

A total market approach for condoms in Myanmar: the need for the private, public and socially marketed sectors to work together for a sustainable condom market for HIV prevention

Han Win Htat,¹ Kim Longfield,² Gary Mundy,³ Zaw Win⁴ and Dominic Montagu⁵

¹Population Services International Myanmar, Director, Social Marketing, ²Population Services International, Director, Research and Metrics, ³Population Services International, Senior Regional Researcher, Asia/Eastern Europe, ⁴Population Services International Myanmar, Research Manager, Strategic Information and ⁵University of California, San Francisco, Associate Professor, Global Health Sciences

*Corresponding author. Han Win Htat, 142, Zizawa Street, 35 Ward, North Dagon, Yangon, Myanmar. E-mail: hwhtat@psimyanmar.org

Accepted 26 May 2014

Background Concerns about appropriate pricing strategies and the high market share of subsidized condoms prompted Population Services International (PSI)/Myanmar to adopt a total market promoted approach (TMA). This article presents data on the size and composition of the Myanmar condom market, identifies inefficiencies and recommends methods for better targeting public subsidy.

Methodology Data on condom need and condom use came from PSI/Myanmar's (PSI/M's) behavioural surveys; data for key populations' socioeconomic status profiles came from the same surveys and the National Tuberculosis Prevalence Survey. Data on market share, volumes, value and number of condoms were from PSI/M's quarterly retail audits and Joint United Nations Programme on HIV/AIDS (UNAIDS).

Results Between 2008 and 2010, the universal need for condoms decreased from 112.9 to 98.2 million while condom use increased from 32 to 46%. Free and socially marketed condoms dominated the market (94%) in 2009–11 with an increase in the proportion of free condoms over time. The retail price of socially marketed condoms was artificially low at 44 kyats (\$0.05 USD) in 2011 while the price for commercial condoms was 119–399 kyats (\$0.15–\$0.49 USD). Equity analyses demonstrated an equal distribution of female sex workers across national wealth quintiles, but 54% of men who have sex with men and 55% of male clients were in the highest two quintiles. Donor subsidies for condoms increased over time; from \$434 000 USD in 2009 to \$577 000 USD in 2011.

Conclusion The market for male condoms was stagnant in Myanmar due to: limited demand for condoms among key populations, the dominance of free and socially marketed condoms on the market and a neglected commercial sector. Subsidies for socially marketed and free condoms have prevented the growth of the private sector, an unintended consequence. A TMA is needed to grow and sustain the condom market in Myanmar, which requires close co-ordination between the public, socially marketed and commercial sectors.

Keywords Condoms, commercial sector, equity, free condoms, health markets, public sector, social marketing, subsidy, sustainability, total market approach, universe of need

KEY MESSAGES

- The market for male condoms was stagnant in Myanmar due to: limited demand for condoms among key populations, the dominance of free and socially marketed condoms on the market and a neglected commercial sector.
- A total market approach is needed to guide the long-term growth of the condom market in Myanmar.
- Close co-ordination between the three sectors—public, socially marketed and commercial—is needed to further reduce HIV, and grow and sustain the market for male condoms.

Introduction

Social marketing applies marketing principles and techniques to change the behaviours of target audiences for social good. It is often used to encourage healthy behaviours, such as condom use for human immunodeficiency virus (HIV) prevention. More than 2 billion socially marketed condoms are distributed each year, and condom social marketing is present in 66 countries across the globe (DKT International 2012).

The social marketing of condoms, particularly in development contexts, is supported by multi-lateral subsidies of various forms. Debates about efficiency, especially cost recovery, appropriate pricing strategies and high condom market share among social marketing agencies, and longer term sustainability of subsidized condom markets, have influenced the development of a total market approach (TMA), also known as the ‘whole market approach’. defined TMA as a system in which all sectors—public, commercial and non-governmental organization (NGO)- or donor-financed social marketing—are integrated within one ‘market’ that is segmented by willingness to pay. Using TMA means that all sectors work together to deliver health choices for all population segments, while ensuring that the needs of the poor and vulnerable are met in a more cost-effective and efficient manner. The goal is to ensure that the entire population in need is reached with products: those in the poorest communities through free distribution, those with slightly greater resources through partially subsidized products and those with an even greater ability to pay, through commercially distributed products without subsidy. This is especially important in countries where economic development is taking place, but unevenly: while there are growing segments of the population that have the ability to pay for commercial products, a large proportion is still reliant on subsidized or even free products (Pollard R, An introduction to the total market approach to commodities and services supply in low-income countries. Presented at Population Services International - “Conversations on Social Marketing”, George Washington University, November 2007).

The concepts of improved market segmentation and the more efficient use of funds to increase health impact are naturally appealing to social marketers, donors, policy makers and governments; some argue that TMA is central to the future of

social marketing. As development resources become scarcer, stakeholders are looking for solutions, like TMA, that support exit strategies and a decreasing reliance on subsidies (Gardiner *et al.* 2006; Lefebvre 2007; O’Sullivan *et al.* 2007). There is also recognition that the issues and focus of TMA initiatives should vary according to the stage of development of each country’s market (Barnes *et al.* 2012).

