Arlo Technologies:
Investment Case
Ticker: ARLO, **Market Cap:** $330mio

Richard Schäli – 1st of Feb, 2023

Summary

- **Recommendation:** I recommend buying ARLO at its current price of $3,75. Arlo will be succesful in upselling their customers to a $13 monthly subscription. The share of the subscription business in the revenue mix will increase massively and eventually make up two thirds. This revenue stream is a >75% gross margin business that could propell Arlo to become a highly cash generative business.
- **Business:** Arlo currently has ~7mn registered accounts on their platform, that bought their DYI camera systems. It makes money mainly by: (1) Selling subscription plans that allow the customer to store/analyse recorded footage on the cloud; (2) Selling best in class surveillance cameras. I estimate that its TAM is ~$6bn, which would imply market share of only ~8%.
- **Top-line:** The market for DYI surveillance systems is growing at a 18% CAGR and is expected to reach $20bln by 2028. Drivers for revenue growth are (1) Growth of total number of paid accounts, (2) Increased marketing efforts to drive brand awareness – marketing spend has been close to 0 in the past four years. Arlo benefits from several trends: (I) Consumers not wanting Big-Tech like (Amazon or Google) in their homes, (II) Consumers going with much cheaper DYI systems, instead of pricey legacy broadband cameras.
- **Margins:** As the subscription business is growing in share, gross margins are likely to double to the 50-60% range in the next 5 years, while consequent cost optimisation will lead to a LT 20% FCF Margin (Adj. For SBC)
- **Competition:** In my view Arlo is operating in a market that allows for many dominant players to co-exist. Arlo will carve out the segment of the less price sensitive customers
- **Management:** Matt McRae has been CEO ever since the company went public in early 2018. He has a 2% stake in the company, worth around $6mn. The remaining members of the management team have average tenure of 4,6 years (ever since Arlo went public), but lack significant ownership. Arlo has a strong Product-DNA that made them lose significant market share to Ring in the past years.
- **Valuation:** Dampening consumer demand in the US moves Arlo's retail partners to increase promotions, which leads to lower hardware revenue which still makes up 60% of total revenue. Arlo is currently trading at 2,5 times 2028' Cash/Share (adj. For SBC & Shareholder Dilution)
- **Risks: 1)** Ring to establish a monopoly in the market by catching up with Arlo's technological capabilities; **2)** Arlo not being able to convince consumers to buy their pricey cameras that are twice as expensive as from its competitor, Ring; **3)** Excessive promotional activity by its retail partners to lead to a potential 30-40% reduction in hardware sales;

Background
In 2014, Netgear acquired a brand that specialized in cameras. They quickly realized that this could be an amazing market where there were very few vendors at the time. Ring and Nest were not among them. So in 2016-2017, they created and conceptualized their "internal startup", Arlo.

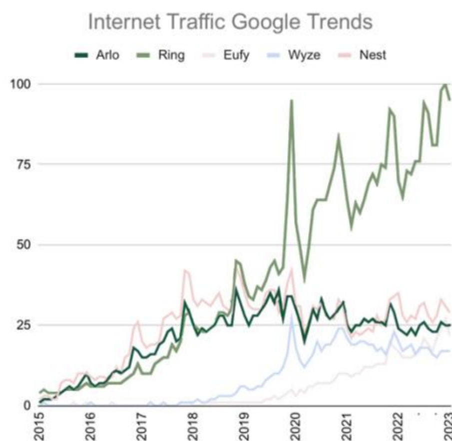
Netgear had its own pace and Arlo scaled quickly. So they spun it off. The two were completely different companies. Arlo had a different business mentality. It had a different agile mentality from a technical standpoint. The whole technical stack was different. The mentality was different. The culture was different.

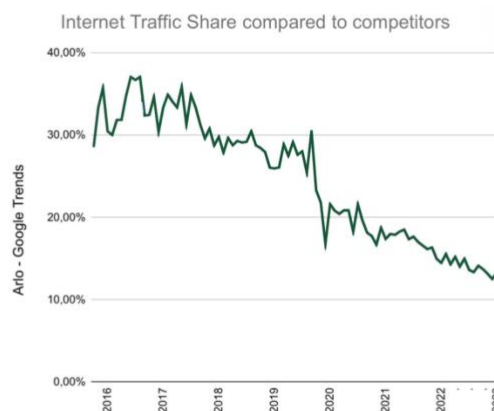
One problem with Arlo, however, was that for a long time it focused too much on the design of the hardware and not so much on the really big opportunity: billing customers monthly with a subscription plan.

Of course, one could argue that this was also the basis for the company's great success. Arlo was one of the few vendors that provided seven days of free cloud storage for its cameras. Ring, Nest and all the others charged a $10/month subscription.

That was Arlo's biggest competitive advantage at the time. People were buying their cameras because they didn't want to pay Ring’s recurring subscription-fees. The free cloud storage for seven days was originally a feature to gain critical mass, but quickly evolved into Arlo’s main selling point. People were willing to pay more for the camera so they didn't have to pay for a subscription.

