

Table 6. Profile of Shops Visited

Territory/ City	Number of Shops Visited	General Location/Description	Type of Shops
Hong Kong: Mong kok, Causeway Bay	6	Shops located in department stores in crowded areas in Hong Kong. The shops show e-cigarette devices with other products, such as mobile phones.	Stand-alone stores, department store, specialty store (Shisha product)
Japan: Osaka	1	Large shop located in city area, along the crowded and shopping street in Osaka.	Specialty store
Malaysia: Penang	5	Shops located in big department stores (lower ground of Queensbay Mall and 2nd Floor of Prangin Mall), the shops have booth showing e-cigarette devices and starter kit together with watches.	Shoplot, booth
Philippines: Davao City, Bacolod and Manila	6	A shop named Denkat is located along the street exclusively selling e-cigarettes and e-liquid of different brands. Another shop is located in a shopping mall in Davao City, with the booth showing e-cigarette products brand VapeKing.	Specialty store for e-cig and e-liquid, stand-alone booth
Thailand: Konkhen	2	Shops located in city area, near fresh market. Although not in crowded area, the shop is noticeable, no sign showing e-cigarette is sold in the shop.	Temporary kiosk, online shop

In all territories covered by the research, the ENDS shops visited included stand-alone booths and temporary kiosks. In some territories, shops chosen included department stores and specialty stores.

a. Places Selling ENDS

This study does not provide an exhaustive list of where the ENDS are sold. However, based on the limited samples in all areas covered, it was observed that ENDS are usually available in stand-alone booths inside a commercial area. A common observation is that ENDS are often not seen together with regular cigarettes countering the claim that the product is intended as a substitute to regular cigarettes. In the Philippines, there are shops in malls selling lighters, all brands of cigarettes and they have already included few stocks of e-cigarettes and e-liquid.

In some territories, where researchers had more time to investigate or had chosen more samples, ENDS were also found in department stores such as Causeway in Hong Kong and

specialty stores, such as Kin-En-Ya shop in Japan. ENDS were not displayed prominently, in Malaysia and Japan. In these countries, ENDS were placed alongside other consumer products. For instance, ENDS were placed in the same shelf as books, beauty/cosmetic products, batteries, and other hobby items possibly as a marketing strategy to attract certain markets and to make these products widely available. Conceivably, retailers are finding creative ways to sell their products to their customers. This tactic is consistent with marketing e-cigarettes as a "lifestyle product."

Country researchers' online search for online shops revealed that ENDS are sold through Facebook pages or blogs providing product information, retailers' contact details, and purchase process. In Thailand, for example, a sales person created an online forum[11] and a Facebook page where he can interact with potential clients and set up face-to-face meetings and transactions.

b. Brands and Types of ENDS

E-cigarette devices come primarily in three (3) forms: (1) one that looks like a disposable cigarette; (2) mid-size; and, (3) Advanced Personal Vaporizer or AVP, which resembles a pipe or has a larger body.[12] The latter is designed to contain more e-liquid and to lessen the frequency of refilling. These devices come with accessories, such as chargers, extra batteries, stands, and adaptors. A variety of e-liquid that comes in small vials is compatible with any e-cigarette device. Hence, consumers are not expected to use a specific e-liquid or brand of e-liquid for a specific device. The e-cig device, e-liquid, and accessories combined constitute a typical "package" or "starter kit."

Over all, the most popular ENDS in the web are not necessarily most popular in stores.

Based on interviews conducted, retailers identified different brands as "most popular" in their respective countries. No single brand was deemed "most popular" or "most saleable" in more than one country.

Globally recognized brands of e-cigarette with the highest market share such as Njoy, Vapor (Krave), Metro, Smoker Friendly, Blu[13]are generally not deemed "most popular or saleable" in the local markets of Hong Kong, Japan, Malaysia, Philippines and Thailand. Most of these brands failed to appear on the first page during the search process using the local google domain except for google.jp (Metro, Blu) and googl.ph (Blu).

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[11] See http://forum.khonkaenlink.info/index.php?topic=16765345.msg8236241#msg8236241
[12] See, for example, http://www.switch-to-e-cig.com/E-cigarette-types.html and http://www.cigbuyer.com/types-of-e-cigarettes/
[13] http://www.statisticbrain.com/electronic-cigarette-statistics/

Table 7. Most Saleable Brands according to Shopkeepers

Territory/ City	E-cig Device Brands Named "Most Saleable"	E-liquid Brands Named "Most Saleable"
Hong Kong: Mong kok, Causeway Bay	LETIEO, NIL	LETIEO, True Smoker
Japan: Osaka	TaEco Fog	TaEco GIGA Liquid
Malaysia: Queensbay Mall, Prangin Mall	L-rider, Fantasia, E-Health	N/A
Philippines: Davao City	Denkat, Vape King	Denkat, Owpus, Vape Time, Vape King, Street Juice , Bamskilicious
Thailand: Konkhen	EVOD, HAKA, Telescope	Ovale (menthol), Ovale (Texas)

Notably, none of the brands named by retailers as "most popular" appeared prominently during the online search.

Table 8. Most Popular Brands Based on Online Search*

Based on a rapid online search of popular e-cig and e-liquid brands, the following brands frequently appeared.

Country	E-Cigarette	E-Liquid
Malaysia	Ego, V2Cigs, Gardiva	Vape Me, Digital Vaper, FeelLife
Hong Kong	JoyeTech, Ego, EVOD	Hangsen, FeelLife, Dekang
Japan	V2Cigs, Blucigs, Metro	EnJuice, JuicyEjuice, Zeus
Philippines	V2Cigs, Blucigs, Provape	EnJuice, JuicyEjuice, Zeus
Thailand	JoyeTech, EVOD, Innokin	Dekang, DIY e-liquid

* search using local google domain

Table 9. E-cigarette Top brands by Market Share

E-cigarette Brand	Market share
NJOY	32%
Vapor (Krave)	16%
Metro	6%
Smoker Friendly	3%
Blu	2%
Other	41%

*The source of this trade information does not clarify if the market share for e-cigarettes applies to e-juice.

