

# AI's tipping point: Transforming industries at breaking speed



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# Impact on industry

Risk of global recession. Skyrocketing inflation. Labor shortages mixed with workplace layoffs. An escalating war in Ukraine. Continued supply chain disruptions.

Some might say it's been a bleak start to 2023 at a time when business leaders had hoped to be bouncing back from the disruptions caused by the COVID-19 pandemic. It's no secret that the first few months of the year have presented complex and unforeseen challenges that put a strain on the bottom line for many organizations and forced them to rethink their fundamental processes and standards of operation.

But as history has shown, it's the times of great tumult when answers to singular problems are often uncovered through total paradigm shifts.

For all of the challenges that have surfaced for business leaders in recent months, the swift advancements in cutting-edge technologies like Artificial Intelligence (AI) to navigate these pressures have been far greater.

We've seen companies like OpenAI release ChatGPT, then GPT-4, quickly followed by the AI language models from Google, Bard, and Microsoft, Bing. In just weeks, we've watched as an AI explosion unfolded before our eyes and tech leaders across the globe leaped into the game, questioning both how their businesses should be leveraging the tech, and what risks it presents as it continues to advance.

At Tractable, we've been leaning into applied AI since day one, transforming the speed and ease in which people recover from accidents and natural disasters. Now, as the largest companies in the global insurance, automotive and property sectors adopt AI, the impact it's having on industries is clear, and further, requiring all companies in these industries to get on board in order to retain their competitive edge.

In our first edition of this white paper series, we discussed the impact AI is having on the planet within the insurance, property and automotive ecosystems.

Now, in this latest edition, we'll dive into the impact the technology is bringing, including making the end-to-end P&C claims cycle 10x faster with automation, helping home insurers navigate rising costs and volume of claims due to increasing frequency of natural disasters and salvaging reusable auto parts from scrap vehicles to benefit the entire automotive ecosystem— among many more real world examples.

We'll also explore our vision for how technology like Tractable's AI will connect the entire automotive and property ecosystems in ways that are transformative in people's everyday lives, while bringing unparalleled value for companies.

The scale of AI advancement is unlike anything we've seen before and now it is on our doorstep, it comes with a certain level of fear, mistrust and apprehension; yet the companies that will outlast the competition are already taking advantage and uncovering new applications everyday.

Read on to discover how AI is enabling businesses to operate most effectively, make key decisions in record time and optimize internal processes for everyone's benefit, and to consider what continued advancements in AI will look like for the automotive and property ecosystems in the coming years.



# Introduction

Objectives in the mirror are closer than they appear.

Idolized by visionaries. Dismissed by skeptics. Few technologies continue to provoke such a range of reactions as Artificial Intelligence (AI). It's not hard to understand why: for decades, AI was consigned to the realm of science fiction, a made-up mirror for human dreams and fears.

Now, industries from banking to healthcare, auto insurance to art, have begun to use AI in real-life situations. As AI continues to make exponential leaps in capability, while becoming more and more integrated into our lives and work, it's clear that incredible changes are indeed ahead, and we're approaching them at lightning speed.

At the same time, many industries are experiencing a perfect storm of pressure from other external factors. These include not only the effects of recovery from the

COVID-19 pandemic, but ongoing supply chain disruption, shifting consumer behavior and a volatile global economy. Businesses are finding it harder than ever to recruit new talent, even while experiencing widespread knowledge drain as people leave the profession. Consumers are tightening their belts in response to escalating living costs. Hanging over this, even the planet itself is changing – 7 million people were displaced by floods in 2022, while the year's worst storm, Hurricane Ian, landed the US and Cuba with total costs exceeding \$100 billion.<sup>1</sup>

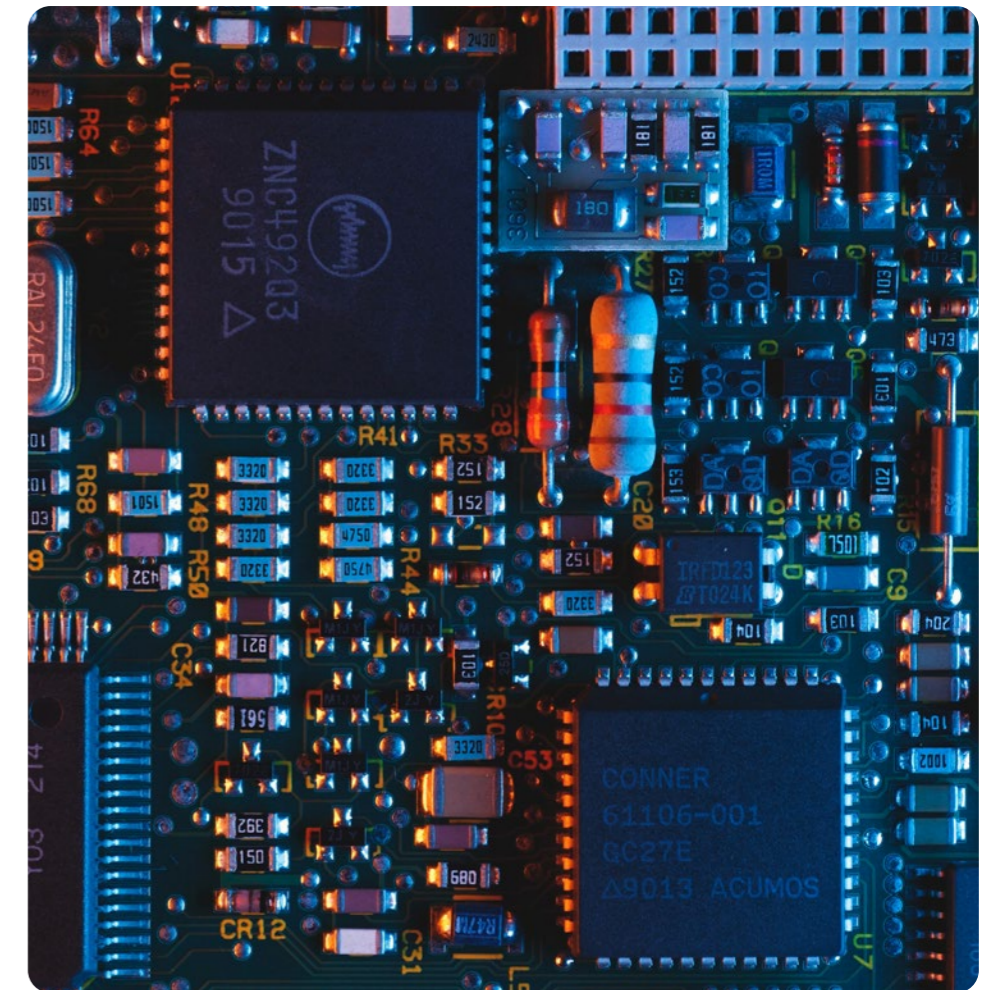
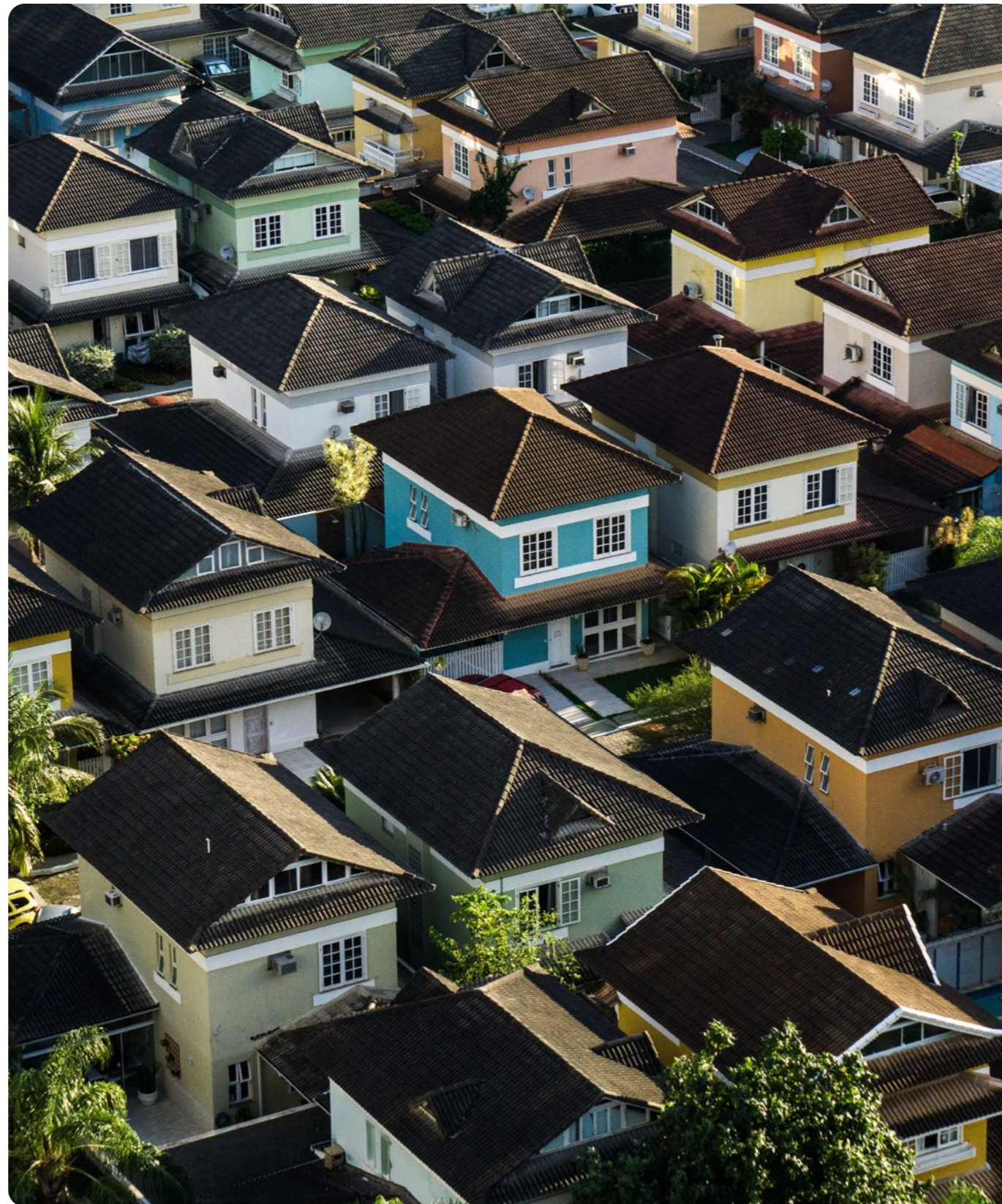
The good news? Accelerating towards this AI transformation can help us meet all of these challenges. Far from being a distraction, stopgap or an extravagance, applied AI is already bringing tangible value, enabling businesses in the insurance, property and auto sectors to work more effectively, make decisions more quickly and optimize entire processes. And that's just the beginning. Widespread adoption of AI has the potential to transform entire industry ecosystems.

## Industries are realizing commercial impact now

The past decade saw an explosion of data, from sources such as sensor-enabled machines to the rise of consumer connected devices. Through AI, the potential of that data can now be tapped. For some companies, that means greater access to data that can curate more personalized customer experiences. We also see new companies emerge with products and services that leverage data in ways we've only dreamed of before. It's a qualitative change – a tipping point for AI – with the potential to transform the whole cycle of insuring, buying, selling, repairing and recycling cars and property.

How will these players and products work together? At Tractable, we think the future is open. We foresee the emergence of a new ecosystem in which businesses work together to share data industry-wide. A future in which insurance companies share storm analytics with homeowners, enabling them to take precautions like installing storm windows and reinforcing roofs. In which body shops share data with manufacturers to improve safety in new manufactured cars. In which a trusted, unbiased visual AI standard means everyone can get the best value for their used car, the fairest estimates for their home repairs or the quickest payout for damages sustained – all through the lens of a smartphone.