The original plan was to reach critical mass in this way within the first 12 months of Arlo's launch, and then reduce it again. It was a very interesting proposition to consumers and it really had a big impact on initial product adoption. Arlo quickly became the market leader and owned 40% of the outdoor camera market in the US.





The free seven-day cloud storage offering attracted millions of customers, but really inhibited subscription revenue. At a certain point, it became very difficult for Arlo to cut the free cloud storage offer. It would cost Arlo massive penalty in their sales volumes, but on the other hand, could also make the business much more profitable. Their product was rich enough and could still be favorabely compared to other cameras like Ring, but management decided at the time that it wasn't a worthwhile move for them to cut the free cloud storage, so they went beyond the 12 months initially planned and it became more and more part of Arlo's identity.

Does it stand a chance against Ring?

Technologically I would say, Arlo was actually always ahead of the game. Obviously this is because a lot of Netgear's infrastructure was copied and pasted into the organization. Resources were divided up and all kinds of system architects and experts were brought in to Arlo. So there was always kind of an expertise advantage in software and wireless that Ring couldn't match. Ring’s advantage was Amazon's massive distribution power.

Shortly after Amazon bought Ring, they hired Shaq as a spokesperson, who kicked advertising into high gear and really helped the company launch. They used the power of the media to cover up their product shortcomings. Yes, Arlo has a great product, but Ring had Shaq.

Everyone in the industry knew that Arlo had the best technology, the best product. Arlo had invented the wireless camera category and Ring had invented the doorbell camera. Back in 2016, the smart home market was not well enough defined and it really looked like the two were operating in separate markets. But slowly Ring, the doorbell company, picked battlegrounds where Arlo didn't have a presence or where it had weaknesses. And after launching product after product, a Ring ecosystem emerged that would take over Arlo’s dominant role.

Fall from Grace

In late 2018, they launched the Arlo Ultra 4K, a four-camera kit for $1,000. It was a debacle. For one thing, it was a completely counterintuitive thing to do. At the time, the market was saying that the average selling price (ASP) for cameras was plummeting as low-cost Chinese vendors entered the market. The ASP for a single video doorbell was $120, but Arlo released a four-camera kit for $1,000? That's more than double the price per device.

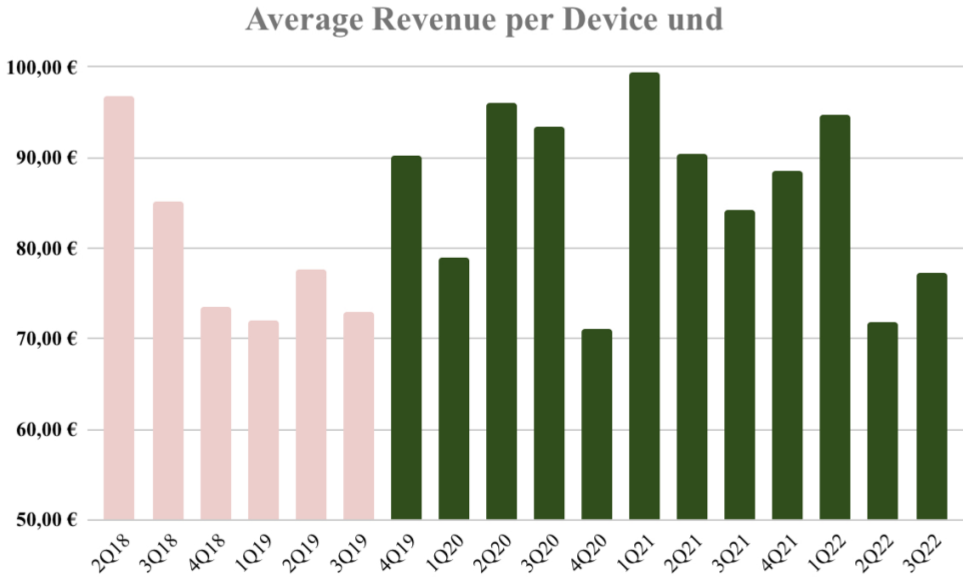
The Ultra came to market with tons of bad reviews. At one point, Arlo was even forced to pull it off the shelves and re-release it a few months later.

At the time, Arlo was the only provider with free cloud storage for seven days. Everyone else, including competitors like Ring, charged $10 per month. And really, Arlo's biggest selling point was that there was no subscription associated with it. The free seven days were really the main driver for Arlo's early success. But now it was all about the "Arlo smart" subscription plan. Customers were very unhappy: they were spending $1,000 on this kit, and after the first year, Arlo was telling them they had to spend another $100 a year on services? So that was a big problem.

Another big factor in Arlo's 2019 revenue decline was that they really blew it with their promotional strategy: Let's say Arlo projected $100,000 in sales for calendar week 20, and let's say at the end of the week they only sold cameras for $60,000. The guys in the marketing department will say, "Oh, crap, we missed by $40,000. We've got to make up for that now. So, Costco, Best Buy, you guys run a promotion and we'll try to make up what we missed last week."

