HollAnd
Advisors

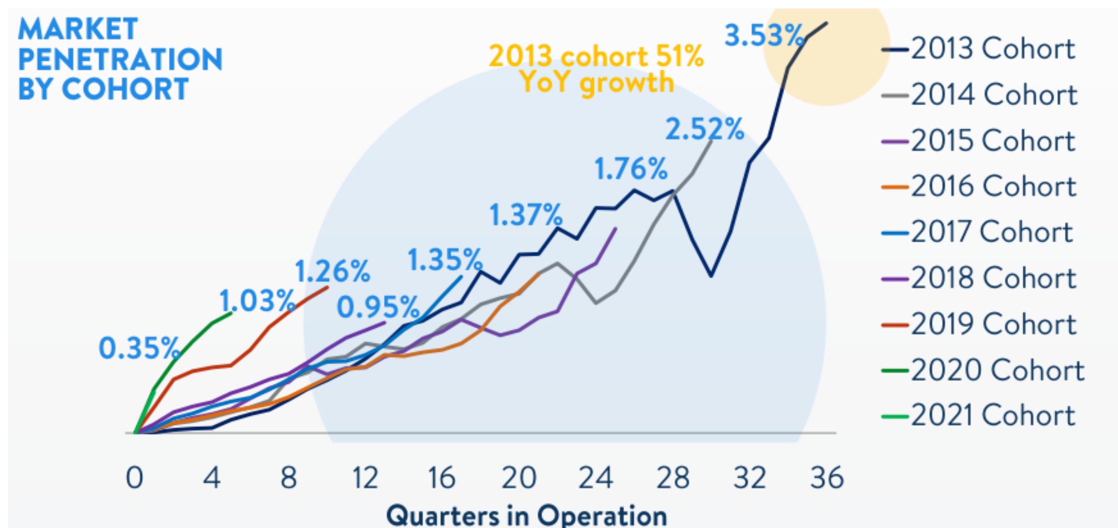
Holland Views: Carvana – Price $107 Mcap $18bn

A push-me-pull-you

"A hunch is creativity trying to tell you something" – **Frank Capra**

We have spent quite some time on Carvana (and CarMax) recently and our hunch is that the former could be an important company of the future. Before outlining our views, we would ask readers to note our tribute to the source of the idea at the end of this piece*. In conducting our work on the company however we have not spoken with other investors at all. For better or worse, what follows is our own assessment. We look forward to learning more.

Fig.1: A new way to buy car… the best way for the future?



Source: Carvana – ADESA Acquisition deck, Feb 2022

Mental models & movies we have seen before

There are many new(ish) technology companies whose shares were riding high and now have fallen to earth somewhat. Why would we pick this one to study? The answer we think lies in pattern recognition i.e. when starting to read about Carvana a number of lightbulbs went off in our head. We think recognising familiar business models (or mental models) in new market areas is our strength so we are trying to play to it.

As we observed in a short piece a few weeks ago our Carvana reflections started with the seller of a car seeing Carvana's high purchase price as evidence of a flawed model. Whilst we cannot dismiss that idea, we found ourselves reminded of the suspicion that first greeted JDW's cheap beer or Southwest's low seat prices. Many early users of these disruptive products loved them (as Carvana users do), but some looked for a reason for the cheapness, when in truth there wasn't one. We wonder if such moments are the 'tell' of a true disrupter. JDW was once assumed to be selling beer near its sell-by date and Southwest/Ryan to be flying unsafe planes (NB: none of these were ever true).

The truth, as history has proven, is that these companies had just found a more efficient way to operate and passed that efficiency on to the customer in better prices (and/or better service, e.g., Amazon delivery). The long-lasting secular growth and success of such companies that followed each new service was just the result of more and more customers gradually responding to the initial offer of 'passed-on efficiency'.

Direct to consumer (DTC) – A powerful and PROVEN model

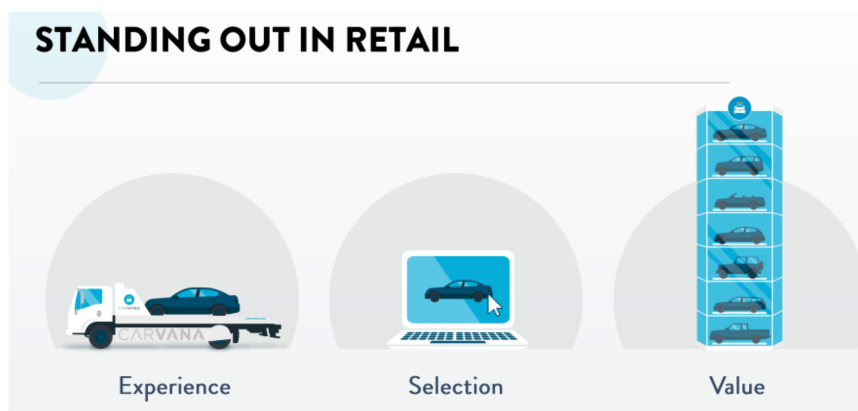
Since that first observation, a number of other points in the Carvana business model have now rhymed with models we have seen before. The obvious one being a direct-to-consumer model (i.e. cutting out the middleman, so reducing a cost layer). This is the same one used by Geico, Admiral and Ryanair.

Carvana has set its stall out to do exactly that in the trillion-dollar US second hand car market. By cutting out dealerships (i.e. property), and the pushy salesman they employ, they are reducing the un-scalable cost base of the inherently **local** car buying business. They have replaced this with websites, call centres and logistics, i.e. the delivery network to pick up and distribute cars to and from customers. Whilst today that network is a good proportion of the companies' operating costs, importantly it is scalable, and is falling as a percentage as scale increases. Crucially by also offering buyers a **nationwide** fleet of cars for sale rather than just those in your local dealership, customer choice is improved immensely. We should note that many of these traits are not completely new. CarMax's use of some of them is the main reason for its c.30 year success to date. Carvana is just taking the idea a step further and crucially moving the purchase (and sale) process fully online.

