

September 22, 2016

- Cannabis
- Tobacco

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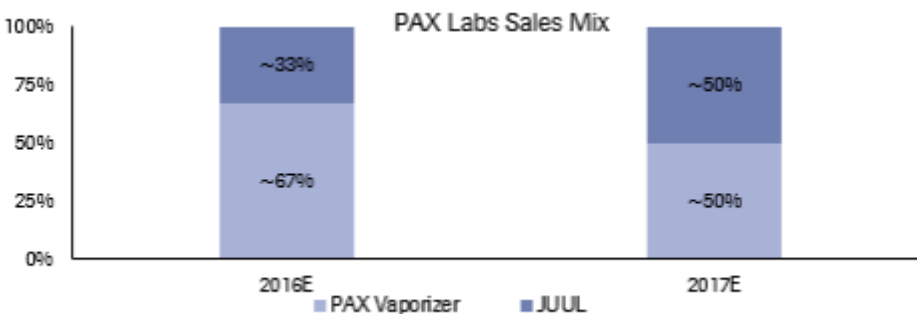
PAX Finds its Crown JUUL

The Cowen Insight

We recently met with privately held PAX Labs' CEO and CFO. The company's portfolio spans nicotine and cannabis vapor delivery, which we view as a key competitive advantage, reflecting the benefits of leveraging cross-over IP. With a planned ~5x increase in manufacturing, the capacity-constrained JUUL should see continued robust market share gains in nicotine vapor.

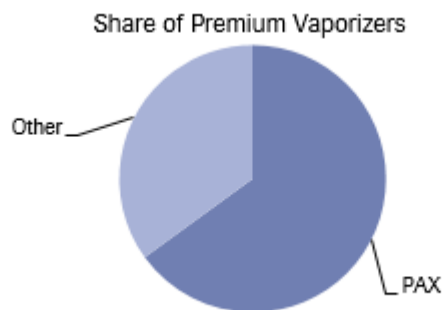
Key Highlights:

Last week we met with PAX Labs CEO Tyler Goldman and CFO Tim Danaher. PAX is generating robust growth by leveraging technological expertise in vapor delivery across nicotine and cannabis. Historically best known for its premium vaporizer PAX (and Ploom, which was sold to JT, and is now sold in Japan), the company is increasingly optimistic on its opportunity in nicotine vapor with JUUL. After initially launching JUUL in June 2015, the company's nicotine delivery system is expected to make up ~33% of sales 2016, and ~50% of sales in 2017.



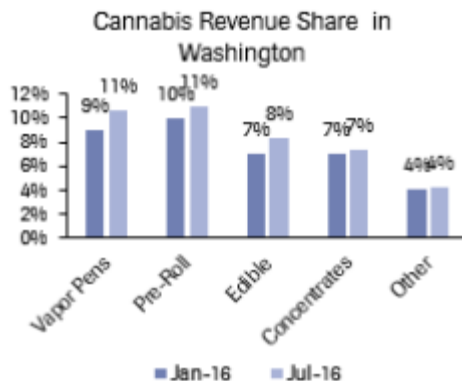
PAX Vaporizer

As discussed in our Ahead of the Curve Report, [The Cannabis Compendium: Cross-Sector Views On A Budding Industry](#), we believe the current \$6 bn legal cannabis market (and \$25 bn illicit market) could grow to a \$50 bn legal market by 2026 (assuming federal legalization). PAX brand vaporizers leverage the large and growing cannabis market, as the device can be used to vape tobacco, cannabis or other loose leaf products. As the market leader in super premium vaporizers, with a ~60-70% share, the current PAX 2 vaporizer retails for \$280. Despite this premium price point, PAX has sold over 1 mm units to date, which is particularly impressive as U.S. government survey data suggests that there are ~33 mm annual cannabis users in the U.S. (though that could admittedly understate the market, given response bias around a product category that is federally illegal).

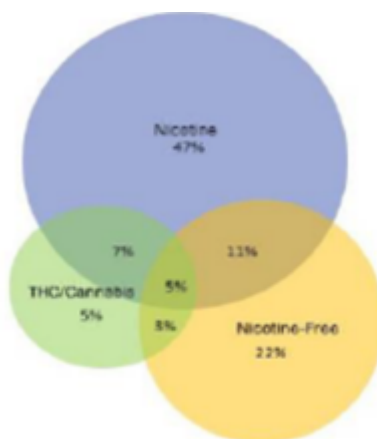


Source: Company Reports and Cowen and Company

The company will further increase its exposure to the cannabis category with their upcoming launch of PAX Era: a super-premium THC vaporizer, combining JUUL technology and the PAX equity. Expanding into THC vapor leverages current consumer trends, as vaping has been gaining share among cannabis users (as well as young adult tobacco consumers). We believe this is a textbook example of the opportunity to leverage vapor IP across cannabis and nicotine, as our Cowen survey found that 20% of vapers were using THC in their vaping devices. What is more, it offers an incremental margin benefit for PAX as they transition their cannabis-focused business away from only selling hardware, to also selling higher-margin cartomizers (which have better velocity, mirroring the razor and blade model).