What happens then is that this kind of promotional activity just becomes a vicious cycle, that you can never get out of. When you're on and off promotion all the time, what happens is that the the consumer will not be an impulse buyer anymore, but instead you create a buyer that does researched purchases.

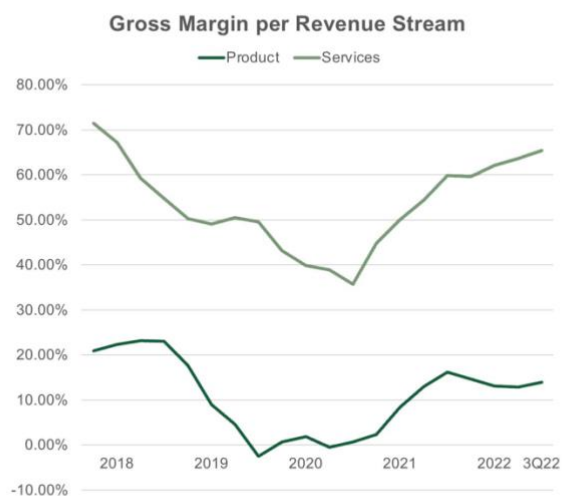
A customer who is researching an Arlo purchase carefully, is seeing price changes over time. One week on promo, two weeks off, one week on, two weeks off or a week-on, week-off, week- on, week-off, that price continues to fluctuate. So, Arlo now trained the customer to wait for that lower price. This obviously caused Arlo to sell for a lower ASP, revenue per device went down. As soon as Arlo was back at full retail, sales went to zero. They were going to go back on promo the next week and sales went through the roof. An certainly they didn't make up everything they missed the week before. So, it's really a vicious cycle that they got themselves into, where they‘ve got all these vultures out there that wait for that low-low price.



Arlo - the software company
After two difficult years, in 2020, Arlo’s management finally realized that remaining a hardware-first-business might not be worthwile. By the end of 2019, the age of the subscription business had arrived. The world was moving toward subscriptions. You pay a few dollars and subscribe to the Arlo service. That was the focus. The devices that would be sold from now on would no longer offer free seven-day cloud storage, and there would be a subscription fee of $10/month.

The shift to a service-based business model was a paradigm that caused some turbulence within the company. *„Arlo is no longer a hardware company. Arlo is a company that sells hardware because of its very strong software and platforms“* was the new theme.

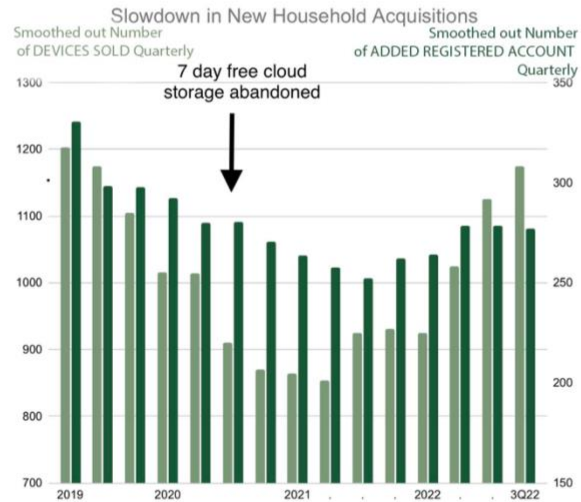
That transition was a really necessary step. Hardware sales had completely left the triple-digit growth path after the Arlo Ultra debacle and were down 25% from their all-time high in 2019. Gross margins turned negative on their hardware product as several technical issues had to be fixed, leaving not a dime for any meaningful marketing spend. In addition, most of the original Netgear employees who had built Arlo in its early day when it was a sort of "in-house startup", were leaving the company in early 2019, and the company's future really didn't look bright.



Now it was time to really monetize the millions of households that had Arlo cameras installed. As mentioned earlier, this created a lot of headwinds and frustration.

Best Buy Review
„ This is why I won’t buy a newer Arlo. Pay this much for a camera and can no longer record without paying a subscription. I’m glad I bought the older version. Also the not being able to remove the battery to charge is a bad design. I used to recommend Arlo but no longer will sue to these two issues they brought upon themselves“

Management's fear that Arlo would lose its main selling point if it eliminated free seven-day cloud storage came true. The number of devices sold dropped by 30% when Arlo switched to the more subscription-based business model. And I also think Arlo will make it through this rough patch. These days, everyone is charging $10 a month. People will get used to it, and new customers won't even know the old rates, so they won't care.



Looking at the last few quarters, the number of devices sold seems to have stabilized, so it's likely that consumers have gotten used to it and see subscriptions as normal. In a year or two, no one will talk about it anymore; it will be the new normal to pay a subscription on top of the pricey camera.

I buy because of the software - but it's all about the hardware.
Now that customers are, in a sense, "forced" to buy a subscription, since the free cloud storage has been taken away from them, Arlo is poised to become a software-services company. When I used the word „forced“ I didn’t mean that it’s just a useless product if you don't subscribe. You can still check live who's at your door - but really not much more than that. Because the main thing you're paying for with a subscription is storage, and that's super valuable. As millions of new households convert to paid accounts, the revenue mix will be much more skewed towards the high-margin subscription business. The greater the subscription revenue share, the more cash generative will Arlo be.