'Push me Pull you' – A new mental model

Aside from reading Carvana's company presentations and annual letters we have spent a good deal of time listening to customer reviews of the company and competitors. The only way to describe these is 'almost evangelical'. Simply put, people love buying cars through Carvana. This fact is far more important than we think many analysts may realise. The feedback customers give matches that of the company's main message – i.e. 'to delight customers.' By making sure they are getting **'a great buying experience', 'a good selection of cars'** to choose from and '**good value'.** The other notable fact that all buyers and sellers observe is how quick the process is (c.15-30 mins) vs the hours often spent in numerous dealerships. Mostly then the car is delivered to your home within a day or two or can be collected from a car vending machine (look them up!).

Fig.2: Carvana's customer offer



Source: Carvana Investor day 2018

A crucial point we noticed when listening to the company's 2018 investor day presentation echoed against both its customer reviews and our personal experience. **This was how the average person in the US really hates buying a car.** Many Carvana reviews have comments along the lines of:

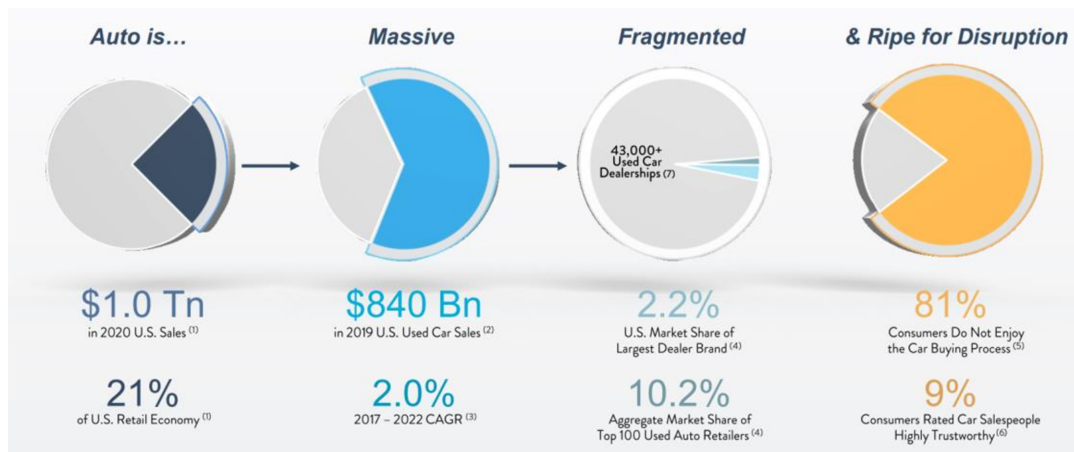
> *"...and I didn't have to spent hours speaking with horrible car dealers."*

The agency model

Some readers we hope will be familiar with the 'Agency' model idea. This is where a middleman type individual will recommend the purchase of a product (hearing aids are a good example with doctors acting as middlemen). The customer implicitly sees the middleman as an independent view/endorsement on the purchase when more often than not they may well be connected, and thus incentivised, by the product seller. The Agency model is a proven powerful business (and psychological) model. Another example is UK builders who often recommended Howden kitchens, where they have accounts and special discounts/rebates.

In the case of Carvana we think a *"reverse agency model"* applies. In the normal case of a new product/service being offered DTC in the past (like insurance or low-cost flights) the trade off the customer had to accept was less help in the buying process vs lower prices. I.e. there is no insurance agent to help you fill out the forms and no travel agent to help you book flights. Whilst the take up of these DTC services has over time been high due to customers enjoying lower prices, it took a while for many customers to accept a change in their old behaviour and to stop using a broadly trusted agent. Was the saving they would enjoy enough to compensate for the need to be more involved in the process they asked themselves? In the end they concluded it was, but as a result of the need to give up a level of service provided by agents, transitions took time. In many cases decades.

Fig.3: 81% of consumers 'do not like' buying cars



Source: Carvana Investor day 2018

Reverse agency model

Carvana situation we conclude is different, and importantly so. Why? Because in the case of buying and selling a car the majority of people actively want to avoid the middleman. Why? Because they dislike and distrust him (a generalisation, but they are mostly male!) No one said the same about travel agents or even insurance agents. We see this factor as important when assessing Carvana today and its possible future growth potential. Its fast take-up in just 9 years since inception, shown in Fig.6, we think is driven by this push-me-pull-you factor.

We thus suggest that a **Reverse Agency model** is at work in this industry (‘**Push-me-pull you’** is easier to remember!). Not only might customers enjoy the better availability and prices that Carvana offer. They really want to avoid the middleman car dealer. As such there is not just a pull factor towards a better value experience as was the case in past DTC offerings, but an important push away from the old unpleasant dealership process also.

Arguably this loss of a poor-quality middleman is observable in the housing sector with companies like Purplebricks trying to replace Estate Agents. Like car dealers, few would miss the estate agent either! But for a new network to work both buyers and sellers have to see they are getting a good deal. Arguably cars are mostly liquid, fungible items. Houses are not, hence some sellers believe it likely they will maximise their selling price by using an estate agent.

Fig.4: Building a resilient two-sided network

Source: Carvana – 2020 Shareholders letter - Feb 2021

Looking at Fig.4 above a few points are worth noting:

- The first being that CarMax sources only c.40% of its vehicles from retail customers vs the c.100% level Carvana reached in 2020. This context suggests that Carvana has built a well-known model that is popular with sellers and buyers alike
- But Carvana has achieved this whilst now also making its target gross margins
- This chart also caused us to reflect on some banking/finance type business models i.e. ones that are reliant on wholesale funding to source/finance the retail product they might offer. These unbalanced networks often made them vulnerable and less robust (Northern Rock being the best example). Those who were able to build retail, or diverse funding routes to balance/source a retail product built far more robust models. This looks to be what Carvana has achieved in short order, quicker than all of its in store or online peers. When looking at its S1 and investor day it has also reached a far higher point of retail car sourcing than even it targeted
- The most powerful network models that we have observed in the past often have disparate groups of buyers and sellers on each side of the transaction. Rightmove, Visa and Amazon all being good examples

Line by line

When spending time talking to Carvana one thing became very clear to us: This company has understood and dissected the industry they are competing within very very closely. This does not just relate to the cost line items and how these don't scale (for dealerships) and do scale for a central offer like Carvana (and maybe CarMax). They have also understood the subtle psychological level of how an industry without scale or barriers to entry still made a surprisingly good living up until today. This being the case for dealership owners and their salesman alike currently. On our call with the IR department of Carvana they described the current dealership experience by customers as:

> *"the current selling process uses opacity and a multistep process to tie in the customer, effectively preying on their psychology biases and overtly creating a poor customer experience"* **Source: Carvana Investor Relations**

We doubt an average consumer would describe it as such, but we think this an excellent articulation of what is currently occurring. Carvana, like CarMax before it is trying to bring transparency and integrity into an industry with arguably very little of either.