Source: Headset and Cowen and Company

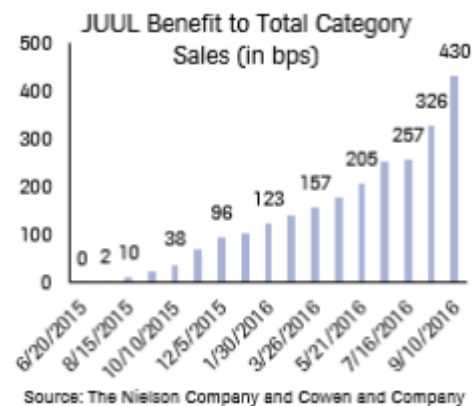


Source: Cowen Vaping Survey, April 2016

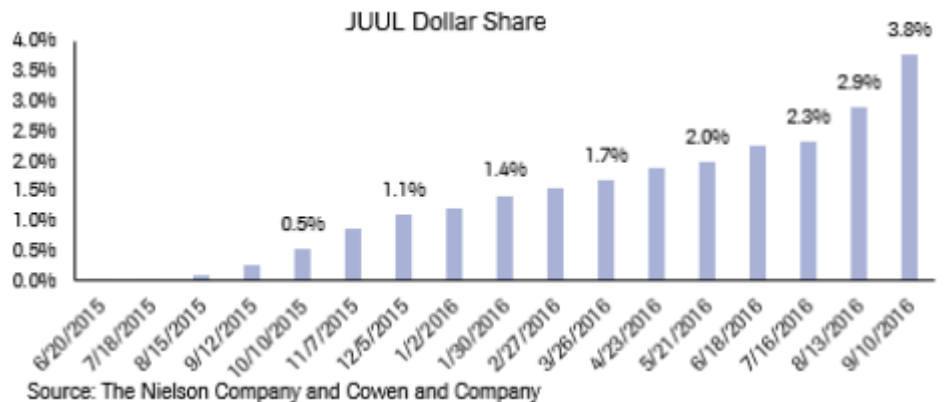
JUUL Nicotine Vapor

Since its initial launch in June 2015, JUUL has been a standout performer in a category plagued by trial and rejection. Indeed, the absence of consumer adoption has resulted in notable shifts in the competitive landscape, as the category (largely

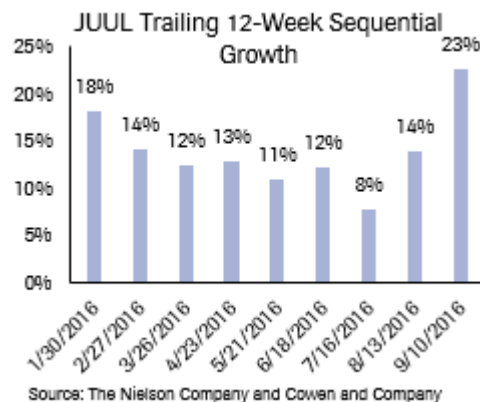
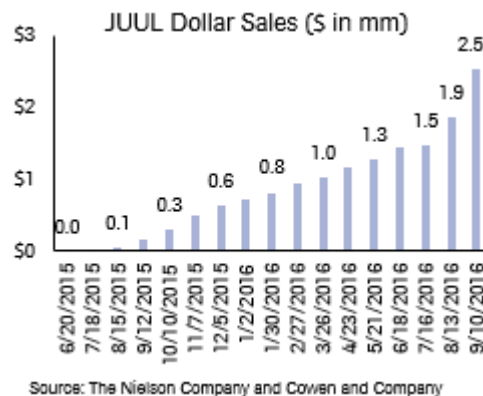
closed-end, in Nielsen-tracked channels) has seen five different market share leaders since 2011. Given consumer dissatisfaction with many of the products in the market, it is encouraging to see that new products are largely responsible for the category's having returned to growth (driven by JUUL and MO's MarkTen XL). For JUUL, we have seen the product's outsized growth result in an increasingly notable contribution to overall category growth, having contributed more than a 400 bps benefit to sales growth in the most recent Nielsen data.