With an annual churn rate of 5% and a conversion rate of 80%, it seems like Arlo has really made this service addictive to some degree. Once you get used to looking who was at your door, or what your kids did in the backyard, you don't want them to be deleted after a day and you are willing to pay $13/month to get that insight.

It's clear to everyone that Arlo is about to become a subscription business, but let's not forget who makes it possible. The hardware.
Ultimately, it comes down to how well Arlo is able to sell its expensive hardware to the masses so that it can sell the high-margin subscription service that goes with it.

Losing Market Share to Low-Cost Players

The market for smart surveillance systems has really grown in recent years, and Arlo has not grown at all, or in some cases has even declined. The 25-30% market share that Arlo had in 2017 has diminished into single digits.

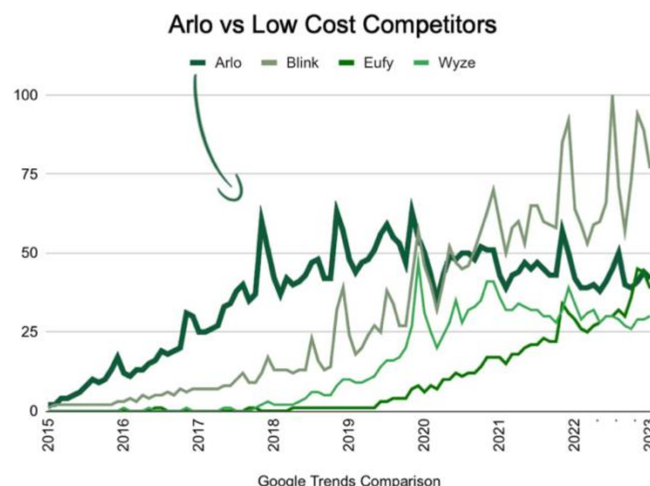
The security camera market is a very brutal market. It is highly fragmented and competition is fierce. Yes, Arlo's product was kind of innovative, and the DYI approach was cheaper than what was on the market, but it would be a tough sell to get people to buy it over already established security camera systems.

Ring had a clever approach. The company came to market with this completely new idea of a doorbell with a video camera. And it didn't stop there, as Ring used the doorbell only as an entry point into the home and then upsold entire camera systems to its customers. Clearly, spending advertising dollars on doorbells and then encouraging customers to buy cameras yielded a much higher ROI than Arlo, which began by marketing a security camera for which there were already a hundred established alternatives.

Ever since its initation Arlo had quite some financial stretches. It was a hardware business, gross margins barely ever exceeded 20%, and squeezing a positive bottom line from that would be very difficult. So while all of Arlo's competitors spent a lot of money on advertising to get to market, Arlo spent virtually no money on marketing in recent years. There just wasn't enough cash flow to spend on marketing.

Unable to promote their product in a meaningful way, Arlo was severely hurt by the influx of cheap cameras from China. An Arlo product is just super high-priced, and so of course there is still a niche market for people who are less price-sensitive, but the options for a decent camera at a lower price have increased tremendously in recent years.

The offering of these low-cost brands is simply unbeatable, and they seem to be grabbing a significant market share. At least at the topline they are doing well, but any camera company that sells at 50% below the industry ASP and offers seven days of free cloud storage on top of that, simply doesn't have a sustainable business model.



Arlo is holding very strongly to its price tag, and it's unlikely to lower prices. This will certainly allow Arlo to capture the high-end market, and perhaps the market of really privacy averse people who don't want Amazon (Ring) or Google (Nest) in their homes.

That's actually Arlo's biggest selling point: while it integrates very well with smart home devices like Alexa/Apple Homepod, etc., it's still an independent brand that doesn't send your information to a centralized database of a big tech company.

I would say that Arlo can afford to remain a high-end product simply because it is "independent", but also because it has probably the most advanced tech capabilities. I would argue that Arlo is perhaps the strongest innovator in the market, and even ahead of Ring. And that's not just about the hardware, but also the service offering, which has many more features than Ring. It does a better job with object detection and facial recognition. And for consumers, the app's functionality is just as important as the hardware itself. Going back to the low-cost brands, we could also argue that consumers still prefer to buy Ring, Nest, or Arlo over the cheaper products from China because the apps are much better.

Arlo's software capabilities are truly one of the strongest. According to a former senior product manager at Arlo, more than half of the company's 350 total employees are involved in some way in the development of the software portion of the business. The main component however that differentiates Arlo's software from companies like Ring or Nest is the base station.

Although some consumers don't like base stations and it's a hassle to install and find a place to plug them into Ethernet, it's an amazingly useful system. First, it bundles a lot of the electronics that would otherwise have to be built into each camera. This is obviously very cost effective for Arlo to manufacture. Secondly, it also brings clear benefits in terms of connectivity and data processing. Once the base station is connected to a households WiFi, all the cameras can connect to it wirelessly and send all the rolling footage in real time to the base station, where all kinds of intelligence can be applied.