In this white paper, we'll look not only at the way AI is stepping up to meet current industry pressures, but at the potential for transformation across the entire circular economy: from buying, selling, insuring, repairing and recycling, right back to manufacturing. We'll consider a roadmap from today's achievements to a future in which companies work together to unlock AI's full potential. Last and most importantly, we'll consider how these rich new industry ecosystems can improve the lives of the humans at their centers.



"AI has unleashed the Fourth Industrial Revolution... the transformative impact of AI across business sectors is undeniable. Large organizations are making heavy investments in AI to transform their own businesses and user experience and raise the bar for the industry itself."<sup>2</sup>

Manas Agrawal, Forbes

# Part 1: Disruption in the rearview, disruption ahead



Industries from construction to automotive are being buffeted by global forces which interact in complex ways. There is the ongoing recovery process from the COVID-19 pandemic, estimated to have cost insurance carriers upwards of \$44 billion, until then, the third largest cost of any disaster in history.<sup>3</sup>

Continued supply chain disruption due to the war in Ukraine, changing consumer behavior due to social distancing and rising inflation, and impact from an increasing number of climate-related natural disasters, are all combining to create the perfect storm.

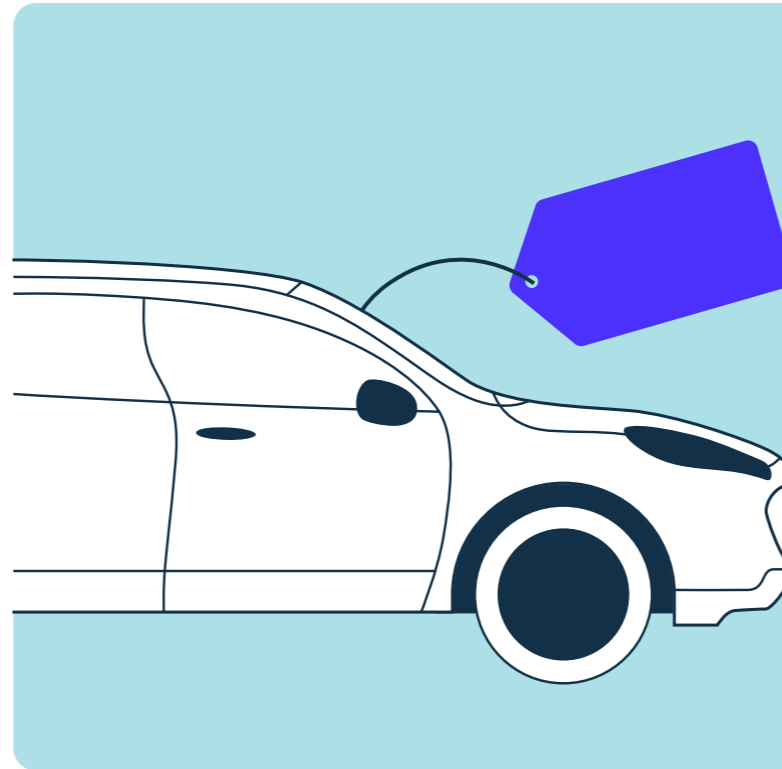
This storm we're in the middle of means that it's even more important for AI to deliver real value, right now. Whether it's processing claims faster, assessing damage more accurately or speeding up repairs, insurance companies already reeling from the challenges of the past few years need to see returns. While in the past, the promises of AI have lagged somewhat behind the reality, the time is right for AI to deliver real solutions.

Through increased efficiency and reduced waste, AI is creating value right now for those businesses that have already embraced it. Insurance companies' share of cost savings generated through AI more than doubled between 2018 and 2021, and 52% of carriers say their return on AI initiatives exceeds their expectations.<sup>4</sup> Beyond immediate returns, AI is stepping up to challenges specific to every industry – from supply chain issues to changing consumer expectations – providing exciting new solutions to global pressures that have accelerated in the wake of COVID-19. In this section, we'll take a more detailed look at some of these pressures, and how they interact.

## Supply chain disruption

When the first reports of a new virus came trickling through news channels in 2019, few people would have predicted the enormity of what was to come. Three years later, companies are still facing supply issues, impacting every part of the value chain from raw material sourcing to consumer sales. Even with the worst of the pandemic seemingly behind us, the issues remain, with the war in Ukraine showing us how vulnerable supply chains continue to be.

Breaks in the supply chain can reverberate across a whole industry, sometimes in surprising ways (see inset). The impact doesn't end with problems in meeting demand; supply chain issues affect a company's entire reputation, and subsequent customer loyalty. According to a report by The Economist, companies named damage to brand reputation as one of the most concerning impacts of supply chain disruption.<sup>5</sup>



## What does the war in Ukraine have to do with the price of a used car in Minnesota?

- Ukraine is a main supplier of neon gas, providing 90% of the United States' neon supply, and 70% of the rest of the world's.<sup>10</sup> Neon gas is crucial to semiconductor manufacturing.
- Without chips, OEMs have had to halt production of certain lines.
- With new cars in shorter supply, demand for used cars has surged, driving their prices up worldwide.
- The last few years saw increased use of semiconductor chips in the automotive industry, as vehicle electrification, advanced driver-assistance systems (ADAS) and connected cars became more popular.<sup>11</sup>



## Impact on industry

The immediate effect of the pandemic created an imbalance between supply and demand. Ongoing lock-downs meant worldwide disruption in manufacturing and supply. At the same time, consumer behavior changed dramatically, with demand for online retail products rising steeply and other demands, such as for new cars, put on hold while the world stayed indoors. With supply chain issues continuing to affect the production of new cars, even while demand for new cars rebounds to pre-pandemic levels,<sup>6</sup> original equipment manufacturers (OEMs) have begun to look to diversify their offerings by adding extra products like insurance – increasing pressure on an insurance industry already reeling from pandemic disruption.

Compounded by supply issues, the cost of certain materials has sky-rocketed, with further impact on industries such as property. Imported, sawn or planed wood, for example, saw a 74% price hike and the cost of structural steel soared by over 70%.<sup>7</sup> At the height of pandemic disruption, the BBC reported that essentials like bricks were taking over six months to arrive.<sup>8</sup> While materials are flowing more freely now, high cost remains a concern.<sup>9</sup> In the wake of a record year for weather-related disasters, supply chain issues affecting availability of building materials have left thousands with unfinished home repairs, and further, driven up costs for those affected by crises.

### Changing consumer expectations

All over the world, people have become used to life through the screen of a smartphone. This trend only intensified during lock-down; according to some studies, the average American in 2021 spent more than five hours a day on a phone,<sup>12</sup> while analysts predict that by 2024, nearly half of all e-commerce purchases will be made via mobile phone.<sup>13</sup>

While the tremendous growth in app use during 2019 and 2020 has since slowed, the “pandemic effect” remains: users in thirteen countries, including the US, UK, Japan and India, spend more than four hours a day using apps.<sup>14</sup> Naturally, customers have come to expect services around insurance, car and property ownership to stack up in convenience to other digital services they access daily.

During lock-down,  
Americans were on  
their phone each day  
for more than  
**5 hours**



### Impact on industry

Where customers once expected to interact with their insurer as little as possible – hopefully never – they now expect to manage their policies online, get automatic updates about claims and feel the whole insurance process is transparent, convenient and working for them. They make these expectations felt with demands on existing insurers and curiosity about alternatives: in a 2021 survey, 50% of policyholders said they were willing to consider BigTechs and new-age digital players if they could provide a more convenient and engaging experience.<sup>15</sup>

Thanks to big players like Amazon, people have long become accustomed to making major purchases online; the first car, the Nissan Versa Note, was sold on Amazon in 2014.<sup>16</sup> The expectation that consumers would one day buy cars sight unseen was always “up in the air.” Under the restrictions of social distancing, remote buying moved that much closer; during the pandemic, dealers embraced online sales, cutting down on personnel and saving on operational costs. In 2020, US dealers’ profits rose by nearly 50% on average, despite sales volume dropping by 15%.<sup>17</sup>

OEMs are now reaching out directly to customers with more online presence, accelerating a trend already underway before the pandemic.

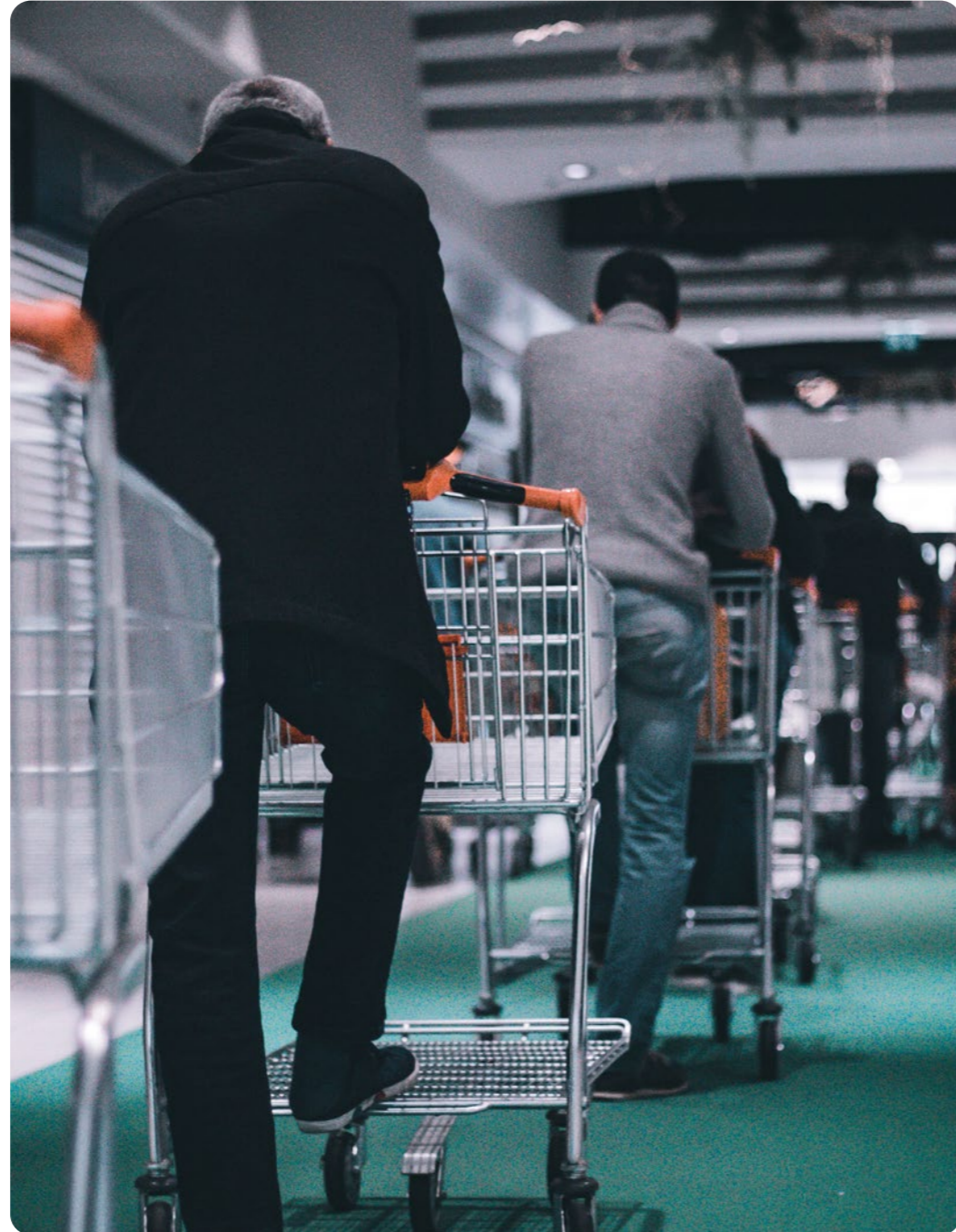
With mobile phone app use here to stay, it seems likely these trends will continue across industries. Even the property industry – generally less buffeted by short-term changes and slower to adopt new technology – is waking up to the advantages of app-based property management tools and the possibility of modelling property demand.<sup>18</sup>

### How did the pandemic change customers’ relationships with insurers?

- The pandemic accelerated a trend for life management online, including shopping and bill paying.
- Anxiety produced by the pandemic caused customers to re-evaluate policies, with reported intent to buy insurance increasing by 7%.<sup>19</sup>
- Instead of interacting with insurers as little as possible, customers now expect to manage their policies online and get automatic updates.
- Insurers are now investing in technology and partnering with Insurtechs to innovate fast and retain their customers.