For e-juice, there is insufficient information on the range of brands and sources. "House brands" have been reported in country surveys. For example, in Thailand, e-cigarette store owners repackage e-juice and place their own store name as the "house brand" for the e-juice.

c. Promotion and Advertising

For ENDS sold in shops, the variety of promotions and advertising observed includes price cuts,[14] coupon and group purchase options, and bundling.[15] Additionally, among the stores surveyed, in-store poster advertising of e-cigarettes was found across all countries, except in the Philippines. Other types of in-store advertising included billboards, banners, and pamphlets. All stores provided links to websites with information on e-cigarette devices.

Table 10. Promotions and Advertising Found in Surveyed Stores

Country	In-Store POS			Advertisement		Prevailing Policy	Online sale (based on country survey)
	Price Cut[16]	Coupon[17]	Bundling[18]	Poster	TV		
Hong Kong	✗	✓	✗	✓	✗	E-cigarettes containing nicotine are classified as licensable poison products and are prohibited.[19]	✓
Japan	✓	✗	✗	✓	✗	E-cigarettes with nicotine are banned because they are classed as unlicensed medical products.[20]	✓
Malaysia	✓	✓	✓	✓	✗	No ban on e-cigarettes	✓
Philippines	✓	✗	✓	✗	✗	No regulation on e-cig; not considered a tobacco product; in 1 city, use of e-cig is banned in Davao's enclosed places and public places[21]	✓
Thailand	✓	✗	✓	✓	✗	E-cigarette is banned[22]	✓

d. Price of ENDS

Prices of END products typically vary depending on quality and features, with cheaper ones not guaranteed to last long. On the other hand, the more expensive ones have a longer warranty, longer battery life, and larger cartridge for the e-liquid. In the region, typical price of a device is US$20 and above. This amount is higher than those offered online which ranges from US$6-US$30 for e-cigarette device and US$3-6 for 10ml e-liquid bottles. The relatively low online price accompanied by unrestricted online access tends to induce trials including by young people.

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[14] Discount offered for multiple purchases
[15] Discount offered for buying e-liquid and e-cigarette device together
[16] "Cutting the price of merchandise to one lower than the usual or advertised price" – Retrieved from http://www.thefreedictionary.com/price+cut (last visited 01 April 2014).
[17] "A ticket or document that can be exchanged for a financial discount or rebate when purchasing a product" – Retrieved fromhttp://en.wikipedia.org/wiki/Coupon (last visited 01 April 2014).
[18] "A marketing strategy that joins products or services together in order to sell them as a single combined unit" – Retrieved fromhttp://www.investopedia.com/terms/b/bundling.asp (last visited 01 April 2014).
[19] Retrieved from http://www.tco.gov.hk/textonly/english/infostation/infostation_04032009.html (last visited 01 April 2014).
[20] Retrieved from http://www.japantoday.com/category/technology/view/nicotine-detected-in-11-brands-of-e-cigarettes-in-japan (last visited 01 April 2014).
[21] City Ordinance 0367-12 Series of 2012, "The New Comprehensive Anti-Smoking Ordinance of Davao City"
[22] Retrieved from http://www.namnewsnetwork.org/v2/read.php?id=51042 (last visited 01 April 2014).

Compared to daily minimum wage however, the price of e-cigarettes is relatively high. The comparison with minimum wage is intended to illustrate the likelihood that a low-income smoker would actually purchase e-cigarette at its current price given the marketing claim that e-cigarette is aimed at providing smokers with safer alternatives as well as the industry's lobbying argument that e-cigarettes should be considered a public health tool. This is particularly relevant in developing countries where a majority of the smokers are poor; in these cases, the price of ENDS averaging at US$20 is not a practical tobacco-control intervention tool compared to the less than 10 cents per capita that is typically spent on tobacco control in most countries.[23]

Table 11. Price Range of Device (Device/ Package/ Kit or Starter Kit) Compared to Daily Minimum Wage (in US$)

Country	Lowest-Highest Price	Price of the "Most Saleable" E-Cig[24]	Daily Minimum Wage
Hong Kong	25.64-46.39	43.81	30.93
Japan	2.52-489.54	48.54	70.80
Malaysia	23.33-116.67	49.12	9.19
Philippines	23.00-136.00	27.30	10.38
Thailand	18.56-38.73	38.73	9.21

Table 12. Price Range of E-LIQUID (in US$)

Country	Lowest-Highest Price	Price of the "Most Saleable" E-Liquid[25]
Hong Kong	11.35-16.77	11.35
Japan	9.60*	9.60
Malaysia	3.97-6.11	3.97
Philippines	3.36-6.71	4.47
Thailand	0.62-3.10	3.10

No price range as only one price was provided by country researcher

e. Packaging and Labelling

The packaging of e-cigarette and e-liquid products being sold were examined to determine their health, safety, and product information, if there are any.

Table 11 shows observed features on the packaging and labeling of the "most saleable" or "popular" e-cigarette devices. While Table 12 shows observed features on the packaging and labeling of the "most saleable" or "popular" e-liquids.