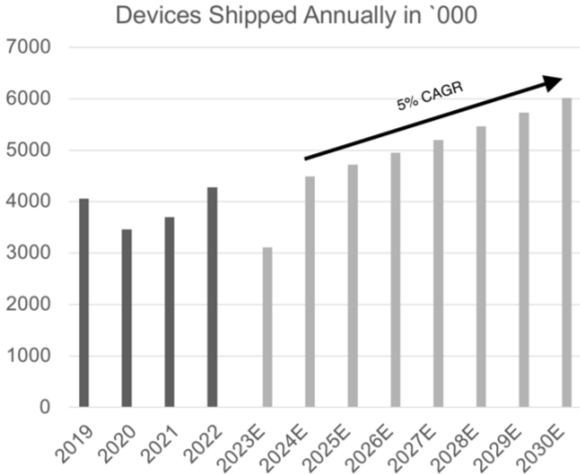
Ring and Nest, which operate without a base station but solely through the cloud, often provide a poorer customer experience. There are many compromises that need to be made. The battery drains much faster and the device really needs to be used as little as possible. It has to constantly send tiny shots to the cloud, to which things like facial recognition and other intelligence can then be applied. With Arlo, a lot of the computing can be done in the base station, resulting in a much smoother experience.

How big is the opportunity?

One of the reasons Ring has worked so well as a business model is that the company has always been able to effectively use the cash flow from its subscription revenue 1) for advertising, their aggressive marketing strategy, and 2) lowering the price point hand in hand with the ASP of the industry over time, even offering a camera for as low as $59 now.

While I don't think Arlo's management would ever consider cutting prices for their cameras, the additional cash flow generated by subscriptions will give Arlo more options to increase marketing spend. The product is great, and I'm convinced it just needs more awareness. The hardware part of the business will likely grow again once Arlo allocates some money to marketing.

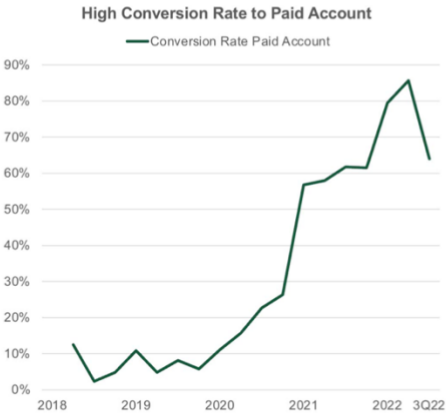
The global market for DYI cameras is growing at about 15% every year, Arlo may be moving slower but will capture the market of people who are 1) less price sensitive or 2) really don't want big tech companies, Amazon and Google, in their homes. And as long as Arlo manages to maintain its technological superiority over Ring, there is nothing to stop the hardware business from growing steadily at about 5% per year.

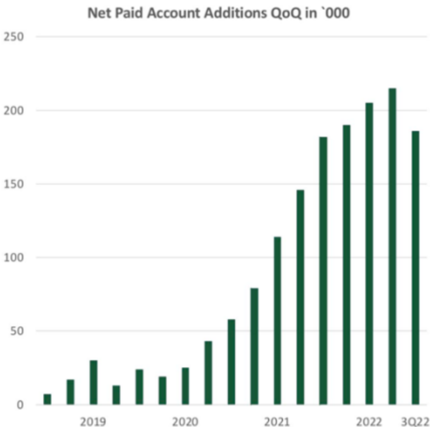


Being realistic, Arlo will never be what it once was, and the way I see it, they're only going to grab the high-end of the market – Ring has won the game, and pushing it from the throne will be impossible. Simply because Amazon's distribution power is so powerful.

The price of Arlo devices will likely remain at constant levels, while average devices per user may increase slightly as Arlo expands its line of "smart home" devices. But as I've pointed out several times in this article. The hardware part of the business is not the exciting part. It is a critical component and enabler, but the reason I really buy this company is the subscription division.

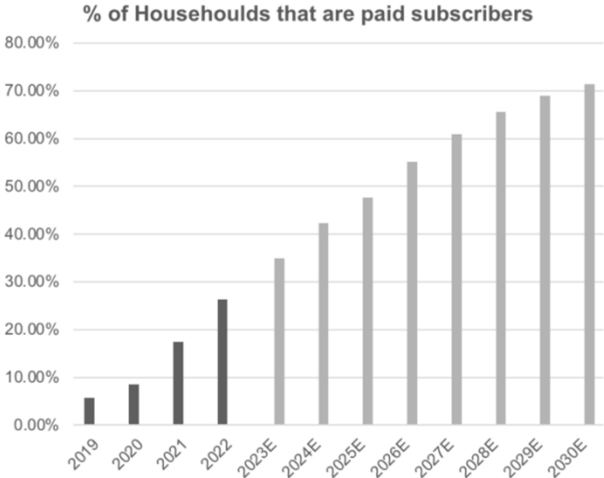
Arlo is already achieving spectacular conversion rates in the subscription business. While according to a former director of Ring Europe, Ring's conversion rates are above 75%, Arlo is seeing spectacular conversion rates of sometimes even over 80% (although this figure is still quite inconsistent).