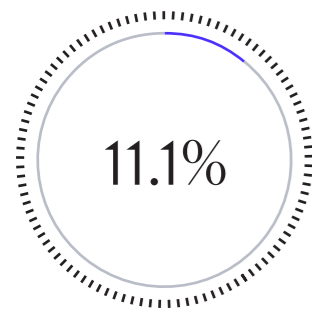




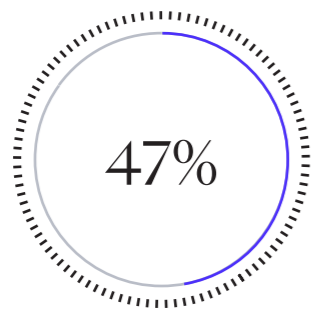


### The high cost of living

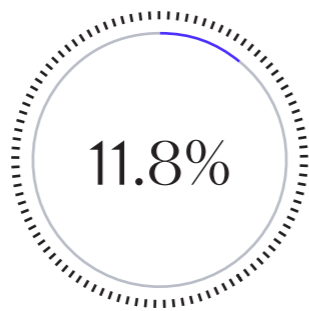
The COVID-19 pandemic triggered a global economic downturn initially “sharper than the Great Depression.”<sup>20</sup> Thanks to government support programs, the recession rapidly bottomed out, but more challenges were coming in the form of rising energy and household costs. In October 2022, the annual rate of inflation in the UK reached 11.1%, a 41-year high.<sup>21</sup> According to data insights consultancy, Kantar, 47% of UK customers expect to cut back on general expenditure, while research by intelligence company Morning Consult shows US consumers are unsurprisingly prioritizing staples over big-ticket items.<sup>22</sup>



rate of inflation in UK in 2022 – a 41 year high



of customers expect to cut back on spending



rise in insurance quote rates in 2022



of consumers switched insurers in Q1 of 2022

### Impact on industry

Inflation, of course, affects the cost of claims, which are closely linked to the costs of materials and labor. Higher claims costs means insurers may have to resort to higher premiums. Customers faced with higher premiums are shopping around for better deals – according to a study by JD Power, 2022 saw an 11.8% rise in insurance quote rates, while 3.6% of consumers switched insurance companies in the first quarter of the year. Telematics-based policies, which offer reduced premiums in return for good driving behavior, are proving an increasingly appealing alternative.<sup>23</sup> A TransUnion survey of 2,000 consumers found that customers choosing to adopt a telematics policy rose from 49% to 65%, suggesting that consumers are overcoming surveillance fears in favor of reduced premiums.<sup>24</sup>

Consumers are overcoming surveillance fears in favor of reduced premiums.



### Labor shortages and knowledge drain

The pandemic years saw a record number of skilled people worldwide resign their jobs in pursuit of a new career, or leave their jobs entirely, a phenomenon called the Great Resignation. According to the US Bureau of Labor Statistics, more than 4.3 million workers voluntarily quit their jobs in December 2021.<sup>25</sup> A survey of more than 52,000 workers in 44 countries in 2022 indicated that as many as 1 in 5 workers plan to leave their jobs within the next 12 months, citing better pay and more “fulfilling” work as top considerations.<sup>26</sup> As a result, knowledge drain is taking place across many key industries.

The number of voluntary resignations in December 2021 exceeded

**4.3 million**



### Impact on industry

In the insurance industry, an aging workforce is retiring – the US Bureau of Labor Statistics estimates 50% of the insurance workforce will be retired in 15 years, leaving more than 400,000 open positions<sup>27</sup> – and new trainees are not appearing to take their place. Natural disasters are happening now, but knowledge drain is a disaster waiting to happen. Spikes in claims after a disaster can result in huge bottlenecks and long wait times for policyholders at a critical point in their lives.

A similar phenomenon is happening in the automotive industry. Perceptions of low pay, hard physical work and the comparative allure of jobs in technology and engineering have led to shortages in the number of new auto technicians – ironically,

perhaps, given the increase in high-tech cars filled with sensors and software. Lack of new technicians has contributed to a general decline in efficiency and customer dissatisfaction with auto repair shops, where an aging workforce is struggling with the added expense and specialized knowledge involved in repairing software-enabled cars.<sup>28</sup> There is a decrease in the number of active service bays inside US auto shops relative to the number of cars and trucks on the road. The time to repair cars is increasing: according to some estimates, cars took an average of 2.1 days longer to repair in 2021 than in 2019,<sup>29</sup> and for owners of software-enabled cars, that time can stretch from weeks to months.

## Our changing climate

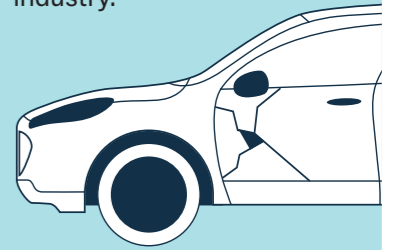
The final pressure we'll consider affects our whole planet. An astonishing number of billion-dollar weather disasters rocked the planet last year, according to insurance broker Aon's quarterly disaster report.<sup>30</sup> 2022 saw Europe's most expensive weather disaster on record, a \$43-billion flood in Germany and Belgium. In the US, Hurricane Ian caused the second-largest insured loss after Hurricane Katrina, costing between \$50 billion and \$65 billion in damage claims.<sup>31</sup> According to Climate Central, billion-dollar weather disasters are now happening an average of once every 18 days.<sup>32</sup>



Europe's most expensive  
weather disaster cost  
**\$43 billion**

## What does the repair of a damaged Porsche Taycan have to do with the cost of home insurance?

- "Smart" cars are becoming more difficult and expensive to fix.
- Specialized smart EVs like the Porsche Taycan are sometimes shipped hundreds of miles for repair.
- Labor shortages in body shops further delay the repair process.
- Longer repair times and higher material prices mean greater costs for insurers.
- Insurers pass on costs to customers, increasing premiums across the industry.



## Impact on industry

At the same time the insurance industry is losing its experienced workforce, it's facing unprecedented claims volumes. More natural disasters mean more claims, and thanks to climate change, disasters are indisputably on the rise. The unfortunate result is that people affected by crises are facing longer times to settlement. According to a study by JD Power, policyholders waited an average of 17.8 days for home repairs in 2022 – an increase of 2.9 days from 2021.<sup>33</sup>

Climate change-related disasters have knock off effects beyond immediate damage. During 2021, for example, the "Texas Big Freeze" disrupted infrastructure and manufacturing as well as damaged properties. As we have seen above, supply chain disruption and increased materials costs

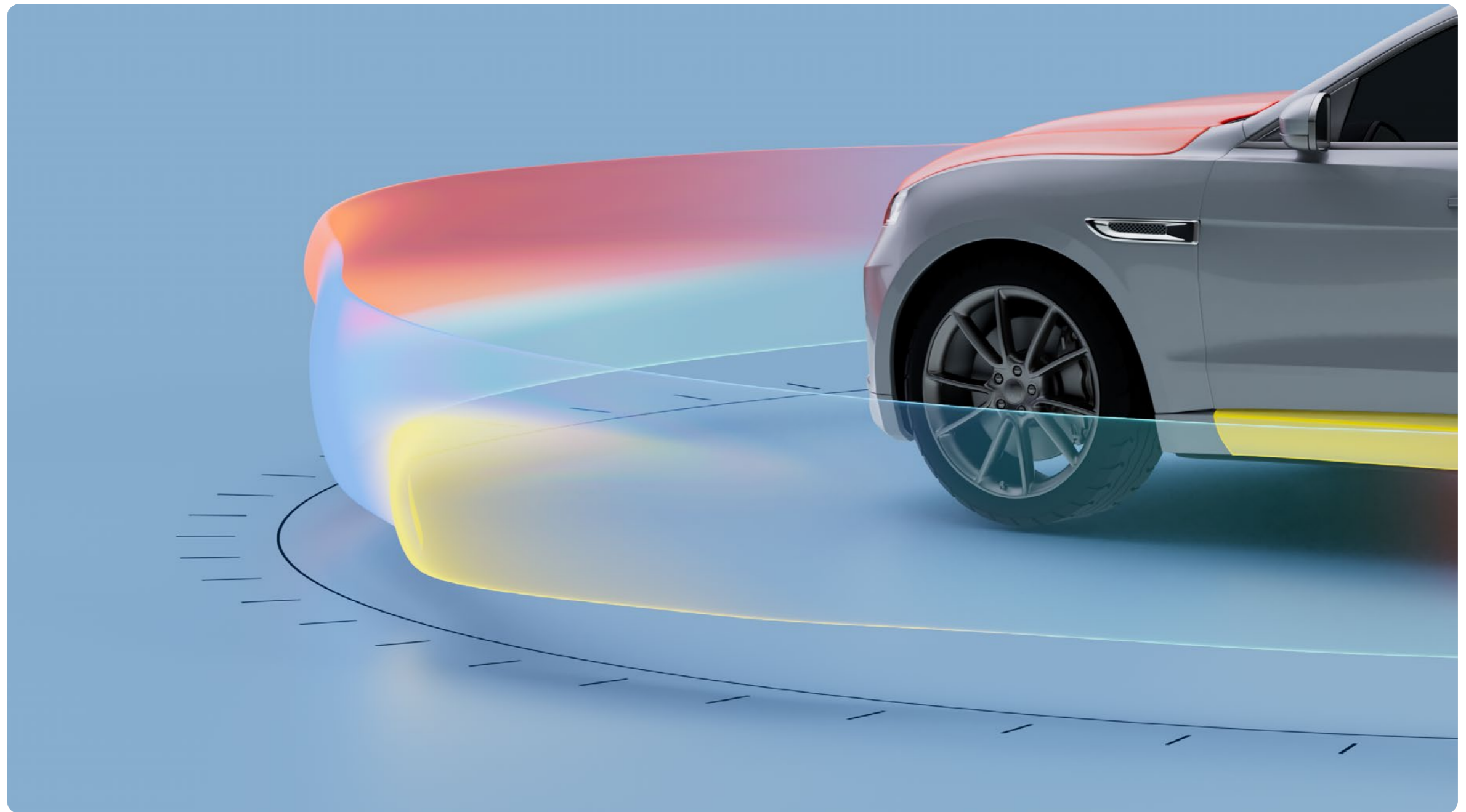
impact an industry all the way from manufacturing to customer satisfaction (see Inset 3).

Finally, the impact of climate change has an effect on consumer behavior. Demand for clean energy, including electric vehicles, is soaring; consumers bought 6.6 million EVs in 2021, and BloombergNEF predicts 469 million passenger EVs will hit the road by 2035.<sup>34</sup> But all those EVs need batteries, and all those batteries need minerals – including cobalt, nickel, graphite and lithium – which are also in demand from other clean energy projects, and have their own environmental and ethical implications around sourcing. In the case of lithium, in particular, demand has outstripped supply, pushing prices up almost 500% in 2022.<sup>35</sup>

# AI adoption: The road before us

The pressures above are diverse and interrelated, but they all have one thing in common: they are all, right now, being addressed by adoption of AI. There are three main types of AI models transforming industry today: analytics, automated data capturing and computer vision.