In fact, JUUL has gained more than 300 bps of share in 2016 alone, including a near 100 bps gain sequentially in the most recent 4-week period. Despite this data excluding kit sales, JUUL has nonetheless achieved a ~4% share of the overall category, and a 6% share of cartridges. What is more, JUUL has achieved this success with a retail footprint of just ~12,000 stores (~7% ACV). This robust trajectory has resulted in growing pains, as the company is currently experiencing supply issues, despite producing ~1 mm cartridges per month. PAX Labs is quickly working to resolve these issues though, having expanded its third party manufacturing network, and investing behind higher-speed, automated filling equipment. As such, by early 2017, the company should have capacity to produce ~5 mm units per month. Once production issues are resolved, we'd expect JUUL to expand distribution, driving further share gains.

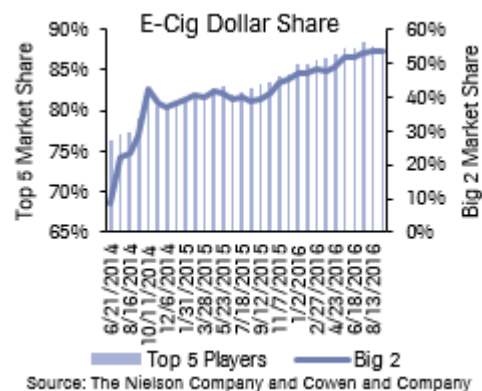
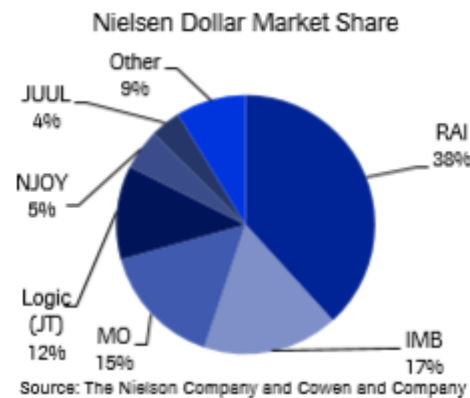


As noted above, given Nielsen's methodology, this share only represents sales of cartridges, and does not include starter kits (which retail for \$50), such that the \$2.5 mm in sales in the most recent period is likely understated. That said, cartridge sales have consistently grown sequentially, averaging double digit growth in 2016, and accelerating in recent periods.

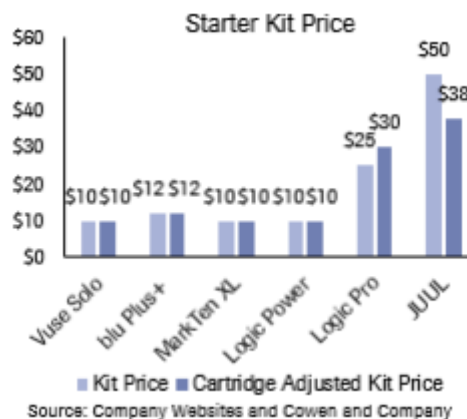


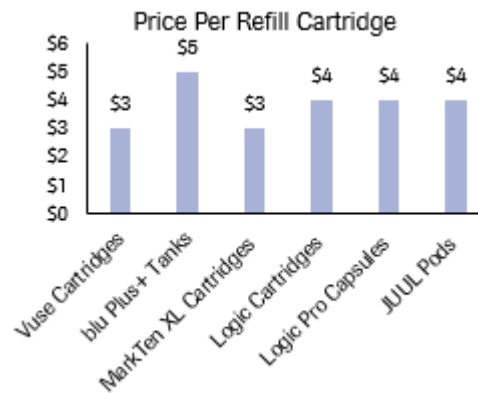
Given that the category is now dominated by big tobacco (MO, RAI, JT, and IMB), who hold more than an 80% share in Nielsen-tracked channels, JUUL's success is particularly impressive. Indeed, retailers have been reducing the number of brands / SKU's offered, reflecting continued share consolidation, as the top five players make up nearly 90% of dollar sales, compared to ~80% two years ago, making it particularly tough for new entrants. The big 2 (MO and RAI) have driven these share gains, as we continue to see share shakeout among the rest of the top 5. Indeed, we've seen notable share losses for JT's Logic (from 19% to 12%) and IMB's blu (from ~40% to 17%) since MO and RAI's national launches. This heightened competitive landscape is best exemplified by the challenges seen for NJOY, which filed for Chapter 11

bankruptcy earlier this week. While the Big 2 have established dominant positions, market share dislocation outside of the Big 2 leaves ample share opportunity for JUUL.