Increasingly, agencies are also experimenting with cost recovery and commercial strategies for condom distribution to strengthen national markets. Examples include PSI’s programmes in Southern Africa, Romania and Paraguay (Pallin *et al.* 2013).

This article uses market and behavioural research data collected between 2008 and 2011 and UNAIDS country data to: (1) describe the current condom market in Myanmar, including consumer demand; (2) identify which consumer segments use free, subsidized and commercial sector condoms; (3) understand the effect of free and subsidized condoms on the overall market and (4) discuss the unintended effect of subsidies and their appropriate use, to strengthen the overall condom market. Strategic decisions are also presented for improving the health of the market, reaching those in need, growing the commercial sector and increasing the sustainability of the market by more appropriately targeting subsidies for free and socially marketed condoms.

Background

Condom social marketing

Condom social marketing interventions are one of the most important components of sexual health programmes in the developing world. Their origins can be traced back to the 1960s when the government of India expanded the availability of family planning methods, with a particular focus on condoms (Harvey 1999; Meadley *et al.* 2003). After the discovery of HIV/AIDS in the 1980s, most condom social marketing programmes have taken place within the context of HIV prevention (UNAIDS 2000; Sweat *et al.* 2012). International donors and, in some cases, local governments have paid for the majority of condom social marketing costs (Brady and Hemmings n.d.; Chapman *et al.*

2012; UNFPA 2011; Weinreich 2010). As a result, there is growing interest in knowing how demand for condoms among at risk populations can be met more efficiently.

Total market approach

In addition to ensuring that the demand for condoms is met for key populations, a TMA means increasing the sustainability of the market by better targeting public and social sector subsidies and decreasing ‘crowding out’ of the commercial sector. This approach requires that the three sectors work together to ‘grow the market’, maximizing their core competencies to meet the needs of the different segments of the population. Such market segmentation allows for a more efficient use of limited resources and better targeting of subsidies (Barnes *et al.* 2012; Population Services International 2011).

There have been a number of initiatives in recent years that have employed a TMA approach. Among those that have been documented, most have been within family planning. Examples include identifying the appropriate public/private mix for improving access to modern contraception in the European and Eurasian Region (Armand *et al.* 2007) and expanding commercial sector provision of contraceptives and condoms in Turkey (Pandit and Bornbusch 2004). There have been TMA initiatives for expanding method choice in Egypt (Pandit and Bornbusch 2004) and achieving national contraceptive security in Nicaragua and Paraguay (Barnes *et al.* 2012; Drake *et al.* 2011). Studies have also measured the impact of free commodities and taxes on contraceptives on the commercial sector in Madagascar (Barnes *et al.* 2012).

There have also been applications of TMA for strengthening condom markets with a focus on HIV. In Cambodia, social marketers have explored cost recovery strategies for condom distribution (Population Services International 2011) and the role of subsidies and free condoms on 11 sub-Saharan African countries (Chapman *et al.* 2012). There have also been initiatives to understand the impact of free commodities on socially marketed condoms in the Ivory Coast (Barnes *et al.* 2012) and methods for achieving a sustainable regional condom market in the Caribbean (Brady and Hemmings n.d.; Hemmings *et al.* 2009).

PSI Myanmar’s condom programme

For over 15 years, PSI has implemented a condom social marketing programme in Myanmar, through the subsidized sale and distribution of *Aphaw*-branded condoms. In 2011, two attributes of *Aphaw*, regular and scented condoms were distributed to retailers at 14 kyats (\$0.017 USD) and 18 kyats (\$0.022 USD) with recommended consumer prices at 30 kyats (\$0.037 USD) and 40 kyats (\$0.049 USD), respectively. Target groups have been: female sex workers (FSW), their clients of female sex workers (CFSW) and men who have sex with men (MSM). The *Aphaw* targeting strategy is in line with the HIV epidemic in Myanmar, which is concentrated. HIV transmission occurs primarily in high-risk sexual contacts between FSW and their clients, MSM and the sexual partners of these key populations. Sentinel surveillance data from 2011 provided HIV prevalence estimates for FSW (9.4%) and MSM (7.8%). These groups have shown a considerable decrease in prevalence over the last years and the provision of free and socially marketed

condoms has been a strategic priority for Myanmar (National AIDS Programme of the Ministry of Health 2012).

Aphaw has, over the past five years, accounted for ~80% of condoms sold in Myanmar. The remaining 20% of sold condoms are commercial brands and leaked freely distributed condoms that are sold on the market. The small share of commercial condoms on the market, and concerns about ineffective targeting of free and partially subsidized condoms, which take market share away from the commercial sector makes a TMA approach critical to maintaining and increasing levels of condom use, whilst using subsidies more efficiently.