Across industries, adoption of these AI models is driving efficiency by automating routine tasks, optimizing decision-making and inspiring the creation of new products and services that solve problems and make life better. In the next section of this white paper, we'll look at how AI is driving efficiency and innovation to address the challenges we outlined above. Drawing on real-life case studies, we'll aim to show the impact of AI right now – and the enormous positive potential that AI can deliver for both businesses and people.



## Analytics

AI Analytics is a form of business intelligence (BI) in which AI software exhibits learning and reasoning in the process of data analysis, effectively automating the steps that humans would take to complete the analysis.



## Automated data capturing

Automated data capturing often, but not always, involves Natural Language Processing (NLP), a form of AI that derives meaning from language (written or spoken).



## Computer vision

Computer Vision is a form of AI that focuses on interpretation of visual data such as photographs and video.

## Part 2

# The AI advantage

The challenges of the last few years accelerated AI adoption already happening in the automotive and insurance industries, and kicked off an interest in AI within the property sector.

During the pandemic, people still needed their cars valued and homes assessed, but appraisals and transactions had to be done remotely rather than in-person. The time was right for the trialing of products and services that enabled remote, touchless experiences.

Remote appraisals help companies strapped for resources improve efficiency. In the insurance sector, remote assessments add immediate value by saving staff time on in-person visits and shortening claims processing times. Given that cost per claim for carriers increases the longer a claim is open – from as little as \$2 on day one, to as much as \$30 on day 30 – this can result in considerable cost reductions, which can then be passed to the customer or rolled into future investment.

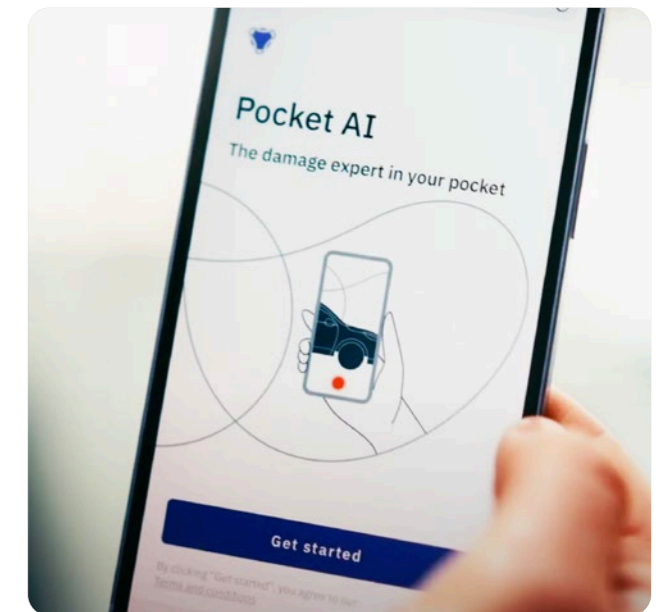
Our core product at Tractable uses Computer Vision and AI Analytics to guide customers through submitting photos of damage to cars and homes via a simple smartphone-based app. Trained on millions of detail-rich images, our AI undertakes a pixel-by-pixel assessment of customers' photos. The AI then classifies the condition or the amount of damage, and provides a detailed estimate for repair.

Top insurers across both the auto and property industries have been using Tractable's visual AI products, and seeing tremendous savings of time, effort and money for their businesses, their staff and the people they serve. The benefit of AI automation, provided that accuracy stays just as high as with a human expert, is immediate and obvious: the customer gets a faster, smoother service, and the human expert gets to do higher-value, complex work. The impact of AI on decision-making is more complex to picture, but just as powerful: quicker and more accurate decision-making impacts efficiency at every point down the line.

# Auto insurance impact: How AI accelerates the claims journey

Claims handling has traditionally been a slow, manual process, requiring customers to take photos and send them to appraisers who review them to create estimates.

As we've seen above, the global increase in claims volume, and shortage of trained claims handlers and loss adjusters, have stressed these manual processes to their breaking point, while customer expectations have changed to expect instant, seamless digital experiences. On the other side, AI aided by Deep Learning has been making astonishing advances in the areas of visual identification and analysis. The time is right for AI to step up to the challenge of transforming the auto industry, from insurance – where Tractable's AI story starts – through to retail and manufacture, repair and even salvage and recycling.



“We’re not selling AI – we’re selling speed and accuracy in making decisions. That can only be understood in relation to the current industry standard – and how much our AI improves on it.”

James Spears, Head of Automotive, Tractable



## First Notice of Loss

The only thing all accidents share is that no one wants to have them. The task of reporting what went wrong and the extent of damage is far from easy, especially when the humans involved are shaken or upset. But the reporting of an accident, or First Notice of Loss (FNOL), is the start of a journey: any improvement in speed or decision-making at this stage impacts everything that follows.

Tractable Auto Estimator was created for just this situation. Trained on millions of real-life data points – and continuously improving as we collaborate with more and more partners – our Applied AI is able to detect subtlety of damage to a high degree. With our smartphone-based app, customers are guided through the process of photographing the car, enabling them to provide immediate, accurate damage reports, even under stress.

“There’s a rash of retiring and loss of expertise. That increases pressure even more, so when disaster strikes and claim volumes spike, it’s becoming even harder to manage. But technology is infinitely scalable, so there is real value to be had in getting the tech right.”

Giacomo Mariotti, Head of Product at Tractable

Today, top insurers around the world are using Auto Estimator at the point of accident and are seeing the benefits all down the line.

For insurance industry players both old and new, AI integration speeds up the claims process, increasing straight-through processing (STP) and providing seamless customer experiences.

### Today’s impact

One top UK insurer integrated Tractable Auto Estimator to help claim representatives triage decisions and provide as little as 3-minute decisions during FNOL calls with customers. With AI, they found 80% of total losses were identified right away – a huge improvement over the industry standard of 30%.

### Tomorrow’s impact

Applying this improvement in identifying total loss at FNOL, a top 10 US carrier processing some 2.5m claims annually could save \$418m per year. Across the US alone, adoption of AI at FNOL could save as much as \$670bn annually – more than the entire global insurance cost of COVID-19 – in expenses which can be used to reduce premiums.

### Today’s impact

In 2021, Spanish-based auto insurance business Admiral Seguros integrated Tractable’s AI to automate a “touchless” claims process for its customers. They found 90% of estimates could be processed without human appraisers, with 98% of claims completed in less than 15 minutes.

### Tomorrow’s impact

Applying the time savings we’ve seen in this partnership, a top 10 US carrier processing 2.5m auto claims per year could gain up to 128 years of productivity by integrating visual AI at FNOL. Across the US auto insurance industry, based on 30m claims per year, that’s 1,541 years of time that could be freed up by AI, enabling insurers to focus on customers who need direct help.



## Claims review

The claims management process is costly and time-consuming, taking up to 50%–80% of premiums' revenues.<sup>36</sup> Much of the work involved is routine administration. Up to 40% of inbound call volumes, for example, involve basic claims status checks – a task that can be easily automated with AI. By some estimates, routine administrative claims tasks represent an efficiency loss of up to \$160 billion.<sup>37</sup>

According to a study of 25,000 claims survey responses from more than 50 P&C carriers,<sup>38</sup> customers rank “timeliness of service and resolution” as the second most important factor for a positive experience, and the third most important factor for

negative one. Responding quickly and accurately to claims not only keeps customer dissatisfaction low, but positively influences customer trust and brand loyalty.

Tractable Auto Reviewer (Auto Reviewer) uses automated data capture and AI analytics to identify straightforward claims that can be processed automatically to insurers' standards, automate real-time review of estimates and even help facilitate disputes between parties. Trained on millions of data sets, Auto Reviewer not only speeds up cycle times but also excels at flagging inconsistencies, errors or anomalies easily missed by human reviewers.

### Today's impact

Our partners are able to review 70% of claims without human involvement, cutting review times per claim from half an hour to just a few minutes. This efficiency at the start of the process has a ripple effect, and the results from our partners indicate on average an 8-day reduction in cycle times.

One large North American carrier adopted our Auto Reviewer with the goal of “finding efficiencies.” After using our AI, they identified efficiencies of \$270 per-processed claim.

### Tomorrow's impact

If our partners' efficiency savings using Tractable Auto Reviewer were extended to a top 10 US carrier processing 2.5m auto claims per year, our AI could find \$100m worth of efficiencies per year, and reduce cycle times by 6,849 years. Across the whole of the US, that figure (based on 30m auto claims) could be as much as \$1.2bn, and the total reduction in time to settlement, collectively, could add up to 82,000 years.

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Up to 40% of inbound call volumes involve basic claims status checks – a task that can be easily automated with AI.



“Tractable’s AI drives consistency that has never been seen before in our organization.”

Adjuster supervisor, top 10 US insurer

## Subrogation

Accidents can happen to anyone, but not everyone involved in an accident is at fault. Subrogation is, of course, vital to insurers who need to recoup costs for claims paid out to those customers who weren't at fault, and recouping costs effectively means insurers can keep premiums low. When recouping costs becomes costly itself, AI can help the process.

Tractable Auto Reviewer: Subrogation identifies disputes and facilitates the appropriate response to the adverse carrier, all in under a minute. The adjuster uploads the demand packet, our AI quickly analyzes all the information provided by the adverse carrier, and variance from the AI's assessment is flagged, creating a pre-populated contention report with a corresponding cost calculator.



Potential reduced expenses for a top 10 US carrier through our AI:  
**\$187 million**

Potential saved annually across US insurance:  
**\$2.25 billion**

### Today's impact

One top American insurer implemented our Auto Reviewer solution into their subrogation operations, calibrated to their standards. The results were so impressive that adjusters not only used it to speed up processing, but as a training tool, with the carrier seeing 15x ROI.