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[23] World Economic Forum and World Health Organization (2011). *From Burden to "Best Buys": Reducing the Economic Impact of Non-Communicable Diseases in Low- and Middle-Income Countries*. Retrieved from http://www.who.int/nmh/publications/best_buys_summary.pdf (last visited 01 April 2014).
[24] Based on interviews with store attendants
[25] Based on interviews with store attendants

Typical product labeling features of consumer products include:

- **Warning Statement:** This refers to warnings found in device packaging, such as those that were found during observational studies: "This product is an electronic cigarette and should not be used by non-smokers." "Women who are pregnant and breast feeding, those sensitive to nicotine." "Smoke products contain nicotine, a highly addictive drug."[26]

- **Product Standard:** Safety standards are typically set by governmental and private organizations to provide quality assurance to consumers. Most electronic devices have product standards that require product testing for certification such as Underwriters Laboratories (UL), or Federal Communications Commission (FCC) on radiation emission, CE (eligibility to be sold in the EU (European Union)), International standards Organization (ISO), an international organization composed of standards bodies from over 75 countries[27].

- **Website:** This refers to a set of online web pages accessible through online Uniform Resource Locator (URL) where additional information on the product can be found.

- **Manufacturer's Information:** This is usually the manufacturer's name and address, e.g., "Manufactured by…". In some cases, only the distributor's name and address are provided.

Claims that can be found on ENDS product packaging include:

- **Effective for Cessation/Quitting:** This refers to claims that the device is an effective cessation treatment tool. An example from Japan shows the shop owner's claim: "I myself, a smoker of 30 cigarettes /day for 30 years was able to quit smoking with this e cigarette."

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[26] Retrieved from http://www.212smoke.com/# (last visited 01 April 2014).

[27] Following information provides an in-depth explanation of the different symbols used on electronics (Source: http://www.idp.net/sysinfo/standardsand.asp).
Standards for product safety developed by governmental and private organizations, such as; Federal Communications Commission (FCC) rates personal computers and other equipment which is for either office uses or everywhere uses, Underwriters Laboratories (UL), private and NGO recognized as the authority in product safety and has been evaluating products since 1894, Canadian Standards Association (CSA) develops standard and indicates products to comply with it., International Standards Organization (ISO) composes standards bodies from over 75 countries for computers and manufactured goods. These organizations do product testing that leads to formal certifications that required to manufacturers to assure customers the quality of products.
Source: *Deciphering the codes on your electronic devices* (2013). Retrieved from
http://www.americanownews.com/story/21855388/electronic-symbols (last visited 01 April 2014).

- **No Nicotine:** This refers to claims that ENDS contain no nicotine. An example of such a statement include: "**Nicotine, Tar ZERO!** (Japan: translated by Japan researcher)."
- **Safe to Use in Public Places:** This refers to claims that ENDS are safe to use in public places.

Table 13. Observed Features and Claims of "Most Popular" Brands of E-Cigarettes in each Country

Country	Features				Claims	
	Warning Statement	Product Standard	Website	Manufacturer's Information	Safe to Use in Public places	Effective for Cessation
Hong Kong (LETIEO)	✓	✗	✗	✓	✗	✗
Japan (TaEco-Fog)	✓	✗	✓	✓	✓	✓
Malaysia (Ego)	✓	✓	✓	✗	✓	✓
Philippines (Denkat)	✓	✗	✓	✓	✗	✗
Thailand (EVOD)	✗	✓	✗	✗	✗	✗

Typical features of e-liquid, in addition to manufacturer's information and website, include:

- **Warning Statement:** This refers to warnings about the chemical content and hazardous nature of the e-liquid, such as those that were actually found during observational studies: "E-LIQUID CONTAINS NICOTINE WHICH IS BOTH HIGHLY TOXIC AND VERY ADDICTIVE. KEEP WELL AWAY FROM CHILDREN AND PETS. E-LIQUID IS ONLY INTENDED TO BE USED WITH YOUR ELECTRONIC CIGARETTES, E-CIGS, E-CIGARS, E-

PIPES OR VAPORIZERS. NOT FOR SALE TO ANYONE UNDER THE AGE OF 18."[28] Other forms of warning include:
  - "Treat this product with care";
  - "Harmful if swallowed";
  - "If swallowed, take this leaflet with you and seek immediate medical advice"; and,
  - "Exposure to skin or eyes is harmful, flush with plenty of water when contaminated".[29]

- **Ingredient:** A list of ingredients is typically required of product labels for food and drug.

- **Nicotine Content:** Nicotine is a highly addictive and dangerous substance. The amount of nicotine is typically required by law to be placed on the label. For e-liquid, the products are usually differentiated by flavors and amount of nicotine.

- **Safety Seal:** Safety seal for e-liquid refers to either a standard plastic seal wrapped around the container to ensure that it has not been tampered with. This is in addition to the typical seal that is broken by twisting the bottle cap. Another form of seal is a "child proof" seal that makes the container difficult for children to open.

- **Government Approval:** Typically, chemical or food/drug substances would require government approval before being allowed to enter a market. This can be approval from a regulating authority, such as the Food and Drug Administration (FDA). For instance, a government approval may appear, as follows: "FDA Permit Number 12345."

Table 14. Observed Features and Claims of "Most Popular" Brands of E-Liquids in each Country

Country	Features						
	Warning Statement	Ingredient	Nicotine (mg)	Safety Seal	Government Approval	Manufacturer's Information	Website
Hong Kong (LETIEO)	✓	✗	✓	✗	✗	✓	✗
Japan (TaEco-Fog)	✓	✓	✓	✓[30]	✗	✓	✓
Malaysia (brandless)	✗	✗	✗	✗	✗	✗	✗
Philippines (Vape Time)	✓	✓	✓	✓	✗	✓	✓
Thailand (Marlboro red)	✗	✓	✗	✗	✓[31]	✗	✓

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[28] Retrieved from http://www.vapertrain.com/page/e-liquidsafety (last visited 01 April 2014).
[29] Based on a photo of e-liquid pack from Thailand
[30] In Japan the sampled products had standard external plastic seal covers the whole bottle and an additional seal inside the cap. In the Philippines, sampled products do not have an external plastic seal but have a seal that is broken when the cap is twisted.
[31] Thailand: Food and Drug Administration (FDA), Good Manufacturing Practice (GMP) and Material Safety Data Sheet (MSDS)

For e-cigarette device, features like government approval and product safety are sorely lacking. Hence, there is no quality assurance and it is not clear who will be held accountable for product defects.