Methods

Key metrics for informing a strategic TMA for condoms include: (1) universe of need (UoN)—the number of condoms needed to reach universal coverage in today’s market; (2) demand—the proportion of need that is converted into condom use; (3) equity—the degree to which the poor and vulnerable use condoms, compared with wealthier population segments; (4) subsidy—the amount of donor or government funding that supports condom supply; and (5) sustainability—a decreased reliance on subsidy over time demonstrated by an increase in market volume, value and the number of brands on the market (Barnes *et al.* 2012; Chapman *et al.* 2012).

We used a variety of existing data to analyze the condom market through the TMA lens. Data on UoN, condom use and the socioeconomic status (SES) profile for each target population were from behavioural surveys conducted by PSI/Myanmar’s (PSI/M), 2008–2010. We developed SES profiles by cross-referencing national SES data taken from 2010 National Tuberculosis Prevalence Survey. Data for market share, volumes, value and number of condoms on the market were from quarterly condom retail audits conducted by PSI/M in five major cities. Retail audits sampled pharmacies and street vendors and were conducted throughout 2009, 2010 and 2011. Data on free product distribution came from UNAIDS.

UoN and consumer demand analysis

For UoN, we used two rounds of PSI’s behavioural surveys for each key population. These surveys took place in 2008 and 2010, were cross-sectional, and conducted among FSW, CFSW, and MSM. Time location sampling was used to select FSW and CFSW study participants in both rounds. For MSM, respondent-driven sampling (RDS) was used for both study rounds. Sample sizes for the 2008 surveys were: FSW (975), CFSW (2025), and MSM (1197). Sample sizes for 2010 were: FSW (978) CFSW (2740), and MSM (1370). We used data from UNAIDS’s Asia Epidemic Model (AEM) to estimate the size of each key population (The Strategic Information and M&E Working Group 2012).

The number of condoms required to protect FSW included sex acts with commercial, casual and regular partners. For CFSW, the number of condoms required to protect sexual acts only included sex acts with a long-term girlfriend who was neither FSW nor wife. This was to avoid double counting condoms already calculated for commercial and casual partners (and included in the estimates for FSW) and condoms used as a

modern contraceptive method (which was already included in estimates for family planning). For MSM, the number of condoms required included only penetrative sex acts with men; to avoid double counting, receptive sex acts were not included. To estimate additional condom need, MSM's sex acts with female partners were also calculated. Estimates for the number of condoms needed for family planning was calculated with data from the Reproductive Health report (UNFPA 2011). No data for youth or sexual contacts among other unmarried couples were available, so no UoN estimates for these populations were included in our analysis.

The following factors were multiplied to calculate UoN in Excel 2007 (Table 1).

For MSM, the percentage of MSM reporting anal sex in the last year, the average number of anal sex acts with male partners in the past month, the percentage of anal sex acts that were penetrative, the percentage of MSM reporting condom use during anal sex with other MSM, the percentage of MSM who reported sex with female partners, number of vaginal sex acts per month and rates of condom use for vaginal sex in the past month.

For FSW, factors used to calculate UoN were: the percentage of FSW reporting sex with commercial, casual and regular partners, the number of partners per month, the number of sex acts per month and rates of condom use with each partner type.

For CFSW factors were: the percentage of men reporting sex with a regular non-marital and non-commercial partner, the number of partners per month, the number of sex acts per month and the rate of condom use with regular non-marital partners.

For demand, we used the same 2008 and 2010 PSI behavioural surveys. Condom use for FSW was defined as correct and consistent use with commercial, casual and regular partners. For CFSW, we defined condom use as correct and consistent use with commercial, casual, marital and regular non-marital partners. For MSM, we combined three different measures of condom use into one variable: condom use during receptive sex with male partners, penetrative sex with male partners and vaginal sex with female partners. Cross tabulations were run in Statistical Package for the Social Sciences (SPSS) 15 between the different sectors of condoms (free, socially marketed and commercial) and use.

Equity and SES analysis

For measures of equity, we used two data sources: the 2008 and 2010 PSI behavioural surveys cited above and the 2010 National Tuberculosis Prevalence (NTP) Survey. We used the NTP Survey to establish wealth quintiles for the general Myanmar population. We created an index of SES using a set of household asset variables and principal components analysis (PCA). In this analysis, the wealth index used a list of seven asset variables that were included in both the NTP Survey and behavioural surveys. We first combined the data sets and then conducted PCA on the entire sample. We constructed a continuous wealth index and then further categorized it into wealth quintiles (Montagu *et al.* 2013). Graphical distributions of categorization of wealth indices were compared, as well as distributions by sample and percentage of key population in each wealth category. We used the same method to calculate wealth quintiles for each key population. We cross-referenced the wealth quintiles across the study populations to determine the

Table 1 Estimated number of protected and unprotected sex acts by population and partner type