At a human level consumers know they are being sold to and coerced. Maybe even conned... and they don't like it. In Fig.3 earlier we note that a whopping **81% of consumers dislike buying a car. Considering the scale of the money being spent and that it mostly involves upgrading to a better product that is a remarkable statistic when we reflect on it.** Were the same to be true of say booking a holiday many would assume the sector is ripe for disruption.

A reflection

So, to answer the question posed at the outset of this note. Why are we interested in Carvana vs all the new company tech alternatives out there? Our answer might be:

- It is an established industry disrupter, not creating a new industry – this is a business model we know well
- It is a Direct-to-Consumer better value offer – again a model we know well
- And one that cuts out intermediary costs, that in this sector arguably provide negative value to the customer
- It is founder led by someone with real passion for the business and a team with deep knowledge of the industry
- It fixates on "*Delighting the customer*" in a sector known for the opposite. (NB This expression when we come across it in other companies often accompanies lasting outperformance)
- Its business model is one pursuing the economies that can be earnt in a scaled, well thought through network and then sharing those with customers

Thinking more about Carvana's model and future

We were lucky enough to spend time recently with a very smart investor who observed something that has stuck with us. They observed that once they started thinking about where businesses ended up, rather than where they were today analysing them became a lot simpler.

> *"The new way to buy and sell a car"* – **Carvana motto**

This thought has been bouncing around our heads as we have listened to multiple Carvana user reviews and company presentations. A number of the users all concluded the same. Twisting Carvana's catchphrase shown above they instead made it into:

"the only way to buy and sell a car"

End games

This got us thinking. Reflecting on these early-stage user observations and the industry end game maybe we should invert the problem as Munger instructs us to. If doing so maybe we can make a few observations:

- Did any of us still need to keep using travel agents once we could book flights more cheaply direct?
- Did we need to drive and park into a town centre to flick through a book to buy once it could be delivered to our door?
- Even in the world of fashion where 'look' and 'fit' are important, delivery convenience is overpowering the need to try items on

In each of these cases, some of us adopted the new convenience offered quickly but most more slowly. But almost all of us in the end embraced the new convenient way to shop. We just took time to get used to it. With such back studies readily available for us to consider what is the logical future of buying and selling cars if:

- We assume the counterparty we will be using offered us a great service and is trustworthy
- That same counterparty also has a reputation for charging fair prices on all cars bought and sold so that we don't need to check up on them as can trust the price we are paying

The last point is interesting as the move to fixed ('no haggling ever') transparent prices is a core offline part of the CarMax customer offer, that has distinguished it from peers. Whilst it took a while for customers to get used to it, CarMax's success relative to the industry shows that this message has resonated. With Carvana copying this *'fixed & transparent'* pricing architecture, thus re-enforcing it, it is likely to dominate the industry more and more we suggest. But the vast majority of dealers use discounted pricing to then sell add-ons to make their margins and cover property and salesman costs. **This suggests that only two players, representing a c.3-4% share of the second-hand market today are offering customers what they will most likely want in the future!!**

NB: Carvana we think is lifting the best parts of the CarMax model (fixed prices/better inventory/good service). It is then trying to improve on each of them and has taken the model online. Is this analogous to how Amazon copied the best parts of Costco? That we can see the past success of the CarMax model perhaps reduces some of the investment risk in Carvana?

We return to considering the logical end game of the used car market now such a different proposition such as Carvana is available. Whether we all convert quickly or slowly we surely, should conclude many of us will convert eventually to use this new route to car buying. To assume otherwise is to assume that we would all rather keep dealing with the types of characters shown below rather than using an efficient and transparent model that we will grow to trust!

The result might mean a good percentage of the US second market moves online (20-50%..?) In addition, a big share of the whole market will grow to expect transparent prices and better customer centric service as a norm.

With an US average car value being $20K that is a huge addressable online market and one were the most of the current competitors look ill-prepared to compete. They being local dealers with property costs and a need to coerce and cross sell to make their economics work. Today Carvana has 1% of the total US second hand car market with c.400k cars, having grown from a standing start 9 years ago. Assuming one day it might have c.10% seems outlandish to some, but when we consider the end-game discussion above, maybe it is not.

NB Until recently the company was building capacity to handle 1.3m cars vs 2021 retail units sold of 425k. The addition for the ADESA sites gives them a route now to c.3m annual capacity. Talk about Big Hairy Audacious Goals!

Fig.6: Carvana get to 1% US car market share in 9 short years

Source: Carvana – ADESA Acquisition Deck, Feb 2022

To the victor... most of the spoils

We can see from businesses like Amazon, Facebook et al. that network scale economies matter a great deal as they enable greater choice/lower prices or give market power. The result is that most of the value accrues to the largest and most successful networks if they can establish first mover advantages and maintain them. Whilst it is far from certain that Carvana is at this point, it becomes much more likely when the disputer has:

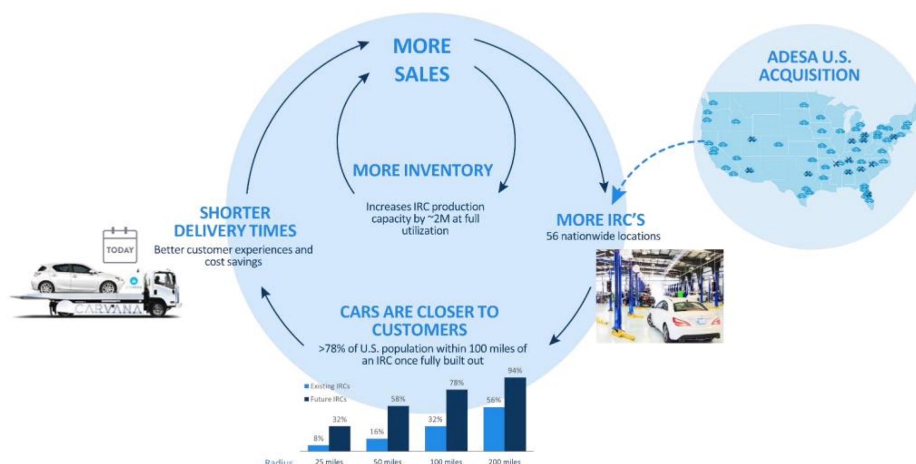
a) Fully costed and thought through the economics of their business at different levels of scale

b) Powerfully adopts a scale economy shared and deferred gratification model.