### Tomorrow's impact

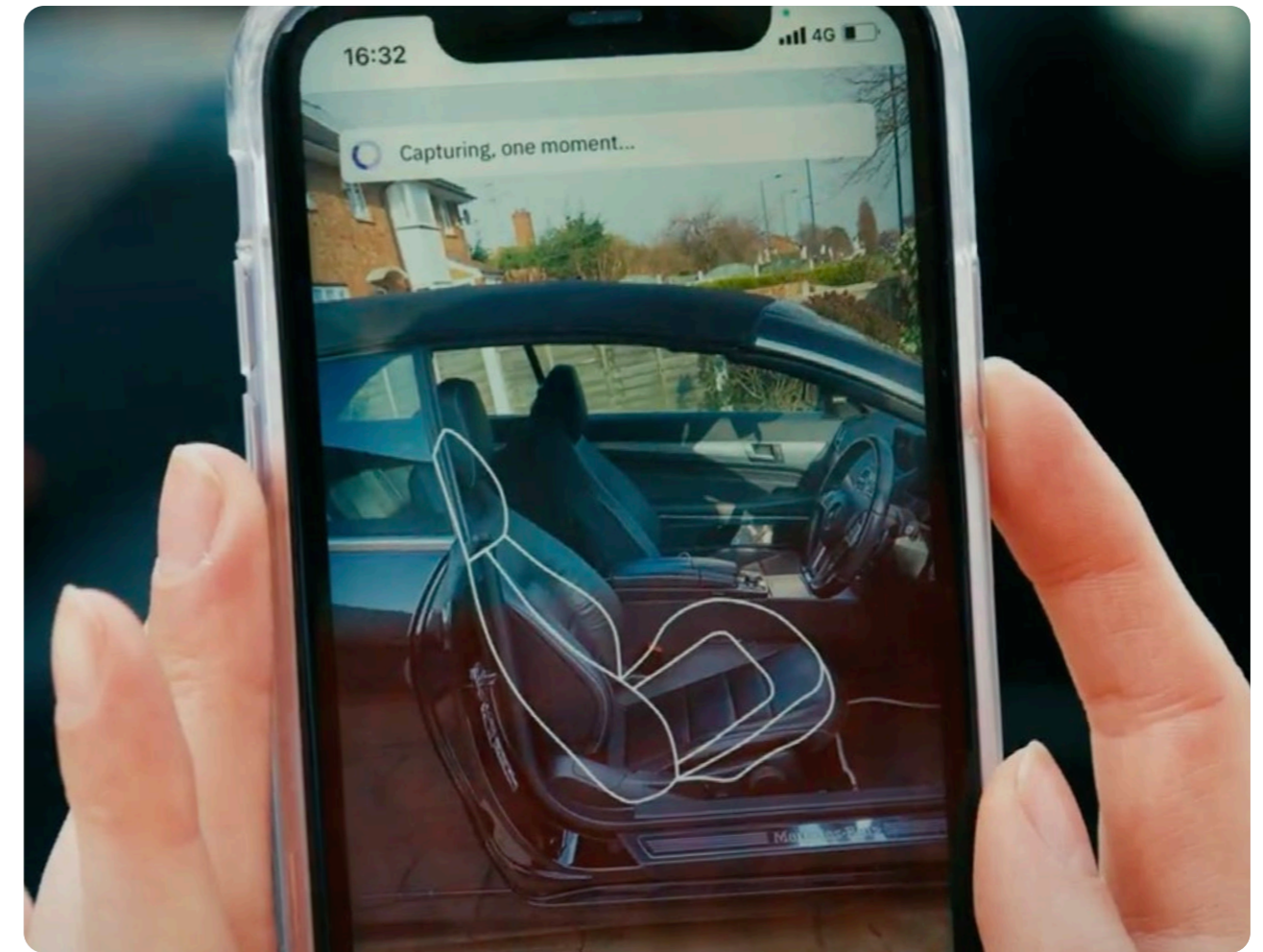
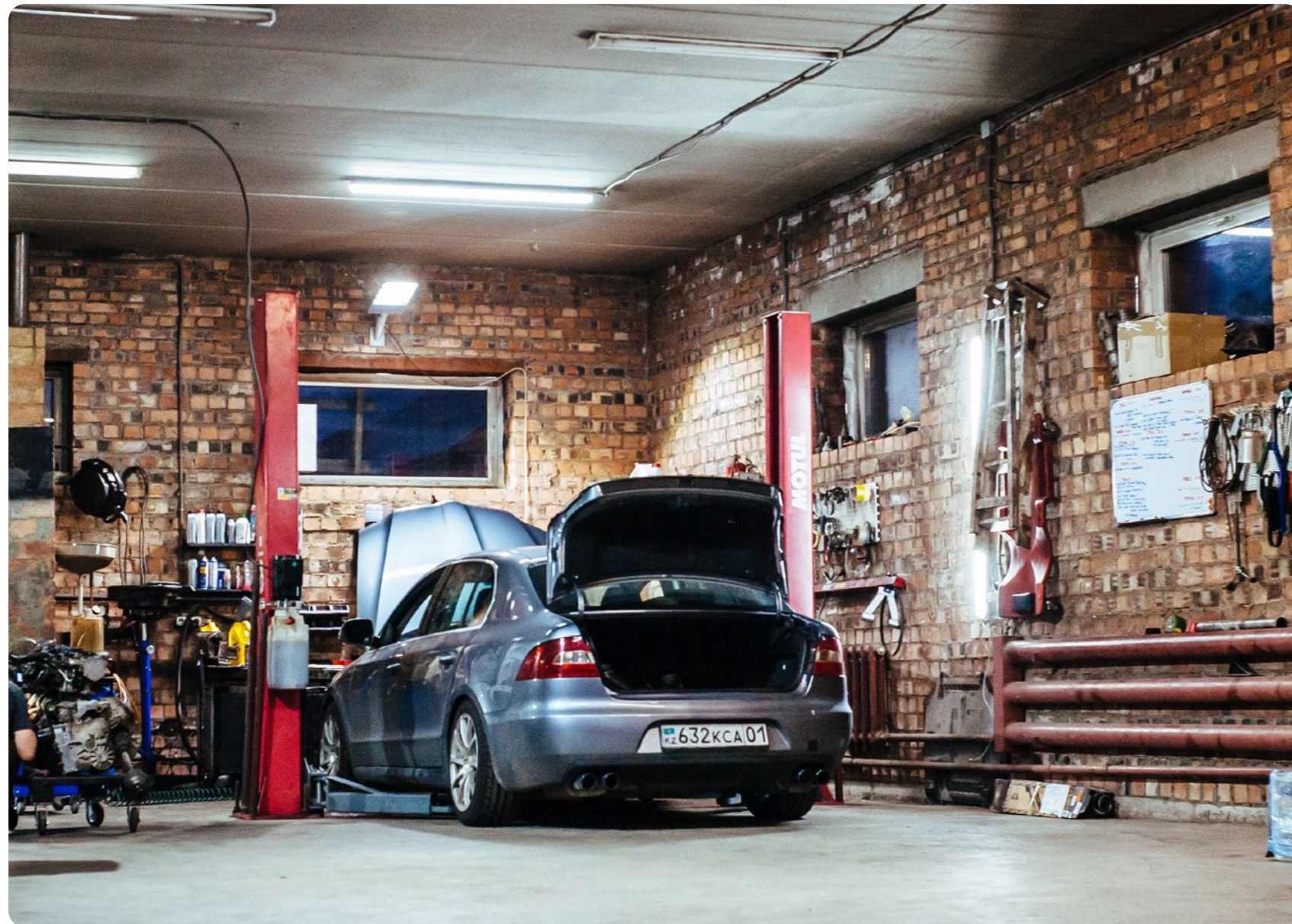
Applying these incredible gains, for a top 10 US carrier processing 25% of its claims volume as subrogated demand packets, our AI could reduce expenses by \$187m per year – reducing time to subrogation settlement by an aggregated 828 years. Across the US insurance industry, AI could save as much as \$2.25bn annually in similar subrogation claims, right now.

## Repair

It's clear that AI-based automation across industry-wide workflows – from FNOL and triage to subrogation, wherever automation can take place – drives the best ROI for businesses and creates great customer experiences. But the transformation doesn't stop there. As our AI has developed, we've found more and more use cases for sophisticated, deep-learning based visual AI. Our AI is now being used by repair

shops to assess damage and help source the exact parts needed for repairs.

As we saw in Part One, ongoing supply chain issues after COVID-19 led to historically slow repairs; customer satisfaction with the repair process registers a 9-point year-over-year decline.



The average repair cycle time is nearly 17 days, compared with a pre-pandemic average of about 12 days.

Once again, AI is ready to rise to this challenge. As we have already seen, our tools help identify damage at FNOL, enable insurers to get accurate and detailed estimates and speed up the entire claims journey. The work we do naturally dovetails with and accelerates the repair process; for example, getting accurate FNOL estimates and identifying exact parts for replacements can help body shops order parts ahead of time.

The cumulative effect is a hyper-acceleration of the car repair process. Not only does this help body shops pressured by all the factors above be more productive and make efficient use of their time, costs and limited shop floor space – it drives a great customer experience, getting cars repaired and customers back on the road much more quickly.

“This year marks the first time a majority of customers cited supply chain issues such as waiting for parts on order and repair shop backlog as reasons for delays in getting their vehicle back on the road.” <sup>39</sup>

JP Power

## Recycling

At a time when body shops are struggling with labor shortages and repairs are growing more complex, putting AI at the heart of the auto repair industry can help everyone involved in its cycle, and even the planet itself:



### AI helps businesses

Auto parts businesses get more value for every car they buy at auction, increasing margins. By automating the time-consuming task of identifying parts, people can spend more time accurately categorizing the quality and pricing of those parts for onward sale.



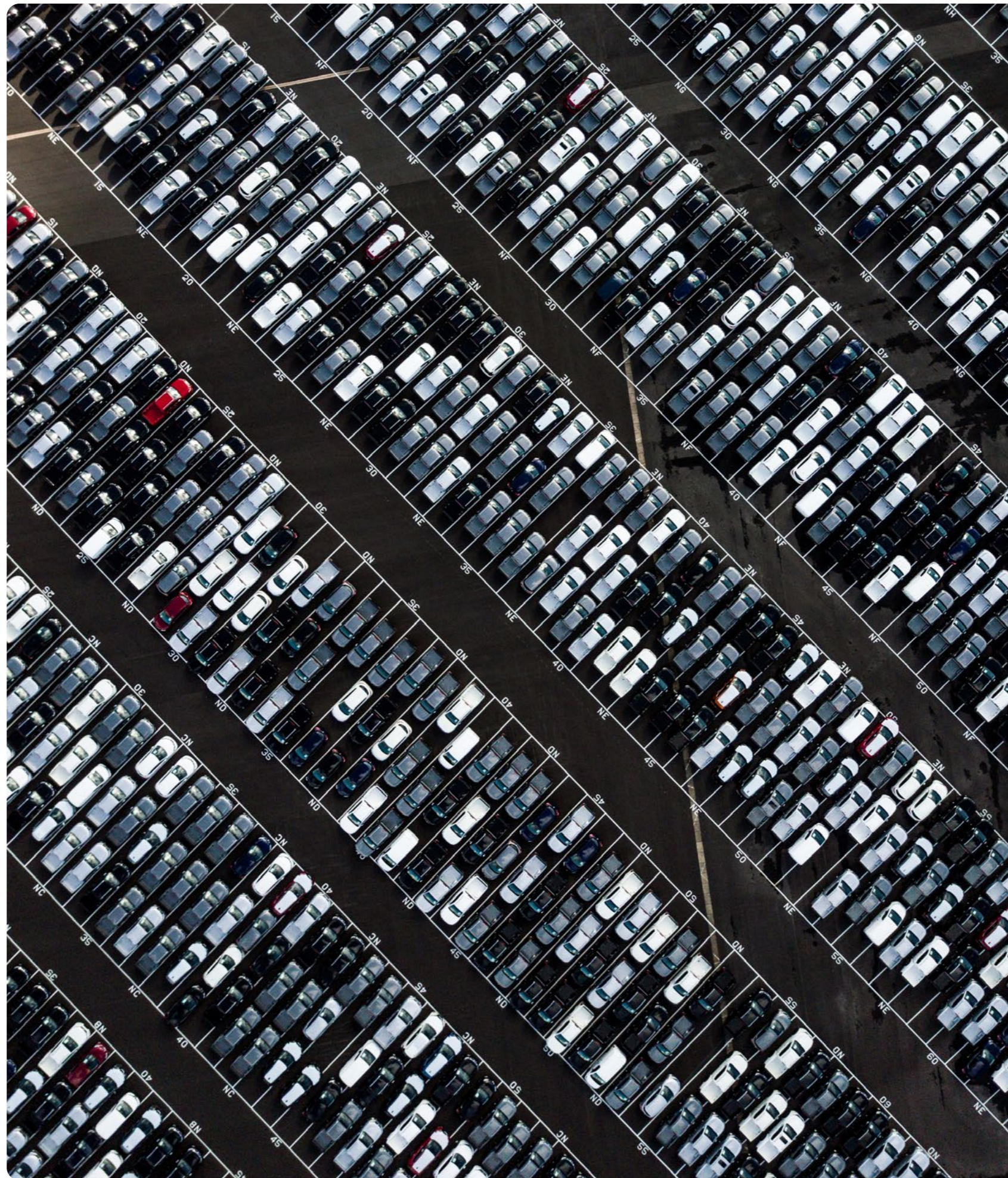
### AI helps customers

By easing the burden on the supply chain for new parts, customers get their cars repaired sooner and have improved experiences with body shops who are better able to manage their workflows. Recycled parts cost 20% to 80% less than new auto parts, which translates into significant savings for cash-strapped customers.