Condom need and use		Estimated number of sex acts		Estimated number of sex acts protected by condoms		Estimated number of unprotected sex acts	
Population	Type	2008	2010	2008	2010	2008	2010
FSW	Estimated no. of condom used by FSW with commercial partners	20 904 000	31 509 600	9 927 310	19 535 952	10 976 690	11 973 648
	Estimated no. of condom used by FSW with casual partners	58 636	856 149	34 595	452 988	24 041	403 161
	Estimated no. of condom used by FSW with regular partners	8 626 920	3 000 046	2 945 230	798 012	5 681 690	2 202 033
CFSW	Estimated no. of condom used by CFSW with unmarried long-term partners	38 668 180	31 655 388	2 281 423	3 418 782	36 386 757	28 236 606
MSM	Estimated no. of condom used by feminine MSM for penetrative sex with MSM	15 485 613	12 056 072	6 302 645	7 486 821	9 182 969	4 569 251
	Estimated no. of condom used by non-feminine MSM for penetrative sex with MSM	21 259 425	9 765 332	9 524 222	7 216 580	11 735 202	2 548 752
	Estimated no. of condom used with female partners	787 720	2 177,984	480 509	1 555 080	307 211	622 903
General	Estimated no. of condom used by married women for birth spacing	7 114 840	7 254 347	4 870 051	4 965 542	2 244 789	2 288 805
	Grand total	112 905 333	98 274 918	36 365 985	45 429 758	76 539 348	52 845 159
	Percentage	100	100	32	46	68	54

proportion of FSW, CFSW and MSM who fell within the bottom two quintiles of wealth. We used SPSS 15 for equity data analysis.

Subsidy analysis

Subsidy for free condoms was simply the cost donors paid to procure condoms. For socially marketed condoms, we took the difference between the price that donors paid to procure condoms and the price at which condoms were sold to wholesalers and distributors. These data came from analysis of retail audits and UNAIDS’s country data cross-referencing with PSI’s unit cost for male condom.

Sustainability measures came from several different sources. We obtained volumes for free condoms from the UNAIDS data. For socially marketed and commercial condoms, we used PSI/M’s retail audits conducted between 2009 and 2011. Data were analysed in SPSS 15 and Microsoft Excel 2007. We calculated market value for free condoms by multiplying the cost donors paid to procure condoms by the volumes distributed each year. We calculated market value for socially marketed and commercial brands by multiplying retail prices by volumes for each year. The number of brands on the market came from the same retail audits noted above.

Results

Description of the current condom market in Myanmar—UoN and consumer demand

Overall, we found that the UoN decreased between 2008 and 2010. The percentage of sex acts where a condom was used increased. Unprotected sex acts continued to outnumber protected sex acts.

Specific details for UoN and demand

The UoN for condoms decreased from 112.9 million condoms in 2008 to 98.3 million condoms in 2010, largely due to a reduced number of sex acts reported by all key populations especially among MSM. There was an increase in the proportion of sex acts protected by condoms among key populations from 32% (36.4 million) in 2008 to 46% (45.4 million) in 2010. There was also a decrease in the proportion of unprotected sex acts over time: from 68% (76.5 million) in 2008 to 54% (52.8 million).

However, more than half of total sex acts remained unprotected in 2010 (Table 1).

The number of condoms used by FSW and CFSW increased from 12.9 to 20.8 million and 2.3 to 3.4 million, respectively. There were almost no changes in the number of condoms used by MSM or for birth spacing by married women (Figure 1).

Consumer segments that use free and subsidized condoms

More than 90% of key affected populations reported the use of socially marketed *Aphaw* condoms at last sex. Equity analyses demonstrated an equal distribution of FSW across national wealth quintiles. MSM and CFSW were found to be skewed towards higher wealth quintiles: 54% of MSM and 55% of CFSW were in the highest two quintiles.

The effect of free and subsidized condoms on the overall market

Free and socially marketed condoms dominated the Myanmar market and there has been an increase in the proportion of free condoms on the market over time, which has crowded out the socially marketed sector. Likewise, the price for *Aphaw* socially marketed condoms was artificially low at 44 kyats (\$0.05 USD) in 2011 and there was room in the market for a quality commercial condom at the 119–399 kyats price range (\$0.15–0.49 USD). The current market structure is preventing the commercial sector from growing.

Specific details for free and subsidized condoms

The estimated number of condoms in the market remained consistent between 2009 and 2010—~43.4 and 44.3 million condoms, respectively. The number of total condoms, however, decreased to 37.2 million condoms in 2011. The market share of free condoms increased from 33.4% in 2009, to 51.7% in 2011. This has been to the detriment of socially marketed condoms: the market share for socially marketed condoms decreased from 53.6 to 40.5% between 2009 and 2011. The market share for commercial condoms was just below 6% each year. Additionally, in 2009, 8% of the market was made up of fully subsidized ‘free’ condoms leaked in the market for which a retail price was being charged to consumers. This reduced to 2.95% in 2011. There was one year of overlap (2010) to cross-reference the condom market and UoN for condoms: the result shows that total condoms in the market were within 2.5% of those used, which suggests that the correct number of condoms



Figure 1 Segmentation of condom use by type of sex.

were available on the market. In 2011, the number of condoms on the market decreased significantly. Assuming little or no change in sex, this suggests a market shortfall in 2011 (Figure 2).