If following point b) they are giving the customer better choice/service and prices than otherwise customers might reasonably expect from a network of today's size. This leads to customer delight. The longer they pursue that model the wider the moat to the next network being able to compete with them becomes. This is the model Amazon and Schwab pursue. **In our reading of and discussions with Carvana so far, we think they understand this point deeply**.

As such while we as investors need to be careful to *welcome* loss making companies, we need to see some of them for what they are/are trying to build. I.e. powerful flywheel networks that once complete will be very hard to challenge. **If such networks were highly profitable from day one the ability to replicate them is arguably easier. By only being profitable at scale a far greater barrier is created.**

Fig.7: Carvana's flywheel



Source: Carvana – ADESA Acquisition Deck, Feb 2022

Carvana's financial model & CarMax

Fig.8: Carvana financial model to date

LONG TERM FINANCIAL GOALS

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Long Term Target
YoY Revenue Growth	180%	135%	128%	101%	42%	129%	–
Gross Margin	5.3%	7.9%	10.1%	12.9%	14.2%	15.1%	15 – 19%
Advertising	7.4%	6.5%	5.7%	5.2%	5.1%	3.7%	1.0 – 1.5%
SG&A ex. Advertising and D&A	21.1%	18.2%	14.9%	13.7%	13.7%	11.3%	4.5 – 5.5%
D&A	1.3%	1.3%	1.2%	1.0%	1.3%	0.8%	0.5 – 1.0%
SG&A Total as % of Revenue	29.8%	26.0%	21.7%	20.0%	20.2%	15.9%	6 – 8%
Net Income (loss) Margin	(25.5)%	(19.1)%	(13.0)%	(9.3)%	(8.3)%	(2.2)%	–
EBITDA Margin	(23.2%)	(16.9%)	(10.5%)	(6.2%)	(4.6%)	(0.0)%*	8 – 13.5%

*Includes (0.2%) impact from one-time items

Source: Carvana – CEO 2021 letter, March 2022

Carvana's financial model and the progress they are making to achieve it are shown above. Having discussed this model with the company it is clear to us they:

a) Have thought deeply and clearly about each component of this model and how it will scale. Crucially also the model has not be altered over time (i.e. there is no mission creep)

b) They have studied in detail and are benchmarking against CarMax in almost all areas

c) They believe they are close to the scale required to make their financial targets

   a. 2m units whilst a target for the company is not required for financial model

d) Have already achieved their gross margin targets

e) SG+A targets are yet to be achieved, but with the company still in strong growth mode that is unsurprising as they are heavily investing for a high rate of growth

CarMax – Imitation is the sincerest form of flattery

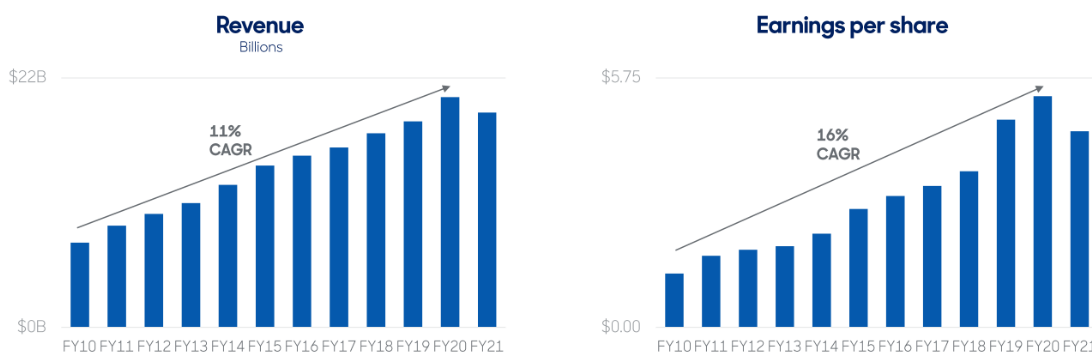
We have spent time studying CarMax whilst doing this work. Indeed, in doing so we found another company we are impressed with. CarMax since its inception in 1993 has become the largest car reseller in the US. In 2021 handling 756,000 cars or c.3.5% of its target market nationally (1-10 year old) cars or 1.8% of the total market if assumed at 41m. It can perhaps be best summarised as follows:

> *"CarMax revolutionised the auto industry by delivering an honest, transparent and high-integrity car buying experience to its customers"*
>
> *"For 26 years CarMax focus has been making car buying more ethical, fair and stress free by offering a no haggle experience and an incredible selection of vehicles"*

Harvard Business Review report on CarMax, 2019

From our own research we agree with these statements. **We think that what these two companies have in common is perhaps more important than what sets them apart. First CarMax and then Carvana have brought integrity, price transparency and a focus on the customer to a sector which has arguably mistreated its customers for decades**. The success of both businesses to this point shows that one by one customers are embracing these models. Together they are now delivering a powerful message to all customers. **We suspect there may be sufficient market share growth potential for both of them to flourish.**

Fig.9: CarMax has grown to become biggest US car retailer



Source: CarMax Investor Day 2021

We will at some point return to the future prospects for CarMax. We note its recent year drop in earnings multiple, which is most likely due to the threat Mr Market perceives from Carvana. Our short assessment however is that we suspect there is enough growth prospects for these companies to share (but maybe not equally).