For e-liquids, missing features in the most popular brands include safety seals and government approvals. "Child safety" seals are also not in place despite the danger these e-liquids pose to children. Government bodies, like the FDA, have not provided approval seals for the "most popular" e-liquid brands in the five (5) identified countries.

There is no standard message in the warning statements for both e-liquid and e-cigarettes. Practically all warnings observed in the products studied provided insufficient information to serve as an effective warning.

f. Variants and Flavors

Table 9 shows a wide range of e-liquid flavors identified in each country. More flavor variants were found in the Philippines, Thailand, and Malaysia compared to Hong Kong and Japan where flavored traditional cigarettes are actually more popular than in the Philippines and in Thailand. This could be due to the fact that ENDS is actually banned in Hong Kong[24] and ENDS with nicotine is banned in Japan.

The abundance of flavored e-liquids suggests that the products could be targeting young non-smokers or smokers who are used to smoking flavored cigarettes. In addition, more variants of "fruity" and "snack-type" flavors of e-liquid were found. For the same reason that flavored traditional cigarettes have been banned in different countries like the US, this is one way to attract either new smokers or non-smokers to try e-cigarettes. Additionally, flavors such as fruits, chocolate, and candy can mislead people to regard e-cigarettes as risk-free and safe for use[32].

Table 15. E-Liquid Flavors

| Country | Flavors | | | | | | | | | | | | Policy Banning Flavors or Cigs that Attract Kids |
	Apple	Banana	Candy	Cherry	Fruit Mix	Strawberry	Chocolate	Vanilla	Mint/ Menthol	Coffee	Tobacco/ Cigarette	USA Mix/ Marlboro	
HK							✔		✔	✔	✔		
JP				✔						✔	✔		
MY	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔		
PH	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	
TH	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	x[33]

The typical claim of the e-cigarette industry is that only smokers are targeted as the product is intended to help them quit. Consistent with this, many of the e-cig and e-liquid flavors mimic traditional cigarette taste.

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[32] Retrieved from http://www.medicaldaily.com/e-cigarette-makers-target-youth-advertising-and-flavor-report-finds-279884 (last visited 06 May 2014)

[33] http://www.tobaccocontrollaws.org/files/live/Thailand/Thailand%20-%20Misleading%20Statements%20Regs%202011.pdf)

g. Information from Sales Personnel

Store salespersons were asked whether e-cigarettes are allowed to be smoked beyond areas where combustible tobacco smoking is already permitted. Additionally, the salespersons were asked, *"Who should use this product?"* Their responses were classified into the following: smokers, non-smokers, former smokers, old people, young people, and anyone regardless of health conditions. They were also asked, *"Who else should use this product?"*

Overall, the salespersons recommended e-cigarettes to be used not just by smokers, but also by former smokers and, generally, by all interested customers. Clearly, they do not limit e-cigarettes to being just a cessation device targeting smokers, but also as a "lifestyle product" that can be used by anyone. Sales personnel did not specifically mention that the youth are discouraged to use e-cigarettes.

"Smoke-free" convenience is the most popular marketing strategy e-cigarette shops and distributors promote to their customers and users. The overall safety of e-cigarette is another considerable marketing ploy in promoting e-cigarettes. E-cigarette vendors talk about cost-effectiveness in using e-cigarettes compared to regular cigarettes, e.g., users will spend less by using e-cigarettes in the long term.

h. DISCUSSION OF OBSERVATIONS IN COUNTRY SURVEYS

1. **Packaging**
   For a few of the most popular brands in each subject territory, researchers looked out for various features of consumer protection, such as packaging, labeling, quality seals, in the various products that are subject of the study.
   a. For e-cigarette device, product standard and manufacturer information are sorely lacking.
   b. For e-liquid, there are no safety seals and government approval seals.

2. **Promotion**
   POS sales promotions are rampant, with POS sites broad and varied ranging from bookstore to pharmacies. Because the items are small and, at times, inconspicuously displayed (not as prominent), regulating POS sites is challenging.

3. **Price**
   In the region, typical price of a device is US$20 and above. This amount is higher than those offered online. The relatively low online price accompanied by unrestricted online access tends to induce trials including by young people. Price of ENDS averaging at US$20 is not a practical tobacco-control intervention tool compared to the less than 10 cents per capita that is typically spent on tobacco control in most countries.[34]

4. **Place**
   ENDS were found in a variety of stores, ranging from bookstores to pharmacies and in some stores along with regular cigarettes. Licensing of e-cigarette retailers may be required to limit the points of sale in case the item is not banned. In addition, the places where the products are likely to be available (e.g., novelty shop, specialty shop, places

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[34] World Economic Forum and World Health Organization (2011). *From Burden to "Best Buys":*
Reducing the Economic Impact of Non-Communicable Diseases in Low- and Middle-Income Countries. Retrieved from
http://www.who.int/nmh/publications/best_buys_summary.pdf (last visited 01 April 2014).

where youth frequent like malls) could also suggest that the target market for ENDS comprise of middle- and upper-income class consumers, possibly including the youth.

5. **Flavors**

A wide variety of flavors that are not as popular in the Philippines's and Thailand's regular cigarettes are available as flavors for e-cigarettes. These "child-friendly" flavors, coupled with having no nicotine, may attract a market of curious youths to try out smoking and, thus, open the gateway for them to smoke.