### AI helps the planet

More recycled parts supplied locally mean less use of natural resources to manufacture and ship across the world. For materials that are in short supply, like silicon for semiconductor chips, or that have ethical implications, like cobalt mining for EV batteries, identification and improvement in recycling can have an enormous positive impact.



### Today's impact

Based in North America, LKQ Corporation is the world's leading alternative and specialty auto parts provider, with more than \$12bn in annual revenue. As the inventory management process can be repetitive and time-consuming, LKQ turned to Tractable to streamline its operations by automating how it detects and assesses damage, procures vehicles, then tags and inventories the many recyclable car parts.

Through integrating Tractable Auto Inspector, LKQ's staff accuracy has been boosted by approximately 8% – but the real impact is in the parts that figure represents. For every car LKQ buys, our AI can identify on average twice as many parts to recycle per car. For every 100k cars, that means 200k more parts identified for recycling.

### Tomorrow's impact

Applying these efficiency savings, for the 12m cars recycled each year in the US alone, Tractable Auto Inspector could identify 24m additional parts. Globally, on average 27m cars are recycled each year, with huge environmental implications. That's 54m additional parts that could be identified and saved via AI – benefiting not only customers who can get their replacement parts faster, but also the planet.

# Property insurance impact: How AI takes care of homes

Just as we saw with the auto insurance industry, the ability to make accurate decisions more quickly at FNOL can result in huge efficiency savings all down the claims journey. While Tractable's own story began with auto, as we've continually pushed the boundaries of what our visual AI can do, we've found new applications in other industries just as ready for innovation. As the property insurance industry faces the pressures of our increasingly volatile world, AI can speed up claim times, help developers build more effectively and even increase materials recycling.

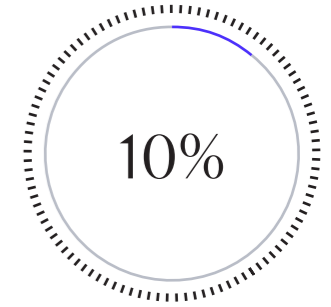
The impact of AI on the property industry doesn't stop there.

For property claims, the complexity of in-person assessments often delays repair estimates and payouts even further. This is especially true in areas stricken by natural disasters. For hard-to-reach areas like roofs, or areas made dangerous by damage, our AI can draw on aerial imagery to compare and model damage safely, immediately and remotely. And when estimates are created more accurately up front, repair costs can be reduced by as much as 10%, as indicated by our case study of typhoon Nanmadol. Through all these improvements, AI can help insurers keep premiums lower, which in turn helps cash-strapped families everywhere.



The more I looked into AI, the more I saw how it could change the workload and life of an adjuster for the better.

Dana Putska, Senior Property Expert, Tractable



of repair costs can be reduced when estimates are accurate up front

## Today's impact

On September 19, 2022, 9 million people were asked to evacuate their homes as super typhoon Nanmadol bore down on Japan, bringing with it winds gusting at up to 250 km/h. The average time to settle a property claim in Japan is an agonizing 3 to 7 weeks. After the devastating impact of Nanmadol, a top Japanese insurer turned to Tractable Property Estimator (Property Estimator), our AI-powered smartphone-based damage assessment tool, to help affected families process their insurance claims. These families received payouts on the same day – some in as little as an hour.

## Tomorrow's impact

In October of 2021, at the time Tractable launched Property Estimator, Typhoon Mindulle ripped through Japan, causing \$100m damage to about 20k houses. During this launch, Tractable saw weeks of waiting time reduced in many cases to a single day and even to as little as 3 hours. Applied to all damaged houses, our Property Estimator could have saved up to \$10m in overall repair costs, and between 20 and 48 days of waiting per customer. Applying this impact across the claims volume of North America, where Property Estimator is now being utilized by a top 10 US insurer, indicates that of the 3 million households waiting for critical home repairs, many will have weeks of waiting eradicated, along with the ensuing stress, displacement and uncertainty.

## Guiding customers through the journey

All these figures are only as important as the customers behind them. For every efficiency saving, a human is better served, as insurers are able to notify customers instantly and accurately of total loss, automatically resolve simple claims quickly and effectively and put human attention on those claims that require it.

And customers are responding positively to AI, too. Our policyholder web app consistently scores 4.5 out of 5 stars for convenience and usability. For one insurer, that means twice as many customers complete the process as compared to their current method, while other insurers report an astonishing 87% completion rate. With the power of AI vision and the ease of an app, customers can feel more confident in their provider, better supported through the process and prepared to engage when accidents do happen.

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Customers can feel more confident in their provider, better supported through the process and prepared to engage when accidents do happen.



# AI impact on industry in numbers

## Industry problems

### Knowledge drain and labor shortage

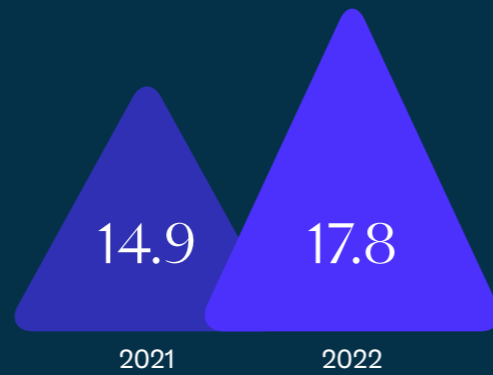


of workers plan to leave their jobs within the next 12 months



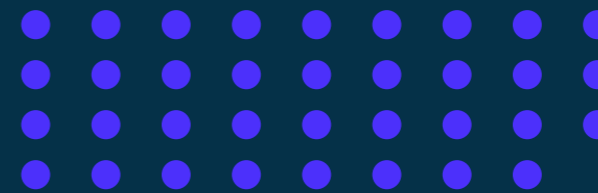
of the insurance workforce will retire within 15 years

### Home repair time (days)



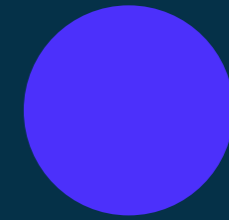
## Improved time efficiency

### Property Estimator



5 weeks

Industry standard claims process time



1 day

Using Tractable's AI



1 hour

Fastest claim time

### Rising costs

Structural steel



Imported, sawn or planed wood



### Auto Reviewer

Industry standard claims process time

30 mins

Using Tractable's AI

2 mins



of claims reviewed by our partners are done without human involvement

## The AI accuracy advantage

### Auto Estimator

One top UK insurer integrated Tractable Auto Estimator to help claim representatives triage decisions and provide 3-minute decisions during FNOL calls with customers.

Total losses identified with AI



Industry standard



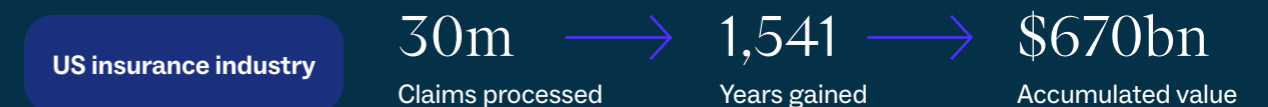
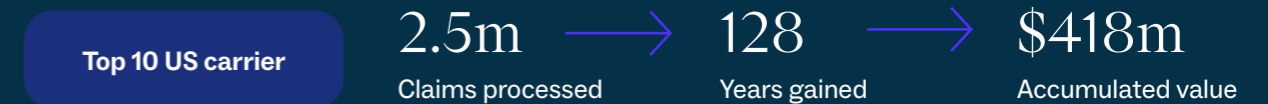
### Auto Inspector

Car parts recycled per vehicle with Tractable's AI



## AI benefits

### Value from integrating visual AI at FNOL (auto)



## Part 3

# An AI-powered tomorrow

The application of AI in these industries is still in its infancy. Ten years ago, the possibility of bringing Machine Learning to bear on huge data sets did not exist. Five years ago, AI struggled to differentiate a cat from a dog.

Now, across the whole field of AI, advancement is happening at a scale only teased by science fiction. Our applied AI can look at a photo of a car and tell exactly which part, and from which model, needs to be replaced. Open AI has released GPT-4, which has met expectations and "totally eclipses" GPT-3 in being able to additionally handle visual inputs and outputs with more superior compound results.<sup>40</sup> Visual AI is improving exponentially – from the artistic output of AI like Midjourney to image-reconstructing masked autoencoders (MAE). A large part of this is down to compute power: according to OpenAI, the amount of compute used in the largest AI training runs doubles every 3.4 months, resulting in 300,000 times the amount of compute that was possible in 2012. What AI will be capable of – and what will we be doing with that capability – five years from now?

To answer that question, we asked the team at Tractable, who range from Oxford and Cambridge engineers to former claims adjusters and expert body shop technicians, about the ways they think their industry might be transformed by AI. Their verdict? Each industry seems set to experience some particular changes in the next few years that will drive AI adoption forward. In the auto industry, the battle for the customer will be key; in the property industry, it's all about adapting to changing times.

Looking further ahead, some common themes emerged about the way AI will change how we live and work. We explore these as we follow a customer through their journey of car and home ownership in the year 2025 through the decade that follows.

# AI and the battle for the customer

In the next few years, the auto industry faces major upheavals as the model of dealerships selling fossil fuel-powered cars to people who own them outright is usurped by several challengers. In 2022, the BBC reported that UK car production had fallen to its lowest level in 61 years.<sup>41</sup> While experts predict a tentative rebound in US car sales in 2023,<sup>42</sup> they warn that higher interest rates and an ongoing recession will continue to make life difficult for automakers, dealers and consumers alike. At the start of 2023, the current average price of a used car on AutoTrader was £18,268, the highest ever reported on the site.<sup>43</sup> It seems likely that the future will bring increased interest in used cars, as well as interest in alternative mobility such as e-scooters. This and the continued rise of shared mobility, such as car sharing, ridesharing and e-hailing, will all come at the expense of new car production.

To combat all these challengers, OEMs will continue to innovate in the types of car they make. As connected vehicles continue to rise in popularity, OEMs will have access to vast amounts of telemetry data, driving a demand for partnerships with players who can make use of that data.



In 2022, car production fell to its lowest in  
**61 years**

In 2023 the average price in the UK of a used car was  
**£18,268**

Continuously updating software packages (such as those Tesla and Polestar offer today) will open up opportunities for ongoing customer engagement. As OEMs collect the data they need to diagnose faults before they turn into damage, they'll be able to keep the customer within their own branded repair networks – putting pressure on independent body shops. And as they'll be in the loop from the moment a car has an accident, they'll put pressure on already squeezed insurance carriers, too.

The impact? An AI revolution across the board. From insurance carriers underwriting with AI to create more customized premiums, to OEMs analyzing every bit of data with AI to innovate and drive new customer experiences – and all the cross-industry partnerships we haven't even thought of yet – all players will be looking to AI as their key to enticing and retaining customers. And the AI itself will only get better: faster, more accurate and easier to use. With the capacity to unite whole ecosystems of buying and selling, AI will finally deliver the possibilities we'd imagined.



# With all that in mind, imagine...

2025

## It's 2025 and you need a new car

You pick up your phone and look up your favorite electric car brand, choose the model and color you like best and go out to dinner. The next afternoon, the car's in your driveway. After a quick test drive, you decide to accept it, as well as the manufacturer's insurance deal. You use their app to scan the car on your phone, creating a permanent visual record to hold up against any future damage claims.