Carvana Financial model – A closer look

Some may dislike a business model like Carvana's seeing it as too capital intensive. Also, that it is targeting a low growth mature market that requires it to steal existing sector sales rather than create new growth (say in cloud). We see it differently and as we have alluded to above like:

a) The proven disrupter model when it is evident, they are doing a better job for the customer/are more efficient than sleepy/greedy incumbents

b) We also like models that once built are super-hard to displace

Of all the moats we have studied scale economies shared (SES) are the best, bar none (*Holland Views: Reflection on a mental model: Scale Economics Shared*). This is because all stakeholders love them. Consumers love the low prices, but regulators do too, seeing them not as abusive monopolies but instead as consumer champions. The companies themselves can makes great ROIC's once the flywheel reaches a certain velocity/size bringing enjoyment to both employees and shareholders alike. The only people that do not like them are competitors who find it impossible to reset themselves to compete. What we will not hide from is the fact that such models are hard to initially create. To successfully do so those that establish one will likely have had to fight naysayers and conventional sector wisdom the whole way. JDW/Amazon/Southwest etc. are all examples of such journeys.

Seeing the roll-out potential

We are not venture capitalist or tech investors looking for the next 'winner'. As such it is very unlikely, we would have backed Carvana at its founding/spinout from Drivetime. Nor would we likely have invested at its IPO. Crucially now however the Carvana model looks to be both proving itself financially and is loved by customers at a very moment its shares have corrected. As such what we like here is a disrupter model that we can see is clearly working and that it has with a runway of growth ahead.

Recently we came across the following quotes from Peter Lynch as he described his assessment of Wal-Mart.

> ***"I don't think that with great stocks you need a super-computer or an advanced Sun microsystems to figure out the math."***
>
> *Take the example of a company I missed: Wal-Mart. You could have bought Wal-Mart ten years after it went public. Let's say you're a very cautious person. You wait. Now ten years after it went public, it was a twenty-year-old company. This was not a start-up. So it's now ten years after the public offering. You could have bought Wal-Mart and made 30 times your money.*
>
> *The reason you could have done that is that ten years after it went public, it was only in 15% of the United States. And they hadn't even saturated that 15%. So you could say to yourself, now what kind of intelligence does this take? This company has minimal costs, they're efficient, everybody who competes with them says they're great, the products are terrific, the service is terrific, the balance sheet is fine, and they're self-funding.* ***So you say to yourself, why can't they go to 17%? Why can't they go to 21% Let's take a huge leap of faith: why can't they go to23%***
>
> ***All they did for the next two decades was roll it out. They didn't change it****. I only wish they had started out in Connecticut instead of Arkansas.*

Source: Peter Lynch interview 2002

Whilst Mr Lynch may have missed Wal-Mart, he made significant sums in other retail rollouts using this thinking. Today this reasoning we think makes Carvana look interesting, particularly when we look at the chart below. An earlier version of this chart was what first piqued our interest in the company. We think it powerfully demonstrates the snowball like hill that Carvana might be sitting at the top of.

- Not only are the earliest years of geographic rollout (2013) still growing so strongly, i.e. up 50% in 2021 to a 3.5% market share
- Also, the most recent areas of roll-out are growing at a faster rate (i.e. steeper lines) than all those that went before.

These two points and the strength and breath of growth this chart shows are evidence of a business growing in popularity and market power all the time. Also, one that is showing itself as having the rollout potential Peter Lynch speaks to. As the saying goes, *history does not repeat itself, but it rhymes*. Whilst we might not have backed the Carvana story at its inception this combination of factors now evident vs today price we find very interesting indeed.

Fig.10: Carvana growing stronger with each year

Source: Carvana – ADESA Acquisition Deck, Feb 2022

Returning to Carvana financial model

Fig.11: Carvana Financial targets

LONG TERM FINANCIAL GOALS

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Long Term Target
YoY Revenue Growth	180%	135%	128%	101%	42%	129%	–
Gross Margin	5.3%	7.9%	10.1%	12.9%	14.2%	15.1%	15 – 19%
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SG&A ex. Advertising and D&A	21.1%	18.2%	14.9%	13.7%	13.7%	11.3%	4.5 – 5.5%
D&A	1.3%	1.3%	1.2%	1.0%	1.3%	0.8%	0.5 – 1.0%
SG&A Total as % of Revenue	29.8%	26.0%	21.7%	20.0%	20.2%	15.9%	6 – 8%
Net Income (loss) Margin	(25.5)%	(19.1)%	(13.0)%	(9.3)%	(8.3)%	(2.2)%	–
EBITDA Margin	(23.2%)	(16.9%)	(10.5%)	(6.2%)	(4.6%)	(0.0)%*	8 – 13.5%

*Includes (0.2%) impact from one-time items

Source: Carvana – CEO 2021 letter, March 2022

For all of our interest in a new DTC model offering customers seemingly better choice, value and service, we need to consider whether the Carvana financial model will ultimately work for investors. We can do this first by looking at its progress against its own financial yardsticks, but also against industry leader CarMax for context. As such we observe:

- Carvana has achieved its stated gross margin (GM) range of 15-18% reporting a 15.1% gross margin in 2021. Adjusting for the fact that CarMax excludes finance income from its comparable GM calculation its 2021 GM was c.15.6%
- Carvana's SG+A as a percentage of sales remains elevated (15.9% of sales) as it is still growing quickly and lacks full scale. It compares with a 10.0% SG+A/Sales level at CarMax.
- The Appendix gives extracts from each company 10K showing the breakdown of SG+A. it shows:
    - Compensation (including sales) and store costs were 75% of CarMax SG+A, or 7.5% of sales
    - At Carvana, compensation, stores and logistics added up to 43% of SG+A, or 7% of sales (…..although we do note the 'other' category)

This comparison is notable considering that Carvana is (for now) half the size of CarMax in cars sold/revenue. It does seem to point to a scalable more fixed/central cost base platform that is being built by them as they claim. We have looked at the consistent parts of the Carvana cost base and are impressed with the level of granularity the company goes into in terms of its projections and monitoring. We repeat we do not necessarily dislike CarMax as a result of our Carvana conclusions. Both we see as potential future winners of this sector, but testing Carvana's cost base against an already leading industry player we think is right. For those wanting to look into this area in more detail we highly recommend the Carvana Investor Day 2018 and the CarMax one in 2021.