VII. DISCUSSION: Policy Implications

1. Status of ENDS Regulation and Challenges

In Asia (Table 16), Brunei, Cambodia, Hong Kong, and Singapore have banned e-cigarettes, while e-cigarettes with nicotine are banned in Japan. In news reports, Thailand's Ministry of Health reportedly declared a ban on e-cigarettes but there is no official order/ policy evidencing the same. In Davao City, Philippines, the local government has banned the use of e-cigarettes in enclosed places and public places, including "testing" or "sampling" the product. Additionally, use of e-cigarettes is not allowed on any commercial airline flights in Asia[35]. Other countries are currently conducting discussions on how to regulate e-cigarettes.

Table 16. Status of Legislation on E-cigarettes in Selected Asian Countries[36]

Country	Status of Legislation		
	Ban	**No Ban**	**Comments**
Brunei Darussalam	X		Sale is prohibited because it is considered an imitation of a tobacco product.
Cambodia	X		Ban on e-cigarette and shisha was announced by the Cambodian Anti-Drug Authority on 26 February 2014.
Hong Kong	X		The Department of Health has classified nicotine-containing e-cigarettes as poisonous, and banned it since 2009.
Japan	X		E-cigarette with nicotine is banned according to the Pharmaceutical Law.
Malaysia		X	
Philippines		X	Davao City prohibits the use of e-cigarettes in all enclosed places and public places.
Singapore	X		E-cigarette was banned in 2011 because it is an article that is designed to resemble a tobacco product.

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[35] Business Traveller Asia Pacific. Electronic cigarettes on flights. http://www.businesstraveller.asia/discussion/topic/Electronic-cigarettes-on-flights Accessed 7 Jul 2014

[36] Brunei, Japan: E-cigarette laws worldwide,http://www.ecigarette-politics.com/electronic-cigarettes-global-legal-status.html;Cambodia:Circular On Measures to Prevent and Terminate Consumptions, Sales, and Imports of SHISHA and E-Cigarette in the Kingdom of Cambodia,http://www.tobaccocontrollaws.org/files/live/Cambodia/Cambodia%20-%20E-cig.%20Shisha%20Circular.pdf;Republic of Philippines, Department of Health Electronic Cigarettes,http://www.doh.gov.ph/content/electronic-cigarette.html; Hong Kong: Electronic cigarettes containing nicotine governed by law http://www.tco.gov.hk/textonly/english/infostation/infostation_04032009.html; Singapore: Section 16 (1) of the Tobacco (Control of Advertisements and Sale) Act,http://www.hsa.gov.sg/publish/hsaportal/en/health_products_regulation/tobacco/legislation/highlights__prohibition.htm, Thailand, http://bit.ly/1fWAlDl

Regulation of ENDS is riddled with challenges. A simple declaration that e-cigarettes are banned or merely implying that e-cigarettes are banned without specific regulatory strategies and enforcement action has not prevented e-cigarettes from appearing in the market, as in the case of Thailand. However, a ban on the use of e-cigarettes in public places such as in the case of Davao, Philippines, has not prevented commercial availability of the product in places where youths frequent; this is consistent with Davao's strong smoke free enforcement action. However, none of these restrictions on e-cigarette have affected the availability of e-cigarettes through online purchases.

Although claims as to safety and effectiveness as cessation aid are often made as a marketing ploy, the e-cigarette industry opposes regulation that typically covers products with health claims such as drug approval process or access restriction such as classification as prescription medicine. For instance, the e-cigarette industry claims that their products are safe but do not provide standard safety seals, secure proper government approval or provide sufficient details in its packaging, furthermore, they lobby against strict product regulation

The e-cigarette industry claims that it wants to be treated like any other consumer product, and at the minimum, to be treated like tobacco products.[37] However, in reality, the e-cigarette industry propagates marketing claims that e-cigarette should and can be used anywhere regardless of smoke free laws. It also claims that it is not targeting minors but at the same time promote it as a lifestyle product and even provide weak age restriction systems online

2. ENDS and Harm Reduction Tool for Tobacco Control

Harm reduction is concretely illustrated by an e-cigarette user: *"…I will not buy a pack of cigarettes and hope I never do. I like a little nicotine buzz here and there, and if this becomes an addiction, hey it's better than cigarettes right?"*[38]

In most Asian countries, nearly half the adult men are smokers, mainly from low-income section of society. The usefulness of e-cigarettes as safe and effective cessation devices, for which there is still insufficient evidence, must be seen in this context. Furthermore, most smokers quit without any formal assistance, such as medication or professional help.[39]

Population-wide and cost-effective tobacco control measures, such as substantial tax increases, comprehensive advertising and promotion bans, pictorial health warnings on packs, and smoke-free public places remain priority measures in reducing tobacco use. It has taken countries many years to enact and implement these hard-fought measures. Consequently, these must not be rolled back or challenged by the e-cigarette business that renormalizes smoking, and promotes ENDS as freely available "lifestyle products" to be enjoyed by young and old alike.

This report noted that e-cigarettes are marketed online as cool and attractive, signifying that it is promoted as a "lifestyle product," not necessarily a cessation or harm reduction device. In fact, many e-cigarette products found in the market are labeled as "no nicotine" and hence, do not

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[37] Jean-FrançoisEtter et al, Electronic nicotine delivery systems: a research agenda, *Tob Control 2011;20:3 243-248 Published Online First: 17 March 2011 doi:10.1136/tc.2010.042168*

[38] EDC Forums (2013). *Review of Fantasia E-Hookah*. Retrieved from http://edcforums.com/threads/review-of-fantasia-e-hookah.114721/ (last visited 01 April 2014).