When comparing Ring to Arlo, it's important to keep in mind that Arlo appeals to a different set of customers who are truly concerned about security and are willing to pay more for an independent brand. For these customers, a monthly fee is acceptable, and conversion rates for the subscription will likely be high.

Conversion rates are probably one of the most important factors to consider when evaluating where Arlo's subscription business is going. I forecasted that by 2030 an additional 10 million households will join Arlo's ecosystem. At an 80% conversion rate this would mean that 8 million households would start paying a $120 subscription fee. What an exciting business, if you're earning a billion dollars in recurring revenue, and have a 80% gross margin on that! This would be literally printing cash.

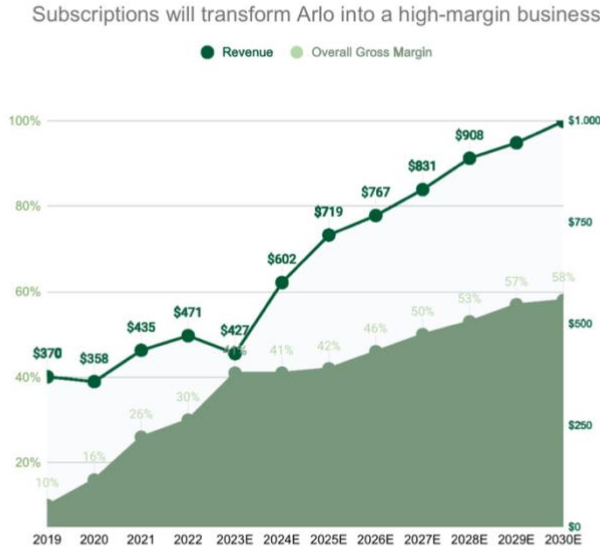


Unfortunately, the $120 subscription fee does not translate into $120 in revenue, and there are a number of factors that complexify service revenue. Upon my request Arlo's IR told me that while for the domestic retail business and the subscribers added through the Verisure partnership in Europe, it is reasonable to assume that their $10 per month plan (recently increased to $13) is fairly representative of their domestic retail ARPU, there are additional factors that lower revenue per subscriber.

Because of its relationship with Verisure, Verisure's pricing is usage-based, which means its revenue per subscriber is lower. Still, the company maintains a healthy gross margin in this business.
In addition, there are non-recurring enginerring costs (NRE) for the work Arlo does for Verisure to develop a custom camera to their specifications. These costs significantly reduce the $120 revenue, bringing it down to currently $85. Since these NRE costs vary and tend to increase with additional partnerships, it is very hard to forecast where the „revenue per subscriber“ metric is going. For my forecast I made the assumption that it would bottom out somewhere in the $60s/per subscriber.

While this is kind of a complication in modeling the evolution of the Arlo subscription business, I think it's pretty clear that an additional 10 million households subscribing to your "Arlo secure plan" is a massive opportunity.
You also have to remember that the existing 7 million households that have Arlo installed will need to replace their old camera after 4-5 years. For the Pro2 camera and older models, storage is still free, but starting with the Pro3 camera, which was launched in the fall of 2019, users will now have to pay a subscription. So in 2025, we will likely see the first households needing to purchase a new camera system that no longer has the free 7-day storage – it will be interesting to see whether those stick to Arlo or go for Ring.

As subscriptions grow as a percentage of Arlo's total revenue mix, margins will improve massively. The inherent gross margin for services will likely be around 80%, a typical software margin. Combined with the hardware margin of 15-20%, the total gross margin could be close to 60% by 2030.

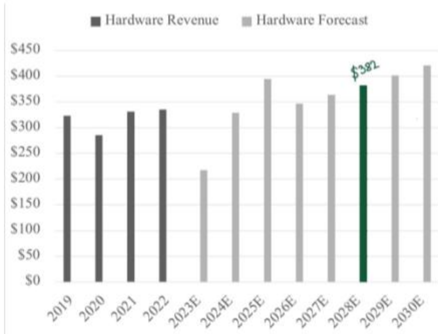


Five years from now, in 2028, you'll get a company that has $1 billion in revenue, notes a 13% revenue growth, a 55% gross margin, and 15% FCF* margin (adjusted for SBC). Adjusting the FCF of $150 million for an assumed shareholder dilution of 6% per year through 2028, it would result in $1,05 FCF/share.
Applying a conservative 15x multiple to this free cash flow, we would arrive at a share price of USD 15.75. An upside potential of 320% from current levels, corresponding to a 5-year CAGR of 33.5% p.a.