A word on ADESA

In February 2022 Carvana announced it was buying car auction company ADESA. Purchasing it for cash/debt, no Carvana stock was issued. We think this an interesting acquisition and we recommend readers to listen to the conference call that accompanied its announcement. A few of the slides the company released during that call are shown below.

Fig.12: ADESA: A real estate deal

Highly synergistic locations, adding approximately 2M of reconditioning capacity, bringing total to over 3M when fully built out

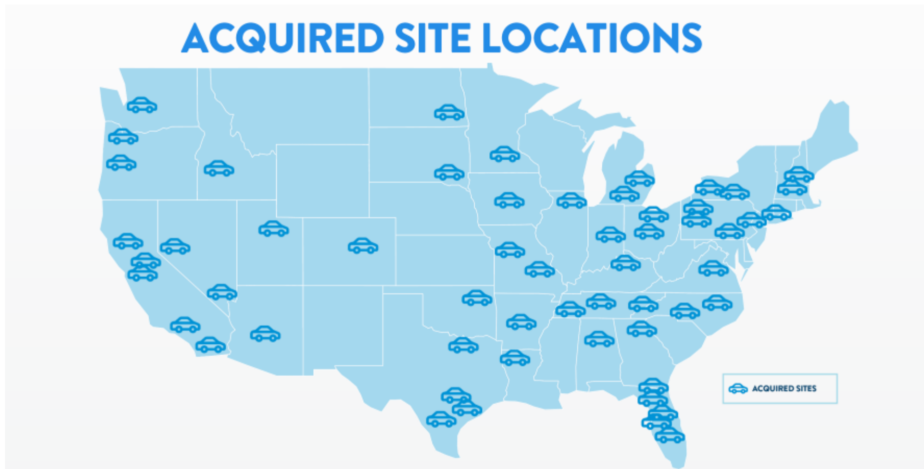


Fig.13: ADESA scales Carvana's Inspection and Reconditioning Centre sites

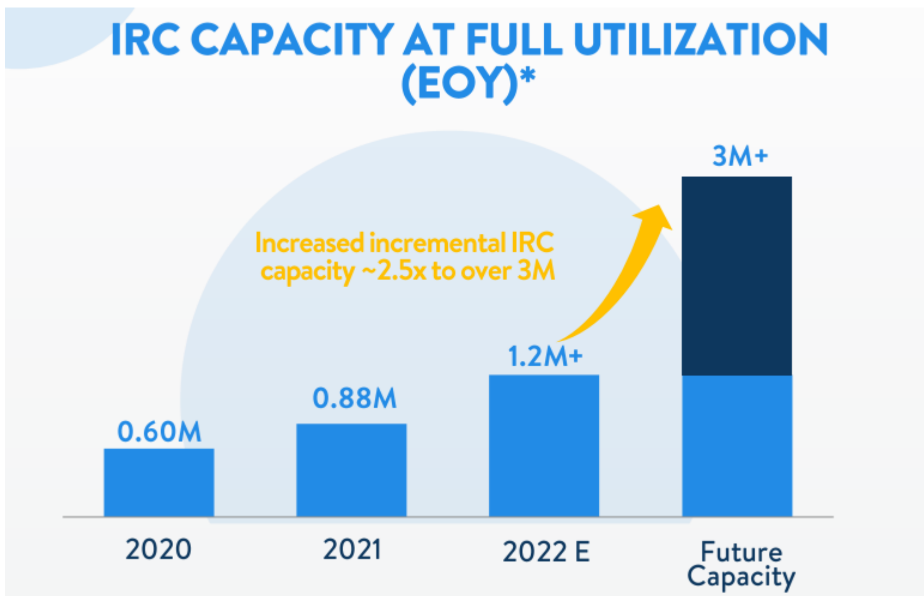
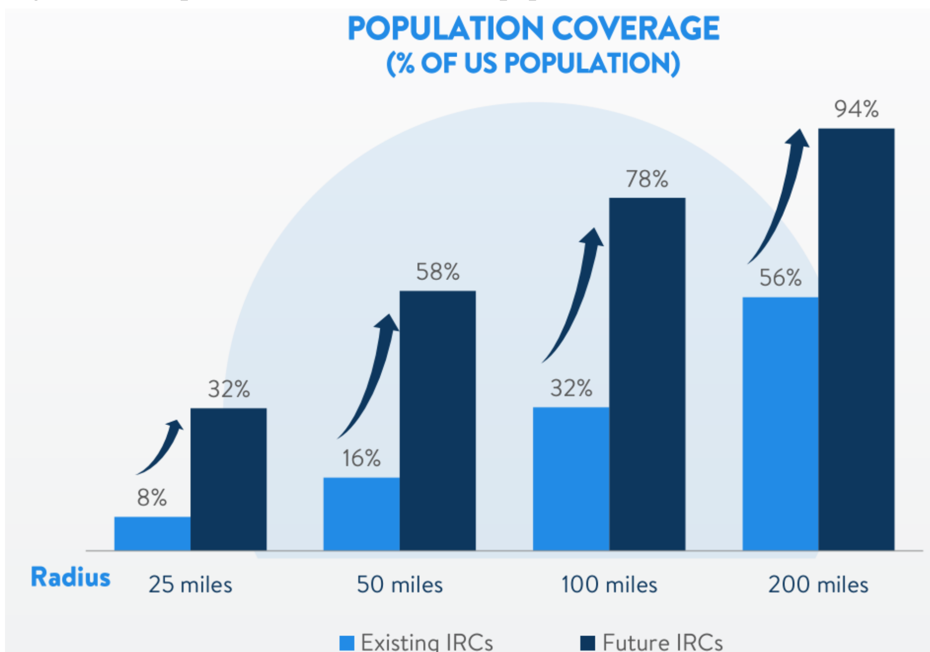


Fig.14: IRC expansion means 58% of US population within 50 miles



Source: Carvana - ADESA Acquisition deck, Feb 2022

ADESA reflections

To those that have not studied Carvana this might at first seem a strange acquisition. I.e. If you are an 'online' seller of cars why are you now buying so many 'offline' sites. Here we think some reflection on the required logistics of a business like Carvana must be considered. Cars once bought or sold online need to be picked up, delivered and crucially also reconditioned. As Carvana builds out its network it is building reconditioning capacity to handle 1.3m cars by the end of 2022 vs 450k retail cars sold in 2021. But each new site has to be located, purchased, get the right persimmons and be built however. ADESA owns (mostly freehold) 56 car auction site across the US in good locations. Each is already sizable in order to store cars for auctions. Carvana has described this acquisition as a 'real estate' play and that is how we think investors should consider it. It enables the group to now plan for a capacity of 3m cars pa (with an extra $1bn development cost) from a combination of existing IRC sites and those controlled via the ADESA acquisition.