As noted in Table 2, the average price for socially marketed *Aphaw* condoms was 44 kyats (\$0.05 USD) while the average lowest price for a quality commercial condom brand was 119 kyats (\$0.15 USD) in 2011. United Nations Population Fund (UNFPA) ‘free’ condoms that were being sold to consumers cost 56 kyats (\$0.07 USD), a higher price than *Aphaw* (Table 2).

Value of subsidies in the market

Donor subsidies for condoms have been poorly allocated: they increased over time due to the large market share for free condoms, which are fully subsidized.

Specific details for subsidy and sustainability

We found no overall change to donor subsidies between 2009 and 2011. The estimated total value of subsidies was \$897 600 USD in 2009 and \$878 200 USD in 2011. The reduction in subsidy for socially marketed condoms was only explained by the free condom sector that crowded them out (from \$463 000 USD in 2009 to \$300 000 USD in 2011). There was an increase in subsidy for free condoms from \$434 000 to \$577 000 USD. Therefore, stability can be attributed to a

concurrent decrease in subsidies for socially marketed condoms and increase in subsidies for free condoms.

The total market value for condoms decreased from an estimated \$2.2 million USD in 2009 to \$1.2 million USD in 2011, with the decline in socially marketed condoms being the steepest. Likewise, the number of commercial condoms on the market reduced from 34 to 29 (Figure 3).

Analysis of the distribution of at risk populations across wealth quintiles shows that a greater proportion of MSM and male clients of FSW (MC) are in the highest two quintiles, whilst a greater proportion of FSW are in the lower wealth quintiles (Figure 4).

Discussion

Our analysis demonstrated that there have been improvements in condom use by at risk populations, but the market for male condoms was stagnant in Myanmar. Factors hampering market growth were: limited demand for condoms among key populations, the dominance of free and socially marketed condoms on the market and a neglected commercial sector. Although donor subsidies have remained fairly constant over time, they have been poorly allocated: some wealthier CFSW and MSM have benefited from partially and fully subsidized condoms when they may well have the ability to pay a higher price for their condoms, relying less on subsidy.

Efforts to increase demand for condoms among FSW, CFSW and MSM are needed. PSI/M is working with other partners, including the National AIDS Program (NAP), UNAIDS and UNFPA, to increase demand for correct and consistent condom use. PSI/M’s Targeted Outreach Program (TOP) is the largest community-led HIV prevention programme in the country targeting FSW and MSM. Peer educators from TOP conduct outreach sessions to deliver targeted messages on HIV and STI prevention and treatment supported by mass and print media communication campaigns. PSI/M’s HIV prevention activities also include promotion of male and female condoms, water-based sexual lubricants, voluntary counseling and testing (VCT) for HIV, and testing and treatment for sexually transmitted infections.

Socially marketed and free condoms dominated the market and were crowding out the commercial sector. The reliance on one subsidized condom brand (*Aphaw*) indicates a weak market. Socially marketed condoms were the brands key populations reported using most often, although the wealth quintiles of CFSW and MSM were higher than the general population in higher segments. This means wealthier segments of key populations were benefiting from partially subsidized condoms intended for poorer segments of the population. Social

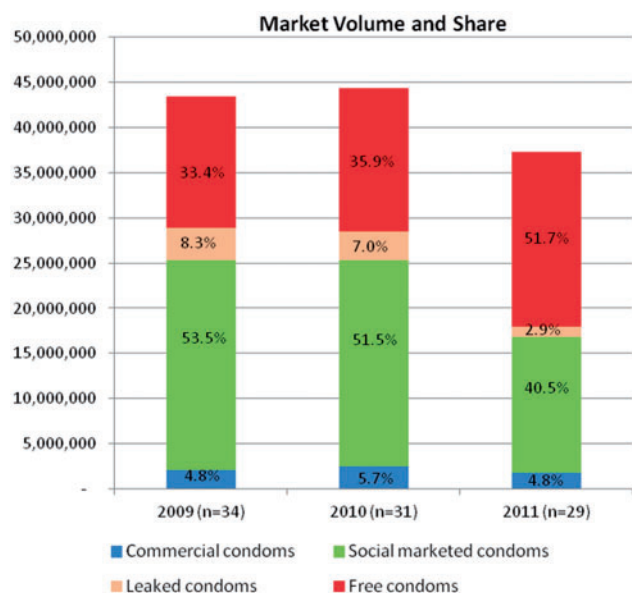


Figure 2 Market share for commercial, socially marketed, free and ‘leaked’ condoms—2009, 2010 and 2011.

Table 2 Retail prices for socially marketed and commercial condoms

Brand name	Myanmar kyats			USD		
	2009	2010	2011	2009	2010	2011
Aphaw	55	45	44	0.07	0.06	0.05
UNFPA	54	54	56	0.07	0.07	0.07
Quality commercial condoms	206–356	107–341	119–399	0.25–0.44	0.13–0.42	0.15–0.49

Exchange rate in 2011: 1 USD = 810.78 kyats (weighted average).