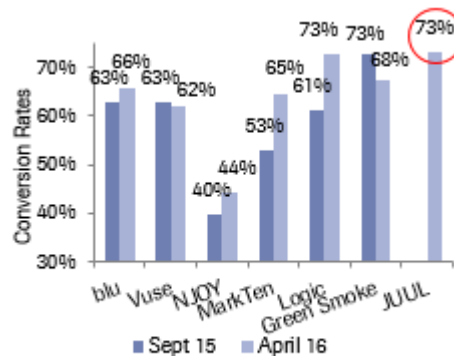
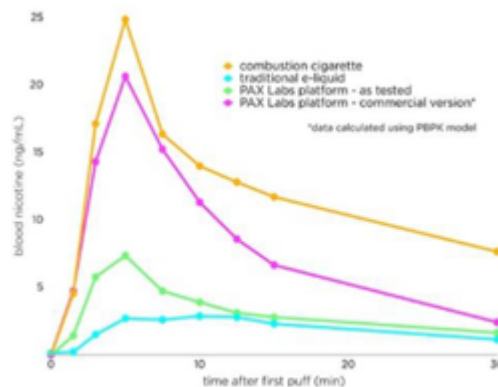
In addition to these competitive headwinds, JUUL's success is also particularly noteworthy given the product's premium positioning. Retailing at \$50 for a starter kit, JUUL's price point is ~5x that of competitors (though we would note that JUUL's startup kit includes four cartridges, while competitors generally come with one). The barrier to entry for initiation though has a fairly quick payback, as JUUL cartridges (called pods) retail at prices comparable to competitors.





Source: Company Websites and Cowen and Company

JUUL's traction with consumers, despite its premium pricing, reflects the products differentiated technology. As opposed to using free-based nicotine, like its competitors, JUUL leverages IP-protected nicotine salts, where nicotine delivery closely mirrors that of a conventional cigarette. The brand's resonance with consumers was also reflected in our Cowen Vaping Survey ([link](#)) which showed JUUL with among the highest conversion rates. In a post-deeming environment, providing consumers with a product currently on the market that meets consumer needs, could not only drive share gains, but also continue to fuel category growth.



Note: Defined as current use divided by trial use

Source: Cowen and Company Vaping Survey, April 2016

| Ticker | Rating | Price* | Price Target | Ticker | Rating | Price* | Price Target |
|----------------|----------------|-----------|--------------|---------------|----------------|-----------|--------------|
| KSHB | Outperform | \$2.13 | \$3.00 | MO | Market Perform | \$63.50 | \$67.00 |
| RAI | Outperform | \$48.44 | \$57.00 | IMB.LN | Outperform | 3,929.00p | 4,390.00p |
| 2914.JP | Market Perform | ¥4,048.00 | ¥4,350.00 | | | | |

*As of 09/21/2016

Valuation Methodology And Risks

Valuation Methodology

Cannabis:

Our valuation methodology is primarily based on DCF, followed by Price-to-Sales. In cases where GAAP net income includes large, non-cash items (e.g., restructuring charges), we may use non-GAAP EPS.

Tobacco:

Our valuation methodology is primarily based on Price-to-Earnings (P/E), followed by Relative Price-to-Earnings (vs. the respective relative index) as well as Enterprise Value to EBITDA (EV/EBITDA). In cases where GAAP net income includes large, non-cash items (e.g., restructuring charges or the resolution of disputed MSA), we may use non-GAAP EPS.

Investment Risks

Cannabis:

Cannabis is an emerging industry and is subject to regulatory headwinds. While over 50% of the population is in favor of legalization, only a few states have thus far legalized cannabis for recreational use and the product remains illegal at the federal level. Looking forward, much work and change still needs to occur in order for this industry to realize its full potential.

Tobacco:

Global tobacco demand is subject to a number of potential headwinds. Most notably, increased awareness of the risks associated with traditional tobacco use, and resultant regulatory actions (e.g., indoor smoking bans, enlarged textual or graphic warnings, and / or plain packaging) can negatively impact smoking incidence and/or per capita consumption, and thus industry volumes. What is more, the industry is also subject to risk from disruptive tax increases, which result in higher prices, and can also depress consumption. Further, while diminished, litigation risk also exists.