> *"Amateurs study tactics, armchair generals study strategy, but professionals study logistics."* **General Omar Bradley**

Big hairy audacious goals (BHAG)

We remind readers of our view expressed above i.e. that we are interested in business models that once built are very hard to replicate. Were Carvana to reach its operational goal, 2-3m cars handled per year and it financial ones (c. 8-14% EBITDA margins) we think it may be looked at very differently. It will likely then be:

a) A market leader with a strong runway of market share gains behind and likely in front of it

b) Have an unmatched cost proposition?

c) Be a great brand in the eyes of consumers

d) Will have a powerful platform to do other things with

Perhaps more importantly than any of these facts its network of IRC sites, brand, technology and logistics capability may make it almost uncatchable by competitors or another new entrant.

CarMax... A winner or loser?

Fig.15: CarMax PE rating falls as Carvana gains traction

Source: Bloomberg

As Carvana sales and share prices soared over the last 5 years, CarMax's share suffered. It is easy to see why. As Mr Market sees a new online potential winner, he must also price the likely offline losers. Whilst the CarMax brand is one the customer knows for trust and fixed prices it does not shout 'cool online delivery' as Carvana's does. That said we think:

- As Carvana fixed price strategy is a copy of CarMax's it endorses the latter's pricing approach in customers eyes
- That if any company can match (or more likely get close) to Carvana future low unit cost base it will be CarMax

CarMax's 2021 investor day is well worth listening to. In the face of online demand for cars the company is clearly not standing still. The revenue chart we showed in Fig 9 earlier is cagr of 11% over the last 10 years (resulting in 16% pa EPS growth). During this time CarMax bought back 25% of its shares. Against this context CarMax is still planning to grow its market share aggressively in the next five years resulting in a further 11% cagr in sales planned. Seeing the cultural overlap between Carvana and CarMax we suspect these targets might well be achieved. If they are then Mr Market recent reduction in CarMax PE could represent an opportunity.

In the 2021 investor day the CarMax CEO talked of 3 types of future customer. Those that want to purchase on online, those that want to buy instore and a third that want a little of each. He then commented further:

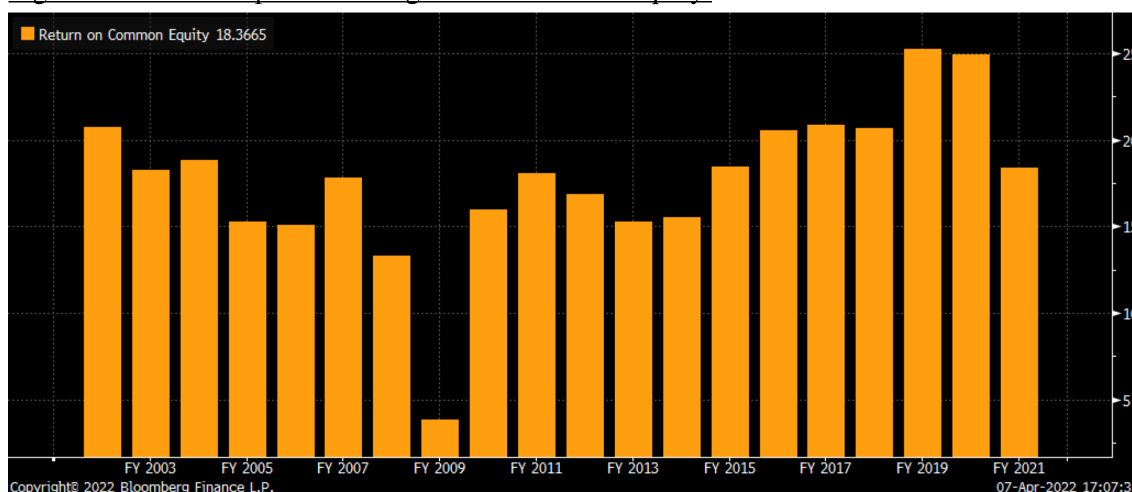
> I am a firm believer that this is the future of car buying. This is where customers are going, whether they know it today or not, and we want to make sure that we lead the pack. I also think that there are a lot of competitors that won't be able to make the transition. It's a highly fragmented marketplace right now. I think in the future, there just won't be as may folks that can deliver an experience like this. And I think that consumers will one day wake up and say, "If I can't get an experience like this, you are no longer relevant." And we want to be relevant.

Source: William Nash, CarMax Investor Day, 2021

Stable or falling CarMax returns

Mr Nash's comments clearly show that CarMax is pivoting towards Carvana and importantly towards what the customer now demands. This suggests CarMax will not just be a laggard, easily ceding share to Carvana. The key future question for a company like CarMax, even if it achieves its growth goals, is what price might it pays in terms of ROCE/ROE to achieve that growth. Its past returns on equity are attractive, repeatable and made in way consistent with those we look for in Scale Economy businesses. What will be key to watch in future is the marginal cost of growth as it competes not only in store, but more and more online also.

Fig.16: CarMax's impressive Long-term Returns on Equity



Source: Bloomberg

Solving for X

As we reflect on this point and shortly look at the investment prospect that is Carvana a thought comes to us. What if the ROIC projection that CarMax has made in their online offering is a little out. Also, at the same time the SG+A leverage that Carvana thought it would get does not quite materialise. What then? Do the two best, fastest growing (and admired by the consumer) companies in this $1trillion dollar sector just keep growing whilst making low returns..? We think not. We suspect they might allow gross margins to rise enough to make sensible returns, but not enough to give the Arthur Daley's the air he needs to survive. Post our study we conclude that these two companies will be the clear #1 and #2 competitors in the sector (but we suspect their current positions might reverse). With the top 100 operators today making up just 10% market share, maybe that is all we need to know.