[39] Chapman, Simon & Wakefield, Melanie A. (2013). "Large-scale unassisted smoking cessation over 50 years: lessons from history for endgame planning in tobacco control." *Tobacco Control*. Vol. 22:i33-i35. doi:10.1136/tobaccocontrol-2012-050767. Retrieved from http://tobaccocontrol.bmj.com/content/22/suppl_1/i33.full.pdf+html (last visited 01 April 2014).

qualify them as nicotine replacement or harm reduction tools. In the points of sale visited, the e-cigarettes are placed alongside lifestyle items like cosmetics and novelty items, they are never sold alongside regular cigarettes; clearly signifying the intention to market e-cigarettes not just to smokers but to anyone interested in lifestyle products including the youth. The wide range of choices in flavors is also an indication of the target market.

Finally, the issue of nicotine addiction also has to be addressed. Governments do not benefit from maintaining nicotine addiction disguised as a safer alternative to regular smoking. Nicotine is not benign, is highly addictive, and its potency is similar to that of hard drugs, such as cocaine and heroin, as stated by the UK Royal College of Physicians in 2000.[40]

3. ENDS Industry and Tobacco Industry

Tobacco control measures including cessation treatment are part of the WHO Framework Convention on Tobacco Control (FCTC), a treaty outlining measures to curb the tobacco epidemic. The treaty includes a provision on protecting public health policies from the commercial and other vested interests of the tobacco industry (Article5.3). All the territories subject of this research have committed to accelerated implementation of the FCTC. Since tobacco companies are also buying into the e-cigarette business, tobacco companies can use this affiliation to legitimize partnerships with governments that recognize e-cigarettes as cessation treatment, thereby posing challenges to the implementation of FCTC Article 5.3. Reports show that tobacco companies continue to increase their regular tobacco business and are not transitioning to e-cigarettes for purposes of cessation, and are instead promoting dual use.[41]

VIII. Conclusion and Recommendations

Harms posed by e-cigarette use are currently unknown and although touted as less harmful than traditional cigarettes, it could contribute to a public health disaster in the future, unless properly regulated. At present, there is a lack of clearly defined standards with respect to safety of e-cigarettes, statements on health and safety, labeling, and information. The importation, marketing, and sale of e-cigarette devices, e-liquids, and accessories are unregulated in most countries subject of this study. The abundance of flavors and special offers in cheap prices suggest—targeting of younger people, including non-smokers, and renormalizing smoking. Despite findings on potential harms of e-cigarette vapor, the use of e-cigarette suppliers online and in-store generally encourage vaping in public places. Hence, further increasing the risk of attracting new smokers or normalizing smoking.

ENDS could potentially create problems parallel to regular cigarettes. The effects of the product can only be felt in the long term. Hence, the damage they can cause may already be enormous by the time it is discovered, and the costs to contain it can be unreasonably burdensome. Although arguably, the likelihood of harm is potentially high; some justify this harm with the benefits of quitting. However, alleged benefits of the product, such as potential harm-reduction or cessation aid, would not incur maximum gains in countries where smokers cannot afford such devices.

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[40] Royal College of Physicians (2000). *Nicotine addiction in Britain*. London: RCP. As cited in Royal College of Physicians and UK Centre for Tobacco Control Studies (2012). *Fifty years since Smoking and health Progress, lessons and priorities for a smoke-free UK*. Retrieved from http://www.rcplondon.ac.uk/sites/default/files/fifty-years-smoking-health.pdf (last visited 01 April 2014). Royal College of Physicians (2007). *Harm reduction in nicotine addiction: helping people who can't quit*. A report by the Tobacco Advisory Group of the Royal College of Physicians. London: RCP. Retrieved from http://www.rcplondon.ac.uk/sites/default/files/documents/harm-reduction-nicotine-addiction.pdf (last visited 01 April 2014).
[41] Emma Jacobs and Duncan Robinson,E-cigarettes: no smoke without fear, FT Magazine,17 April, 2014 http://www.ft.com/cms/s/2/ed185b54-c5e0-11e3-a7d4-00144feabdc0.html#axzz3124NntD3

Furthermore, the link between the e-cigarette industry and the tobacco industry as Big Tobacco buys into ENDS business, creates a conflict of interest situation if ENDS is intended to be used as a cessation aid to promote public health.

Finally, the overall risk and the complexity in partial regulation provide good reason for some governments to ban completely the sales and import of e-cigarettes, prohibit the public use of the device and to stop e-cigarettes from proliferating in the market. However, ENDS are widely available even in countries where they are purportedly banned. Hence, government should take further regulatory action in addition to merely declaring the legal status and harms of e-cigarettes.

By looking at key players and marketing strategies of the e-cigarette industry online and in-store, this report provides some insights into developing a regulatory regime that should apply to e-cigarettes.

Criteria for Cessation Aid

Assuming for the sake of argument that ENDS is to be universally approved as an effective and "safe" cessation-treatment tool, four (4) key considerations still need to be contemplated by many of the South East Asian governments. namely: (1) the cost-effectiveness of the product; (2) its availability as an essential drug; (3) readiness of the market, and (4) long term use All this must be balanced against the risk of introducing non-smokers to smoke and creating a gateway for the youth to smoke or to take drugs.

This report shows that the product's current price is too high to be a cost-effective cessation-treatment tool for developing countries that hardly invest in cost-effective tobacco control measures. Alternative cessation approaches, such as counselling, are available and have proven to be more effective than pharmaceutical interventions.[42] Furthermore, in developing countries, priorities should be set on alternative approaches to cessation, such as cost-effective tobacco control regulation (e.g., price measures, advertising bans, and graphic warning packages); otherwise, there will be no demand for any form of cessation treatment. Finally, no amount of scientific evidence in the next few years that point to the "safety" and "efficacy" of e-cigarettes as a cessation aid can accurately project the risk of potential adverse effects that can come with long term use of chemicals inhaled through e-cigarettes, more so for those containing nicotine.