Addendum

Stocks Mentioned In Important Disclosures

| Ticker | Company Name |
|---------|-------------------|
| MO | Altria Group |
| IMB.LN | Imperial Brands |
| 2914.JP | Japan Tobacco |
| KSHB | Kush Bottles |
| RAI | Reynolds American |

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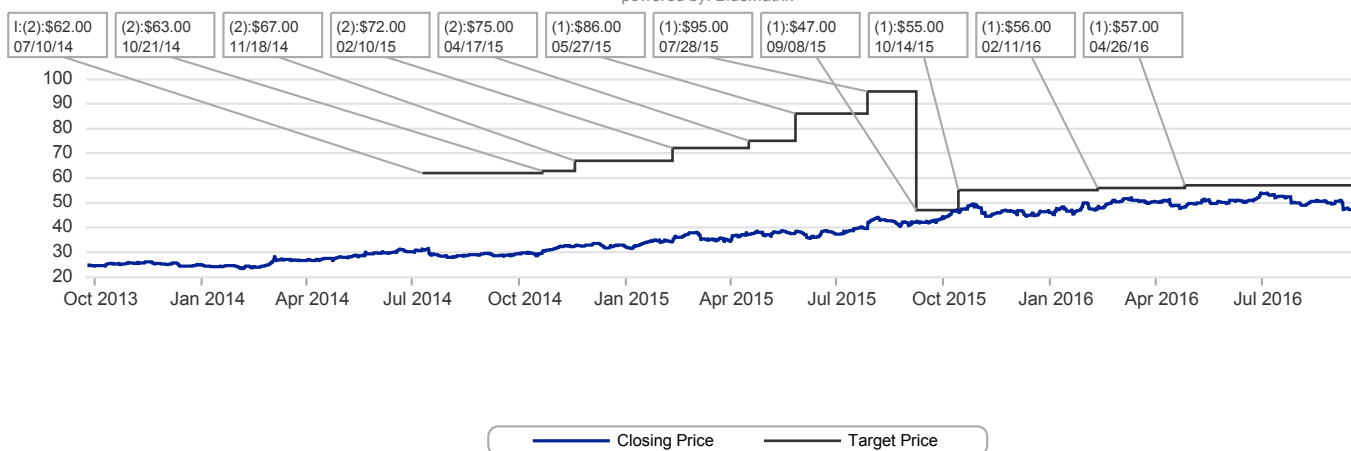
Altria Group Equity Research Rating History as of 09/21/2016

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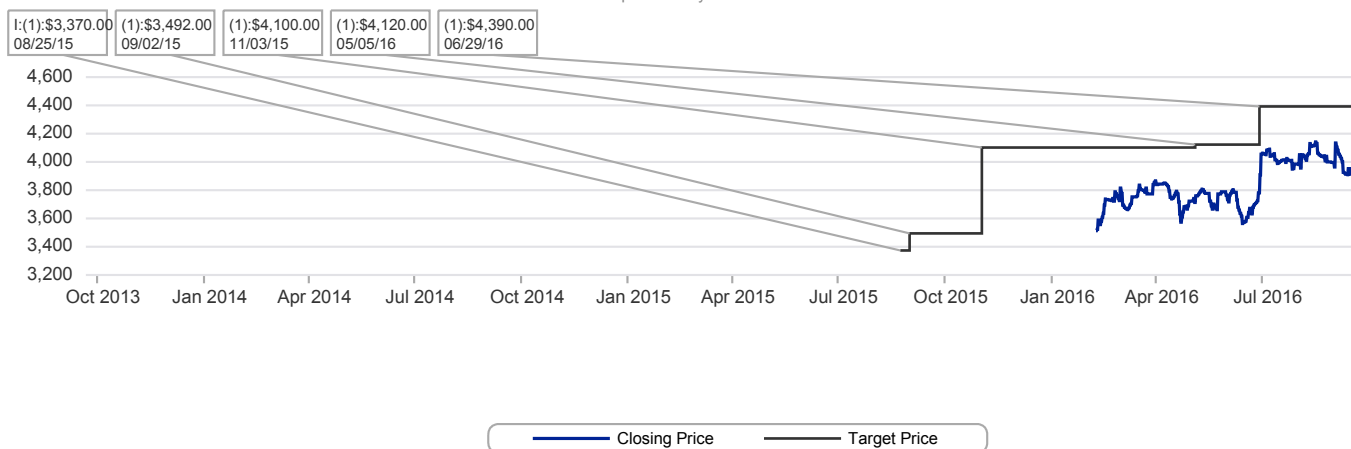
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Legend for Price Chart:

I = Initiation | 1 = Outperform | 2 = Market Perform | 3 = Underperform | UR = Price Target Under Review | T = Terminated Coverage | \$xx = Price Target | NA = Not Available | S=Suspended

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