For these returns to materialize, management must be able to keep administrative costs constant so that a most of the subscription revenue can be converted directly into free cash flow. In addition, Arlo's hardware DNA must transform into marketing DNA. Ring has been very successful in selling o.k. cameras to the masses thanks to its brilliant marketing. I'm still on the fence about whether it's a disadvantage that Arlo has over-optimized the product and is therefore still too high-priced. For the average consumer, the technological difference between an Arlo and a Ring camera is hard to see at first glance, but the price difference is there.

Topline

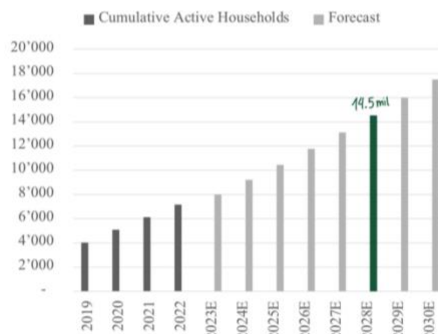
Sizing the Opportunity by 2028



$382 million
Hardware Revenue

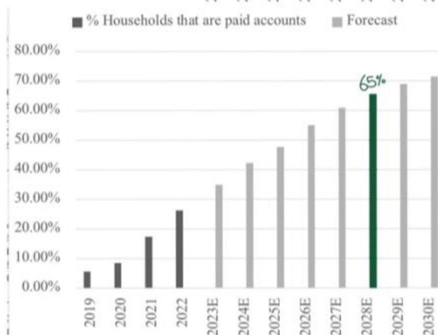
Base

+



14,5 million
households

×



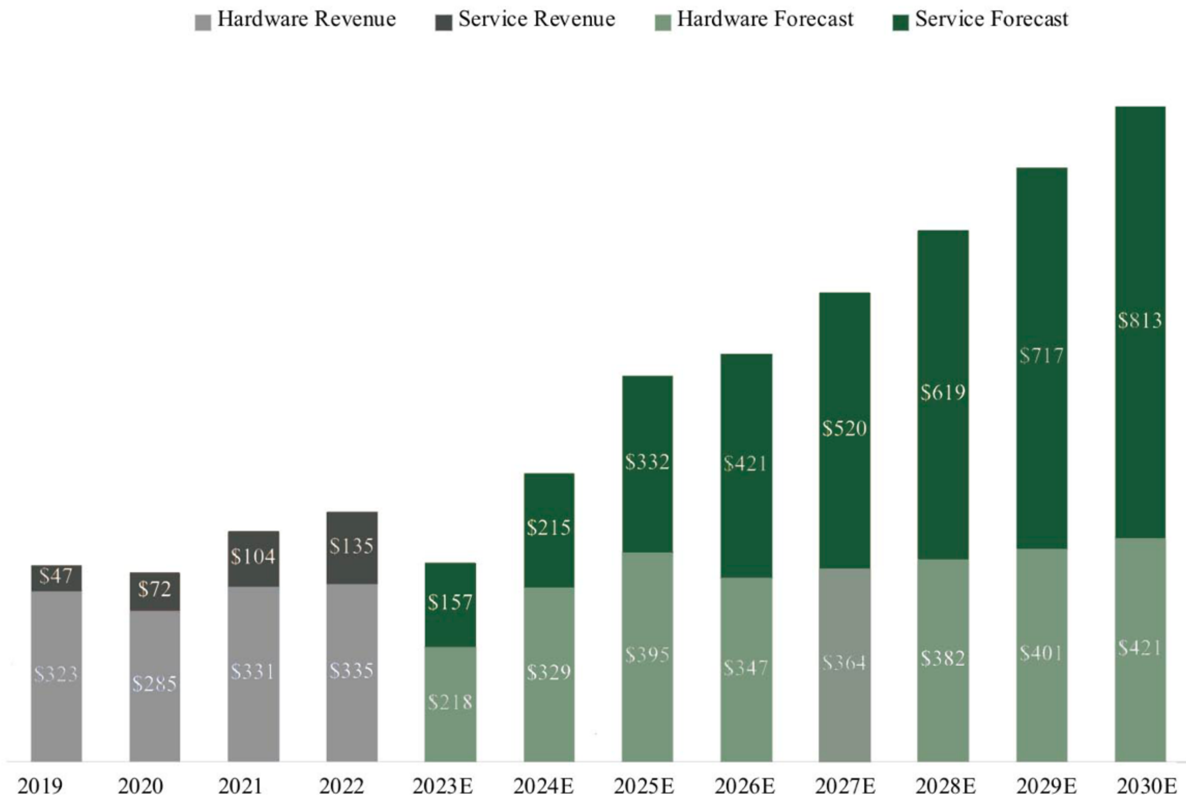
65% of them,
subscribers

×

$65 service revenue
per paid account

New Business Model

$1,0 BILLION
in total revenue



Bottomline

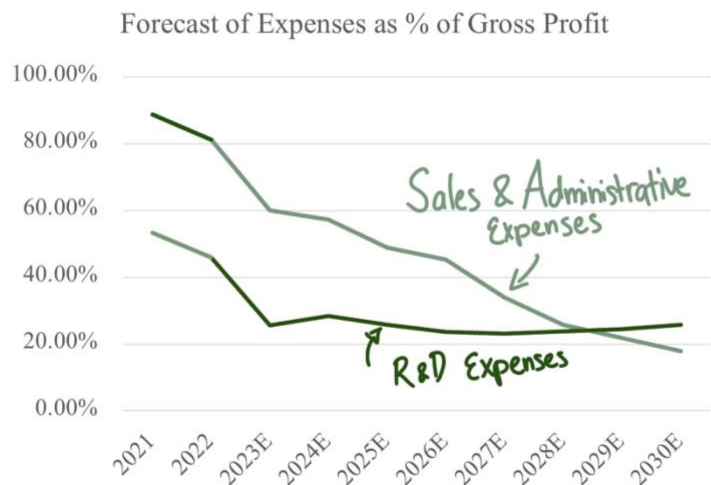
Exhibit, Earnings Call 3Q2022:

> *While we were pleased with our execution against a challenging supply picture, near the end of Q3, we started to see a shift in consumer behavior, where broad-based inflationary pressures, coupled with the threat of recession are dampening consumer demand industry-wide.*
>
> *With a weaker demand outlook, our retail partners are moving to increase promotions and lower inventory. In consideration of this, we took immediate action to adjust our strategy and match our operational footprint to this new outlook for Q4 and 2023.*
>
> *First, we decided to pause, our branding campaign. As we discussed, the initial awareness spend was a test implemented to measure via paid account uplift over our baseline subscriber run rate.*
>
> *However, despite creating nearly one billion impressions and a promising list in consideration in the first six weeks, the volatility of the baseline in this market makes it difficult to effectively measure and evaluate the efficacy and ROI of the spend. So this spend is paused indefinitely, until we see the market return to a more positive and stable trajectory.*
>
> *Second, we initiated a review of expenditures across the company to identify areas of further optimization of our business. We have well-defined plans to lower run rate in various areas of OpEx to ensure we are structured to maintain our most important levers of top line growth and achieve our long-range plan in the most efficient and disciplined manner"*