1. Dealerships will pivot to providing remote online buying experiences
2. Customers will buy from manufacturers (OEMs) directly
3. OEMs will control more of the customer journey, including insuring – the battle for the customer will intensify

2028

## It's 2028 and your car turned three

A text from the car manufacturer informs you that your car's brake pad is wearing out; on Thursday they drop by with a temporary car (the next model up) while taking yours in for parts replacement. While your car is at the body shop, the AI scanner picks up some rust on the undercarriage and notifies a technician, who sands off the rust and applies some sealant.

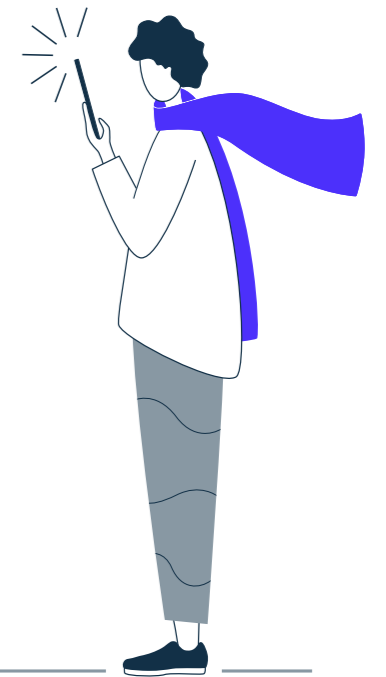
1. Focus will change from repair to prevention, heading off damage before it becomes severe
2. OEMs will offer software upgrades and custom / subscription services, establishing long-term customer relationships

2029

## It's 2029 and you're going on vacation

You drive your car to the airport, where a maintenance scan gives it a thumbs-up, and park in the long-stay lot. On arrival, you pick up the keys to a rental car from a lockbox and enjoy two weeks in the countryside. At the end of the trip, you're running late for the flight but you simply scan the rental car with the app on your phone, pop the keys in the box and make it with time to spare.

1. Remote assessment will free the fleet and rental market – and cars will be maintained as needed, rather than by routine
2. A common "AI standard" will improve trust, encouraging peer-to-peer sales, shared rental or ownership schemes

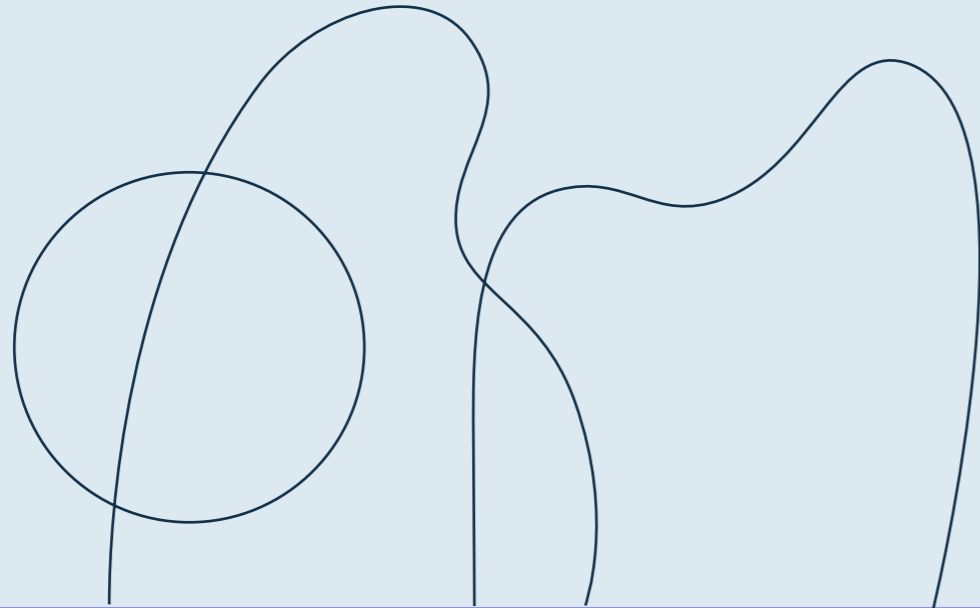
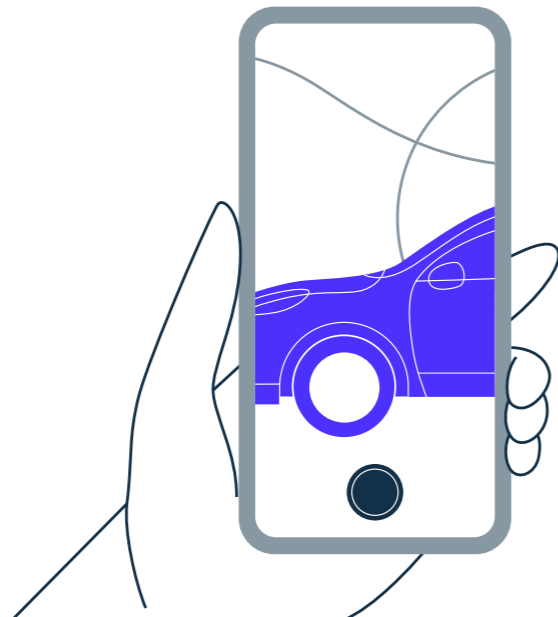


2031

## It's 2031 and you've had an accident

While thinking about vacation, you rear-ended a Honda. The app that you use to take photos of the damage suggests it's not too bad – a dented bumper – but just to be sure, it directs you to an automated assessment drive-through. Your insurance premium gets a bump, too, but the manufacturer can reduce it if you upgrade to their new automated braking system.

1. As costs go down, manufacturers could build assessment drive-throughs powered by AI Vision
2. Insurers may (consent permitting) partner with OEMs to use data from vehicles to reward good driving habits and mitigate risky ones



2035

## It's 2035 and you've driven your car for over a decade

A message from the manufacturer tells you the car's engine is underperforming and some of its electronic components are out of date. They offer you an affordable lease for their latest model, made with 80% recycled materials. You accept and they collect the car, leaving you with the new model that has your favorite feature yet – a full self-driving option that means you can order that bottle of wine at dinner.

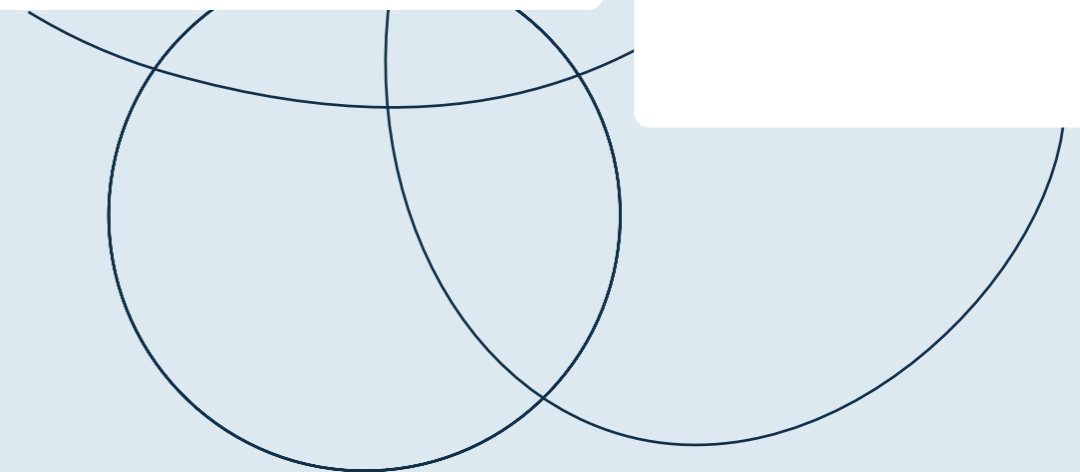
1. Instead of buying, leasing cars direct from the OEM will become the norm
2. Automation will be standard; innovations will be escalated by the ease of software updates

2036

## It's 2036 and your old car is now part of a new one

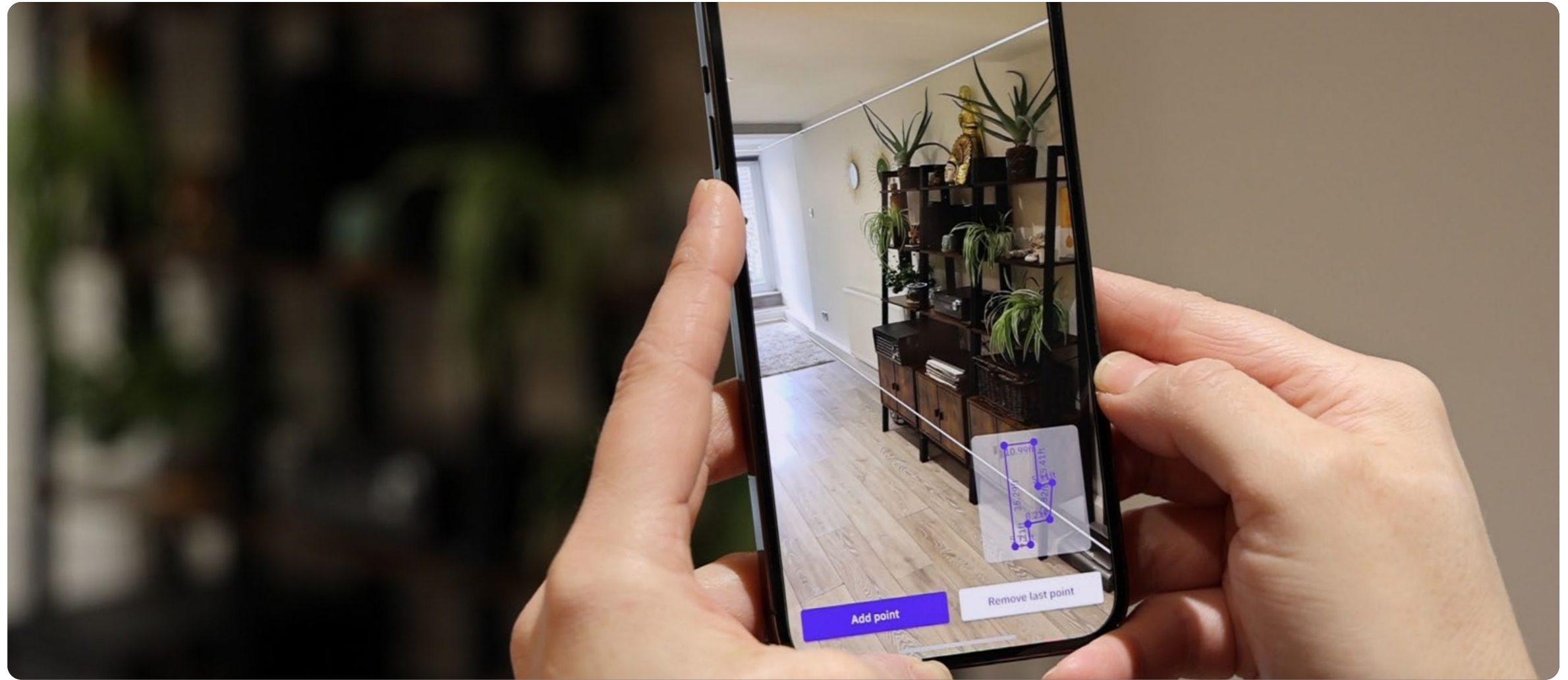
Every part of your car was visually assessed and given a condition score, then put on a system where body shops could easily find and order them. The air compressor, which had been replaced the most recently, is now cooling off another car, saving a customer 40% on their air conditioning repair bill. Thanks to telemetry data from your old car, and thousands like it, a small adjustment was made to the automated steering feature. As the newest model rolls off the line, AI sensors precisely calibrate the placement of the engine.