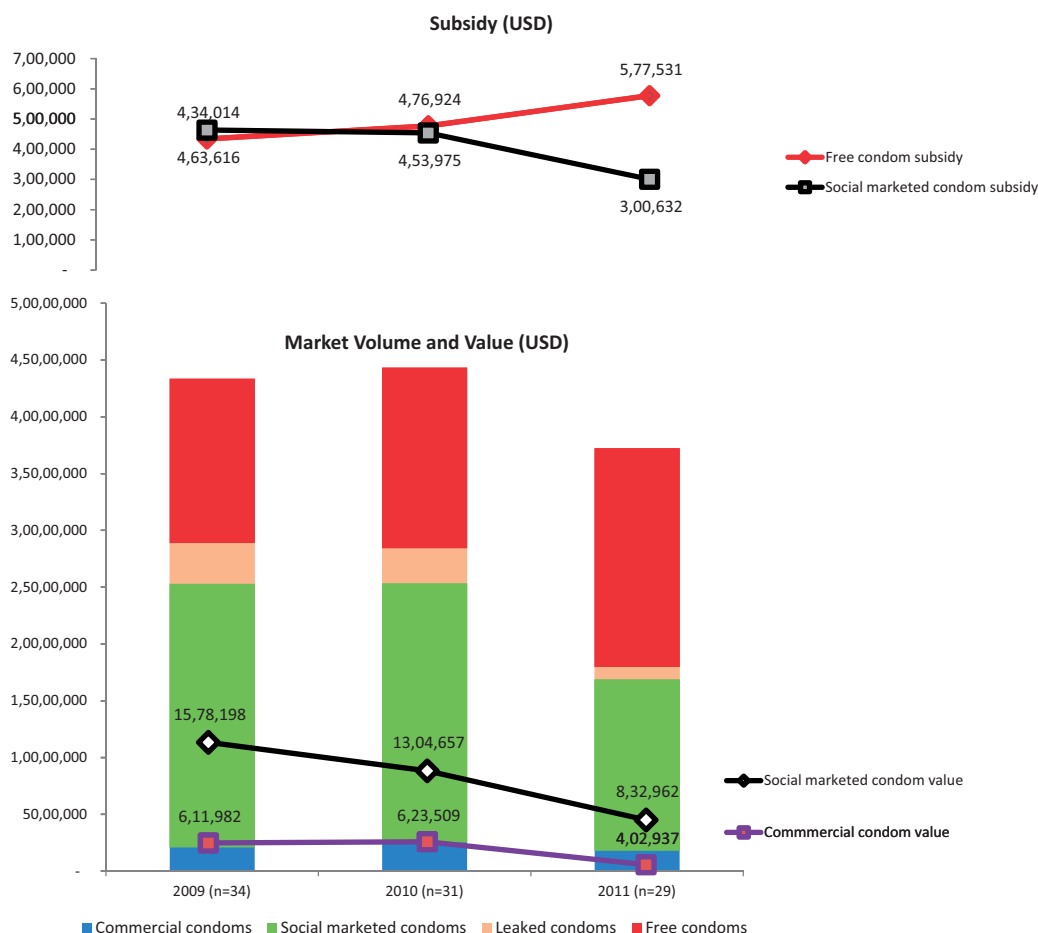


Figure 3 Analysis of the condom market by market share, value and subsidy.

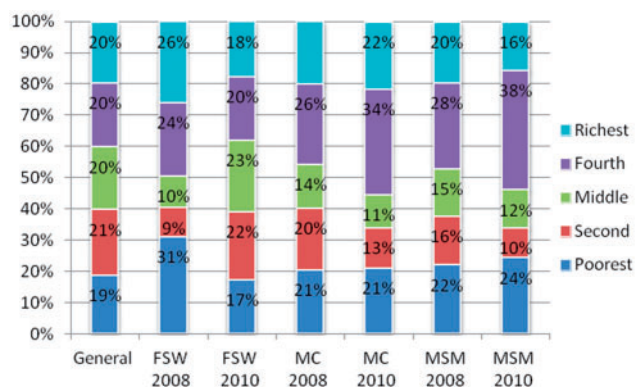


Figure 4 Distribution of target populations across wealth quintiles, 2010 (Longfield et al. 2014).

marketers should carefully revisit and revise the current pricing strategy to reflect the market’s ability to pay.

In an effort to open up the market to the commercial sector, PSI/M has established partnerships with commercial brands that meet quality standards. ‘Support’ includes product promotion and distribution at restaurants, high-end bars and night-clubs. These partnerships are intended to increase demand and willingness to pay for commercial brand condoms among those who have the ability to pay more, like some CFSW and MSM.

Additionally, PSI/M plans to integrate commercial brands into its existing sales and distribution channels to scale up coverage and increase access to low-cost commercial condoms in a range of non-traditional outlets.