As Arlo optimizes operating costs, I believe positive FCF for the full year is no more than a year away. However, taking into account stock-based compensation, we won't see positive FCF until 2025 or even 2026.

I expect Arlo's awareness campaign to relaunch in early 2024. If we annualize the $8.5 million spent on the awareness campaign in the third quarter of last year, we can estimate that Arlo will spend about $30 million to $40 million on additional marketing efforts. It is likely that this number will however increase once a clearer picture of ROI is available.

I am optimistic that, thanks to the OpEx optimizations, administrative costs can be pushed to a much lower level than they are now, and eventually, even together with the increased marketing spend, will only represent about 25% of gross profit by 2028, instead of the current 80%. R&D spending will likely be increased in line with Arlo's revenue growth. This is absolutely necessary, because all that differentiates Arlo from Ring at the moment is its technological advantage and perhaps design.



Bottom-Line Forecast All numbers in $mln except for per share and %

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Products Revenue	$323	$285	$331	$335	$218	$329	$395	$347	$364	$382	$401	$421
Services Revenue	$47	$72	$104	$135	$157	$215	$332	$421	$520	$619	$717	$813
Total Revenue	**$370**	**$357**	**$435**	**$471**	**$375**	**$544**	**$727**	**$768**	**$884**	**$1'001**	**$1'118**	**$1'234**
Total Gross Profit	**$36**	**$55**	**$111**	**$139**	**$139**	**$203**	**$307**	**$374**	**$461**	**$549**	**$639**	**$718**
Gross Margin	*9.70%*	*15.51%*	*25.52%*	*29.57%*	*37.07%*	*37.41%*	*42.30%*	*48.75%*	*52.10%*	*54.84%*	*57.18%*	*58.20%*
SG&A	$105	$100	$98	$113	$83	$116	$150	$170	$156	$141	$139	$128
R&D	$69	$60	$59	$64	$36	$58	$79	$88	$106	$130	$157	$185
Total OPEX	**$174**	**$160**	**$158**	**$177**	**$119**	**$174**	**$230**	**$258**	**$262**	**$271**	**$296**	**$313**
Net Income	-$86	-$101	-$56	-$41	-$14	-$7	$24	$54	$121	$187	$240	$290
FCFE (Adj. for SBC)	$29	-$54	-$31	-$49	-$48	-$8	$37	$84	$151	$217	$270	$320
Margin	7.8%	-15.1%	-7.2%	-10.5%	-12.8%	-1.4%	5.1%	11.0%	17.1%	21.7%	24.2%	25.9%
NET CASH/SHARE (Adjusted for SBC & Dilution)	**-$0.71**	**$0.38**	**-$0.69**	**-$0.38**	**-$0.41**	**-$0.56**	**-$0.14**	**$0.28**	**$0.89**	**$1.49**	**$1.97**	**$2.41**
Shareprice, if a hypothetical multiple of 15x FCF is applied:								$4.20	$13.40	$22.32	$29.56	$36.15
Upside from current Levels:								12.04%	257.32%	495.08%	688.27%	864.04%