*A thank you to the source of this idea

The more I listen to Rob Vinall, the more impressed I am. Other people's ideas can either resonate strongly with your own approach or not. For years I looked at the companies Seth Klarman was buying, but did not find a single idea that matched my own approach. In a few of Rob's holdings I have found strong overlap with the redeployment of capital model I have been seeking in recent years. Also, with the desire to be backing proven owner managers. It was on seeing he had bought Carvana that made me take a closer look. Thank you Rob.

Valuing Carvana + Its ethos

Valuing businesses at this stage of their development is not something we have ever found easy. Indeed, numerous times we never properly considered Amazon because the headline valuation put us off. Considering that its Scale Economy model was one we understood well that clearly was one of the great mistakes of our careers. As such these days we try to think a little harder, particularly when the model we see developing resonates well. That resonation you can hopefully hear in the words we have written above. Also, we hope in the quote from the CEO below.

As for value, well it will clearly be closely linked to Carvana's future growth. That said the margin of safety investor in us was comforted when the company, on a call with us recently, spoke of being 'near' the requisite scale to prove their financial model. As such what might the underlying earnings power of this company be at 1m, 2m or even 3m retail cars sold at say a c.5% net margin. (Whilst 5% net is an arbitrarily selected figure, it looks achievable from the lower/mid end of Carvana's 8-14% EBITDA target range. We also note it was the net margin CarMax made in c.2019 & 2020.) As for the scale of growth we assume, well Carvana sold 425K cars in 2021, a growth of no less than c.74% pa. As we have noted above, they are investing for capacity of 1.2m by the end of 2022 (3m further out). As such we observe:

- Net Income at 1m units at 5% net margin = c.$1.25bn (On Turnover @ $25bn)
- Net Income at 2m units at 5% net margin = c.$2.5bn (On Turnover @ $50bn)
- Net Income at 3m units at 6% net margin = c.$4.5bn (On Turnover @ $75bn)

These figures compare to a current market cap of Carvana of $18bn. They also compare to 2021 turnover of $12.8bn, a figure that was only $1.9bn in 2018! (NB. Once Carvana turnover is up another 50% Carvana will be at Market cap/Sales on 1x). What was it Lou Simpson said…?

"Pay a fair price even for exceptional businesses"

This note has not really mentioned growth, but let's be clear, profitable high rates of secular future growth by best in class, unmatchable business models is what we are attracted to. Our hunch is that we might have found it in Carvana.

A final word from the Carvana founder

> *"We have always framed our opportunity simply. Customers desire the experience we provide for them. Providing it is hard. It requires a difficult combination of culture, technology, operations and infrastructure. That simple frame is clarifying. To achieve our goals, we must continue to deliver great customer experiences. We must continue to differentiate our unit economics. And we must scale. That is our path."*
>
> **Ernie Garcia III - Carvana CEO: 2021 Shareholder letter**

Kind regards

Andrew **firstname@hollandadvisors.co.uk**

A Push-me-pull you courtesy of Dr Doolittle

The Directors and employees of Holland Advisors may have a beneficial interest in some of the companies mentioned in this report via holdings in a fund that they also act as managers to.

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Appendix

Carvana Operating Expenses

Components of SG&A

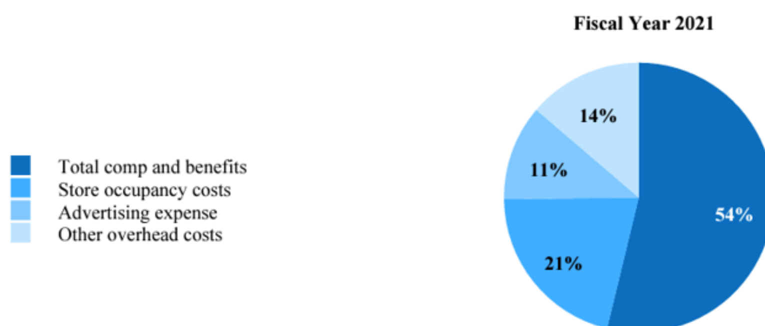
	Years Ended December 31, 2021	2020	2019
	(in millions)		
Compensation and benefits [1]	$ 667	$ 338	$ 245
Advertising	479	286	204
Market occupancy [2]	70	37	21
Logistics [3]	148	77	58
Other [4]	669	388	259
Total	$ 2,033	$ 1,126	$ 787

Source: Carvana 2021 10K

CarMax Operating Expenses

SG&A Expenses

COMPONENTS OF SG&A EXPENSES AS A PERCENTAGE OF TOTAL SG&A EXPENSES



COMPONENTS OF SG&A EXPENSES COMPARED WITH PRIOR PERIODS

(In millions except per unit data)	Years Ended February 28 or 29 2021	Change	2020	Change	2019
Compensation and benefits:					
Compensation and benefits, excluding share-based compensation expense	$ **909.8**	**(0.4)%**	$ 913.2	9.4 %	$ 835.0
Share-based compensation expense	**111.7**	**12.4 %**	99.4	42.2 %	69.9
Total compensation and benefits [1]	$ **1,021.5**	**0.9 %**	$ 1,012.6	11.9 %	$ 904.9
Store occupancy costs	**399.1**	**1.5 %**	393.4	9.6 %	359.1
Advertising expense	**217.5**	**13.7 %**	191.3	15.0 %	166.4
Other overhead costs [2]	**260.7**	**(24.0)%**	342.8	14.3 %	299.9
Total SG&A expenses	$ **1,898.8**	**(2.1)%**	$ 1,940.1	12.1 %	$ 1,730.3
SG&A per used vehicle unit [3]	$ **2,525**	$ **195**	$ 2,330	$ 20	$ 2,310

[1] *Excludes compensation and benefits related to reconditioning and vehicle repair service, which are included in cost of sales. See Note 12 for details of stock-based compensation expense by grant type.*

[2] *Includes IT expenses, non-CAF bad debt, insurance, preopening and relocation costs, charitable contributions, travel and other administrative expenses.*

[3] *Calculated as total SG&A expenses divided by total used vehicle units.*

Source: CarMax 2021 10K

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