Policy Options

A wide range of policy options are available to regulate e-cigarettes and these should be considered as a comprehensive package. This includes:

1. Ban on use in public places: This has been done in many jurisdictions as part of 100% smoke free environments. Simply declaring or adopting measures that e-cigarettes are included in the smoke free policies would usually be sufficient
2. Ban on internet sales of e-cigarettes
3. Ban on flavoured e-cigarettes
4. Ban or alternatively, strict regulation on the sale and import of e-cigarettes (if no local production exists within the jurisdiction)
5. Ban or alternatively, strict regulation of e-cigarettes which includes

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[42] Chaloupka FJ, Yurekli, A, Fong GT. Tobacco taxes as a tobacco control strategy; Tob Control 2012;21:2 172-180 doi:10.1136/tobaccocontrol-2011-050417

a. Regulation of manufacturers such as licensing and inspection of Manufacturers (including exporters)
b. Licensing and inspection of retailers
c. Regulation of production
d. Package and labelling requirements
e. Drug approval process
f. Requiring a bond to pay for potential future harms
6. Requiring information from manufacturers and licensees operating within the territory, any information on marketing, promotion, and tobacco industry affiliation and applying code of conduct rules

Areas of Regulation

Whether a ban or some other form of strict regulation is undertaken, regulatory efforts should focus on specific areas of concern in order to protect public health. This report reveals the various points of regulation that regulators need to look out for in developing and implementing policies relating to e-cigarettes:

A. **Manufacturers, Suppliers, Distributors, and Retailers:** Given the potential harm that the product may bring and, the fact that there are no quality assurances, it is important for regulators to identify the key players in the supply chain. Also, the fact that many of these players are foreign and may be beyond the jurisdiction of regulators is a problem.

Notably, according to this report, majority of the products are sold in either kiosks, small specialty shops, or online. This creates problems in regulation because
a. Small specialty shops can easily close shop and escape liability.
b. Websites are extremely difficult to regulate due to lack of physical presence in the territory of the regulator.
   1. In some cases, like in Internet sales, a ban may be more favourable than other forms of restrictions. For instance, it may be easier to ban e-commerce sites selling ENDS than to regulate them, e.g., requiring an age restriction system, by allowing purchase only if with prescription of a physician
   2. In case of large territories, the assistance of the local government authorities is critical. In resource-strapped areas, regulation, including licensing, can be even more challenging

Governments should require licenses for all suppliers and manufacturers of ENDS within the country's jurisdiction, even those that are producing only for export; and aside from strict licensing and regulatory requirements, require those making the product available to the public to pay a bond for potential future harms. This is to avoid fly by night e-cigarette companies that can cause serious public health dangers. Governments should also require information on marketing and promotion for purposes of effectively regulating the industry.

Consistent with the needs to monitor the tactics of the tobacco industry, and in light of the evidence of tobacco industry's interest in the e-cigarette industry, manufacturers and licensees must be required to provide any information on its tobacco industry affiliation in order that the government may apply the appropriate rules including codes of conduct in accordance with Article 5.3 of the FCTC.

In addition, to prevent youth access, internet sales must be banned and existing e-commerce laws must be utilized to implement this ban.

B. **Advertising or Promotional Claims Online:** Many products refer to websites. The target market is encouraged to search for information online but the information available are primarily marketing and advertising—mostly provided by users, such as in user-generated content sites, blogs and *fora*. Combined with a dearth of accurate and reliable sources of information on ENDS, the information available would have the effect of misleading consumers. Consequently, these misleading claims or information need to be regulated. However, it will be challenging to exact accountability from individuals who are merely expressing themselves in the Internet.

Another source of information that can provide misleading information is e-commerce sites. Unfortunately, many of these sites are beyond the jurisdiction of regulators as their locations are in foreign countries.

Governments should be prepared to find ways to counter misleading information in the internet by providing balanced information and enforcing consumer protection laws including in the online environment.

C. **Safety Seals and Government Approval:** E-liquid is hazardous. Safety seals need not only be "tamper proof" but should also be "child proof." Government approvals are given only after a series of lab tests to verify product claims and ingredients. They are certified by provision of seals or permit numbers. Ocular inspection of the product is required to know if it has complied with government safety seals and approvals. In principle, it is easier to require this if there are only a few retailers or manufacturers. Nonetheless, since suppliers are abundant and since ENDS can be sold practically anywhere, it will be difficult to require these product safety features and to impose regulations and sanctions.

Even before a complete regulatory framework is developed for ENDS (which can take a long time), governments should recognize that e-liquids are already widely available in the market, including through online access, and should take immediate action to protect consumers and the public from exposure to dangerous substances. In order to minimize the risk involved in mishandling toxic substances, governments should develop strict measures to limit the availability of and require proper marking of any liquid that contains propylene glycol, a key ingredient in most e-liquids.

D. **Nicotine Claims**: Given the addictive and dangerous nature of nicotine, government agencies should test claims relating to presence or absence of nicotine in a product. Such test (e.g., taking samples from numerous suppliers and variants of e-liquids) requires long laboratory time and ample facilities. It bears stressing that countries that have not been able to properly regulate traditional tobacco products cannot be expected to better regulate new ENDS products.

When considering ENDS regulation, governments must be conscious about their own capacity to test samples of a wide array of e-liquids for nicotine content. Practically all e-cigarettes, including those that claim to have no nicotine, actually contain nicotine. If there is no capacity to repeatedly undertake the countless tests and inspections, then the better option to a partial ban or a ban only for nicotine containing e-cigarettes, is to prevent the proliferation of e-cigarettes in different outlets/stores by restricting access or accrediting/ licensing retailers in addition to a rigorous approval process.

E. **Flavours:** Fancy flavours, including menthol, tend to attract the youth and could potentially open the gateway for them to smoke. If indeed intended only as a cessation

tool, the flavours need only substitute the traditional cigarette taste. Hence, fancy flavoured ENDS should be banned. Because banning one type but not the other is also almost impossible to enforce in online sales, a comprehensive ban on online sales is recommended.