Free condoms have also distorted the market; so much so that they were leaking into the commercial market and being sold. After PSI worked with UNFPA to improve the targeted distribution of free condoms, the leakage reduced gradually. Public sector partners, led by the National AIDS Program (NAP), should co-ordinate on measures that will more accurately forecast demand for free condoms and prevent large influxes of condoms from entering the market. International donors should also better target resources and ensure that wealthier populations are not benefiting from fully subsidized products. Free condoms should also be promoted and targeted to those who need them most, FSW and the poorest CFSW and MSM.

Much of the current commercial sector in Myanmar is composed of low-quality condoms unofficially imported from China; counterfeit products are also present in the market. Our findings present an advocacy opportunity for legislation with the Myanmar Food and Drug Authority (FDA) to establish national condom quality standards and create a monitoring system to ensure that only condom brands that meet quality standards are circulating in the market. This will allow

high-quality brands by viable competitors to increase their market volume and value shares, provide them with opportunities to expand their brand lines and guarantee that consumers have access to quality products.

Examining Myanmar's condom market through a TMA lens and using the results to inform decision-making ensures that PSI, its partners and its stakeholders employ a strategic approach for monitoring and growing the condom market. It will ensure that those most at risk for HIV—FSW, CFSW and MSM—have access to high-quality condoms and at the appropriate price points. It will also ensure that public subsidies are maximized and used for those poorest segments of the population. All of these efforts combine to create a more sustainable market for condoms and protection for those at greatest risk for HIV.

Limitations of the study

A study like this, which relies on several retrospective data sources, will inevitably have limitations. There were no data available to calculate condom demand and use by unmarried couples within the general population, which means that we could have underestimated the total market for condoms, although the focus in this article is on the market among populations at higher risk of HIV transmission. The original intent of the behavioural surveys was for programme design and monitoring, not TMA analysis, so some measures for condom use were not as straightforward as we would have liked. There were time and year differences between the behavioural studies and retail audits, which resulted in overlapping data for only one year, 2010. The market data came from different sources: PSI's retail audits, UNFPA data and UNAIDS data. All used different methodologies, which made it difficult to calculate market dynamics and cross-reference the results. Low levels of reported free condom use, but high market share for free condoms indicates limitations in either the condom brands key populations reported using or overestimates of free condoms on the market. Finally, the estimates on sexual activity for each population are taken from surveys. The fluctuations between years may reflect sampling error in addition to actual changes in sexual activity. This is particularly the case for the surveys with MSM where participants were selected through RDS, a non-probability-based procedure.

Conclusion

A TMA is needed to guide the long-term growth of the condom market in Myanmar. Action must be taken to: increase demand for condoms among key populations, decrease the dominance of free and socially marketed condoms, grow the commercial sector and improve the use of donor subsidies. Only then will the Myanmar condom market become commercially viable and more sustainable. Close co-ordination between all three sectors—the public, socially marketed and commercial sectors—is needed to keep reducing rates of HIV and ensure a sustainable condom supply.

Acknowledgements

We thank Markus Bühler, former UNAIDS Myanmar M&E advisor for checking data accuracy and reviewing a draft of the abstract. Kaitlyn Roche, marketing intern for PSI/Myanmar, completed the original TMA Myanmar case study, which served as a foundation for this study. Amy Ratcliffe, senior technical advisor, Metrics at PSI, supported UoN calculations. Rebecca Firestone, researcher at PSI, helped with calculating wealth quintiles. Melanie Sie, intern at PSI, provided support on the literature review. Finally, we thank Barry Whittle, executive director for PSI/Myanmar, and David Valentine, deputy country director of PSI/Myanmar for their encouragement and support during the writing process.

Funding

This work was supported by the Bill & Melinda Gates Foundation (grant number 48970) with the collaboration of PSI/Myanmar and the Global Health Group from the University of California, San Francisco. The grant covered the cost of two writers' workshops where this manuscript was produced.

Conflict of interest: None declared.