Governments should immediately ban flavoured e-cigarettes as these do not have any beneficial health effect and could potentially be the gateway for the youth to start smoking. Although it will be less challenging than regulating the content of the product because anyone with olfactory senses would be able to detect a violation. Civil society and the private sector can be engaged to assist in monitoring the presence of flavoured e-liquids in the market.

F. **Use in Public Places:** Studies have shown that there particulate matters in e-cigarettes enters the lungs and can cause health harms[43] such that in some jurisdictions[44], the ban on smoking in public places in line with the protection against second hand smoke includes e-cigarette "vaping." Furthermore, use of e-cigarettes in public places of e-cigarettes tends to normalize smoking. This report shows that sellers of e-cigarette do not make any effort, using either marketing activities, in-store or online, or through packaging and labelling, to warn the public about the potential dangers of vaping.

Regardless of the policy direction taken with e-cigarette product regulation, governments should immediately undertake a ban on the public use of e-cigarette for the protection of the general public consistent with 100% smoke free environments, particularly, the protection from second hand smoke (particularly against particulate toxins that can enter the lungs) as well as the prevention of further youth uptake.

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[43] "Our data confirm that e-cigarettes are not emission-free and their pollutants could be of health concern for users and secondhand smokers. In particular, ultrafine particles formed from supersaturated 1, 2 propanediol vapor can be deposited in the lung, and aerosolized nicotine seems capable of increasing the release of the inflammatory signaling molecule NO upon inhalation. In view of consumer safety, e-cigarettes and nicotine liquids should be officially regulated and labeled with appropriate warnings of potential health effects, particularly of toxicity risk in children" Available at http://www.ncbi.nlm.nih.gov/pubmed/24373737; see also https://tobacco.ucsf.edu/e-cigarettes-release-toxic-chemicals-indoors-should-be-included-clean-indoor-air-laws-and-policies: "While the e-cigarette produced lower levels of toxins in the air for nonsmokers to breathe than the conventional cigarette, there were still elevated levels of acetic acid, acetone, isoprene, formaldehyde and acetaldehyde, averaging around 20% of what the conventional cigarette put into the air.
[44] See policies banning smoking, including vaping, in New York, LA, Chicago and other cities

[1] World Health Organization (2009). *WHO Study Group on Tobacco Product Regulation*. Report on the Scientific Basis of Tobacco Product Regulation: Third Report of a WHO Study Group. WHO Technical Report Series 955. Retrieved from http://whqlibdoc.who.int/publications/2009/9789241209557_eng.pdf (last visited 03 May 2014).

[2] Ellyatt, Holly (2013). "Court ruling could deal blow to e-cigarette industry." *CNBC*. Retrieved from http://www.cnbc.com/id/101260246 (last visited 03 May 2014).

[3] Philip Morris International, Inc. (2013). *Philip Morris International's CEO Presents at 2013 Morgan Stanley Global Consumer Conference* (Transcript). PM. 2013 Morgan Stanley Global Consumer Conference, 20 November 2013. Retrieved from http://finance.yahoo.com/news/philip-morris-internationals-ceo-presents-230602635.html (last visited 03 May 2014).

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[5] Chellel, Kit (2014). "Imperial Tobacco Unit Sparks E-Cig Patent Dispute in U.S. Suits." *Bloomberg*. Retrieved from http://www.bloomberg.com/news/2014-03-11/imperial-tobacco-unit-sparks-e-cig-patent-dispute-in-u-s-suits.html (last visited 03 May 2014).

[6] Pepper, Jessica K. & Brewer, Noel T. (2013). "Electronic nicotine delivery system (electronic cigarette) awareness, use, reactions and beliefs: a systematic review." *Tobacco Control*. doi:10.1136/tobaccocontrol-2013-051122. Retrieved from http://tobaccocontrol.bmj.com/content/early/2013/11/20/tobaccocontrol-2013-051122.abstract (last visited 03 May 2013).

[7] Peeters, Silvy & Gilmore, Anna B. (2013). "Transnational Tobacco Company Interests in Smokeless Tobacco in Europe: Analysis of Internal Industry Documents and Contemporary Industry Materials." *PLOS Medicine*. DOI: 10.1371/journal.pmed.1001506. Retrieved from http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001506 (last visited 03 May 2014).

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[9] Carter, Meg (2014). "Last gasp for e-cigarette ads that glamorise the habit?" *BMJ* 2014; 348:g475. doi: http://dx.doi.org/10.1136/bmj.g475. Retrieved from http://www.bmj.com/content/348/bmj.g475 (last visited 03 May 2014).

[10] Rooke, Catriona & Amos, Amanda (2013). "News media representations of electronic cigarettes: an analysis of newspaper coverage in the UK and Scotland." *Tobacco Control.* doi:10.1136/tobaccocontrol-2013-051043. Retrieved from http://tobaccocontrol.bmj.com/content/early/2013/07/24/tobaccocontrol-2013-051043.abstract (last visited 03 May 2014).

[11] Hsu, Robert; Myers, Allison, E; Ribisl Kurt M., et al (2013). "An observational study of retail availability and in-store marketing of e-cigarettes in London: potential to undermine recent tobacco control gains?" *BMJ Open* 2013; 3:e004085. doi:10.1136/bmjopen-2013- 004085. Retrieved from http://bmjopen.bmj.com/content/3/12/e004085.full.pdf (last visited 03 May 2014).

[12] Cobb, Nathan K.; Brookover, Jody; Cobb, Caroline O. (2013). "Forensic analysis of online marketing for electronic nicotine delivery systems." *Tobacco Control*. doi:10.1136/tobaccocontrol-2013-051185. Retrieved from http://tobaccocontrol.bmj.com/content/early/2013/09/13/tobaccocontrol-2013-051185.abstract (last visited 03 May 2014).

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