References

- Armand F, O'Hanlon B, McEuen M, Kolyada L, Levin L. 2007. *Maximizing Private Sector Contribution to Family Planning in the Europe & Eurasia Region: Context Analysis and Review of Strategies*. Bethesda: Private Sector Partnerships-One project, Abt Associates Inc.
- Barnes J, Vali J, Crosby D. 2012. *Total Market Initiatives for Reproductive Health*. Bethesda: Strengthening Health Outcomes through the Private Sector Project, Abt Associates.
- Brady C, Hemmings J. (n.d.). CARISMA II Best Practice Series: Models of Condom Distribution Across the Caribbean. http://www.carisma-pancap.org/attachments/179_Best%20Practice%20Study%20-%20Distribution%20Models.pdf, accessed October 2011.
- Chapman S, Jafa K, Longfield K *et al.* 2012. Condom social marketing in sub-Saharan Africa and the total market approach. *Sexual Health* **9**: 44–50.
- DKT International (D.K. Tyagi International). 2012. *2011 Contraceptive Social Marketing Statistics*. Washington: DKT International. [http://www.dktinternational.org/wp-content/uploads/\(2011\)/11/2011-Statistical-Mktg-Rpt2.pdf](http://www.dktinternational.org/wp-content/uploads/(2011)/11/2011-Statistical-Mktg-Rpt2.pdf), accessed October 2012.
- Drake JK, Espinoza H, Suraratdecha C *et al.* 2011. Stakeholder perceptions of a total market approach to family planning in Nicaragua. *Rev Panam Salud Publica* **29**: 329–36.
- Gardiner E, Schwanenflugel D, Grace C. 2006. *Market Development Approaches Scoping Report*. London: HLSP. [http://www.rhsupplies.org/fileadmin/user_upload/MDA_Documents/MDA_Scoping_Report_\(2006\)_10.pdf](http://www.rhsupplies.org/fileadmin/user_upload/MDA_Documents/MDA_Scoping_Report_(2006)_10.pdf), accessed October 2012.
- Harvey PD. 1999. *Let Every Child Be Wanted: How Social Marketing is Revolutionizing Family Planning Programs in the Developing World*. Westport, CT: Auburn House.
- Hemmings J, Brady C, Gray K. 2009. CARISMA II: The Total Market Approach. Caribbean Social Marketing Programme (CARISMA) II. <http://www.pancap.org/attachments/article/711/Programme%20summary-Total%20Market%20Approach.pdf>, accessed October 2012.

- Lefebvre CR. 2007. Conversation with Richard Pollard. On Social Marketing and Social Change: News and Views on Social Marketing and Social Change. [http://socialmarketing.blogs.com/r_craig_lefebvre_social/\(2007\)/11/conversation-1.html](http://socialmarketing.blogs.com/r_craig_lefebvre_social/(2007)/11/conversation-1.html), accessed October 2012.
- Longfield K, Ayers J, Htat HW, Neukom J, Lupu O, Walker D. 2014. The role of social marketing organizations in strengthening the commercial sector: case studies for male condoms in Myanmar and VietNam. *Cases in Public Health Communication & Marketing* **8**(Suppl 1):S42–S63.
- Meadley J, Pollard R, Wheeler M. 2003. Review of the Department for International Development (DFID) Approach to Social Marketing. London: DFID Health Systems Resource Centre. [http://hdrc.dfid.gov.uk/wp-content/uploads/\(2012\)/10/Review-of-DFIDs-approach-to-social-marketing.pdf](http://hdrc.dfid.gov.uk/wp-content/uploads/(2012)/10/Review-of-DFIDs-approach-to-social-marketing.pdf), accessed October 2012.
- Montagu D, Sudhinaraset M, Lwin T *et al.* 2013. Equity and the Sun Quality Health Private Provider Social Franchise: comparative analysis of patient survey data and a nationally representative TB prevalence survey. *International Journal for Equity in Health* **12**: 5.
- National AIDS Programme of the Ministry of Health. 2012. *Global AIDS Response Progress Report—Myanmar*. UNAIDS. http://www.unaids.org/en/dataanalysis/knowyourresponse/countryprogressreports/2012countries/ce_MM_Narrative_Report.pdf, accessed October 2012.
- O’Sullivan G, Cisek C, Barnes J, Netzer S. 2007. *Moving Toward Sustainability: Transition Strategies for Social Marketing Programs*. Bethesda: Private Sector Partnerships-One project, Abt Associates Inc.
- Pallin SC, Meekers D, Lupu O, Longfield K. 2013. A Total Market Approach. PSI/UNFPA Joint Studies on the Total Market for Male Condoms in Six African Countries. Individual case studies for: Botswana, Lesotho, South Africa, and Swaziland. Population Services International and United Nations Population Fund (UNFPA). www.psi.org/total-market-app, accessed March 2014.
- Pandit T, Bornbusch A. 2004. *Contraceptive Security: Ready Lessons 3—Taking a Whole Market Approach*. Washington: United States Agency for International Development (USAID). http://www.k4health.org/sites/default/files/Ready%20Lessons%20I_sect%203_eng.pdf, accessed October 2012.
- Population Services International. 2011. *Total Market Approach to Family Planning in Cambodia: A Case Study*. Washington: Population Services International.
- Sweat MD, Denison J, Kennedy C, Tedrow V, O’Reilly K. 2012. Effects of condom social marketing on condom use in developing countries: a systematic review and meta-analysis, 1990–2010. *World Health Organization. Bulletin of the World Health Organization* **90**: 613–22A.
- The Strategic Information and M&E Working Group. 2012. HIV Estimates and Projections, Asian Epidemiological Model, Myanmar 2010–2015. UNAIDS.
- United Nations Programme on HIV/AIDS (UNAIDS). 2000. *Condom Social Marketing: Selected Case Studies*. Geneva: UNAIDS.
- United Nations Population Fund (UNFPA). 2011. *Donor Support for Contraceptives and Condoms for Family Planning and STI/HIV Prevention 2010*. New York: UNFPA.
- Weinreich NK. (2010). *What is Social Marketing?* Weinreich Communications. <http://www.social-marketing.com/WhatIs.html>, accessed October 2012.