1. AI will help identify everything that can be recycled, right down to the cobalt in batteries
2. AI inspection in manufacturing will lead to less equipment failures and better quality control
3. Savings from AI efficiency improvements may be passed on to customers via cheaper leases or lower premiums



# AI and the need to innovate

Technical innovation has always been at the heart of the auto industry, so it's no surprise that AI is fast becoming embedded throughout that ecosystem. Property, an older industry, has traditionally been slower to adapt.



But as pressures increase in the form of all the challenges we've discussed in this white paper, businesses across all areas of property are recognizing the need to change. We've already seen how AI hugely improved waiting times for the families who suffered damage to their homes during a typhoon in Japan. What could AI do across the cycle of buying and selling, insuring, repairing and even recycling in this industry?

The role of property management companies is changing in a way similar to that of car dealerships. As homes are bought and sold online, remote viewing has become an essential tool, supplemented by augmented reality which allows customers to understand a property even before it is built.<sup>44</sup> Remote viewing apps are speeding up check-ins and check-outs for renters. For investors, real estate applications based on Machine Learning models can predict changes in rent rate with 90% accuracy, enabling smarter purchasing.<sup>45</sup>

We've already seen how automation can speed up the claims process and help people get critical home repairs done faster. As AI improves, more and

more tasks can be automated, taking pressure off claims reviewers and loss adjusters in an industry suffering from labor shortages. Enriched by AI data, underwriting will become more accurate and tailored, and arguably fairer, for not being based on traditional demographics such as occupation or age.

The impact doesn't stop at buying and selling. AI will help people across the whole cycle of owning a home. By providing a single "trust source" by which all crucial information about the property can be assessed, AI can help ensure consistent house valuations and fair repair estimates. As AI-based apps offer real-time engagement, homeowners can benefit from advice on how to secure their property in response to changing conditions. And just as with cars, the next few years will see the internet of things home revolution finally come into its own, enabled by AI. Smart sensors will alert homeowners about problems before they happen and automate energy efficiencies, driving real savings for households in the event that energy prices continue to rise.

Extending these innovations to the commercial property market has the potential for huge impact.

Smart devices in this context are already enabling predictive maintenance and energy savings. Conferring with AI data can help property developers build with the right materials (such as reinforced roofs) for an area. The greatest potential for impact perhaps lies in recycling: just as we've seen with car parts and body shops, AI can help identify materials for reuse, and direct them where they're needed.

Across the property ecosystem, as AI adoption accelerates, the possibilities grow. By aggregating data, we gain powerful insights that can help us not only understand damage but even predict it. One of our own research projects, GaLeNet, combined information about the weather, the trajectory of the hurricane and images of buildings in the area to predict damage before visual evidence of it. When these kinds of data-sharing AI partnerships become more commonplace and robust, they will have the potential not only to help allocate resources after disaster, but change the way cities manage critical infrastructure, and even save lives.

# With all that in mind, imagine...

2026

## It's 2026, you're buying your first house

As a long-term renter, you use an app to vacate your current tenancy, taking a guided video of the cleaned property and receiving your deposit back on the spot. But just after moving in, some bad news — your insurer informs you that due to climate changes, your new house is in an area with increased risk of storm damage.

At the insurer's request, you submit an AI-based video inspection of your new home that includes thorough documentation of the area around it. The insurer checks your video against their aerial imagery of the house. Within a day, the underwriter for the insurance company comes back with a solution: if some of the trees can be trimmed and the roof reinforced, they'll insure the house. You agree and the insurer matches you with a local handyman who carries out the fix.

1. Enriched with data such as aerial imagery, underwriting will be more accurate and customized
2. Insurance will become more proactive, tailored and focused on damage prevention

2028

## It's 2028 and a storm's on the way

After two years of mild storms and no damage, you get a text from the insurance company alerting you to a category 4 hurricane and advising you to take some preventative measures, like locking away the kids' trampoline, putting your car in the garage and barricading the windows.

The storm is fierce, but the roof stays put, though there's some flooding in the basement. You take a video of this and the exterior walls at your insurer's request — their app makes it easy, right down to automatically calculating the wall measurements.

Your insurance company checks your video against their overhead post-storm imagery and can see that the roof needs minor repairs. Within an hour, they send you an estimate. Within an hour of accepting the estimate, the money for the claim is in your account. Although your usual contractor is fully booked — there are lots of repairs to be done post-storm — you're matched with a contractor from a nearby area who fixes the damage the next day.

1. Data points before and after disaster, gathered at scale and analyzed by AI, will help cities direct resources more efficiently
2. AI will prove an "established trust source," keeping estimates fair even during times of high demand

2033

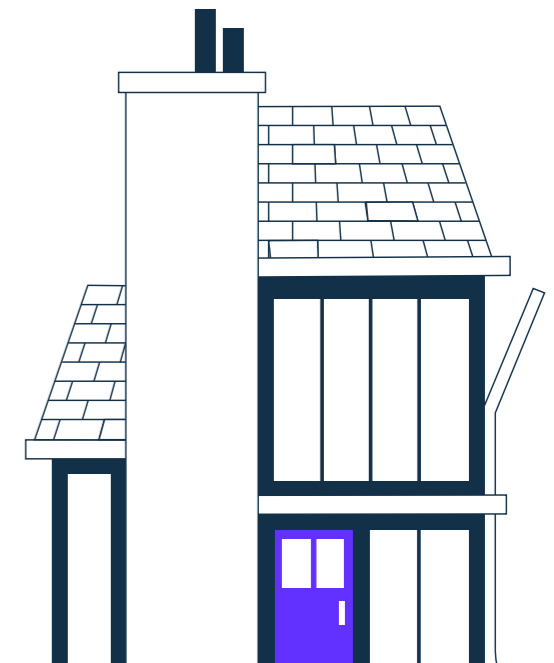
## It's 2033 and you're ready for a new home

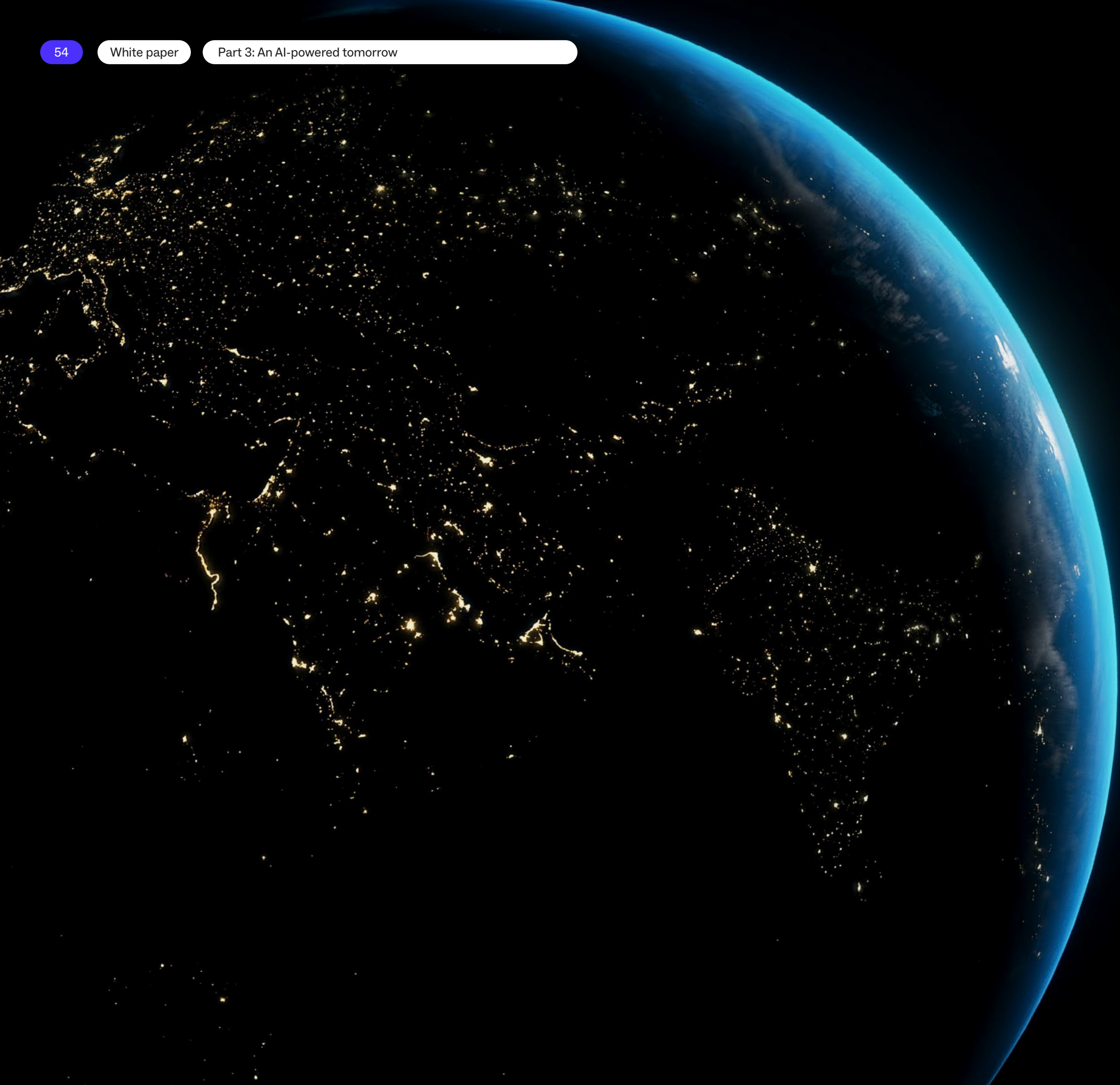
After seven years in this house, you're moving on and have just seen your dream home for sale. Hoping you've taken good enough care of your current one to see a good increase in value, you take a detailed video walk-through of the house and submit it to the bank. You get a mortgage deal that evening, right in time to put in an offer.

Your dream home is a bit of a fixer-upper, and you've got particular taste in sink faucets. After some careful demolition, you take photos of the removed pipes, electrical fixtures and fittings. Based on images of the elements taken at various angles, your home builder app shows a range of new options, while also assessing the condition and value of the used ones and submitting them to local contractors. The money you receive for recycling the materials pays for the safety features you want to install. Even better, when you submit the new features to your insurer, they agree to lower your premium.

Not far from where you live, a new block of apartments is being built with flood doors and reinforced roofs. The city now undertakes regular aerial inspections of the region's flood defences. You're happy to see that reflected in your premium as well.

1. The same AI-enhanced workflows will be applied to commercial property
2. Improved recycling will help supply chain issues and bring down repair and build costs
3. Governments will use AI Vision to inspect infrastructure at scale
4. Property developers will confer with AI to build the most robust and suitable property for an area
5. Insurance premiums will reflect individual circumstances rather than relying on generalized demographics





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“What if we can use imagery not just from a smartphone – what if we can use imagery from the skies? Aerial data collected at a much higher scale and analyzed by our AI, so we can see areas of risk and maybe even prevent disasters from happening. That’s where we would like to go.”

Alex Dalyac, Co-founder and CEO of Tractable

These scenarios show us the kind of cross-industry impact – improving efficiency at every stage of the cycle – that could be achieved with widespread adoption of AI. And it doesn’t need to stop at cars and homes. The circular economy concept can be replicated for everything that is insured or visually assessed: from commercial property, consumer electronics, infrastructure, agriculture, even the human body. Imagine that, in the future, an AI system could learn to correlate the severity of damage to the vehicle to the type and extent of injury. What if we could use the data from a car accident to direct a person to the best hospital for their injury? The possibilities to improve human lives through Applied AI seem almost limitless.

Of course, no one can predict the future. But we can be reasonably sure that AI will continue to develop in exponential leaps, and that companies across the auto, insurance and property industries stand to benefit hugely from these advances – if they start building AI into their business now. For many businesses, that means forging the right partnerships to ensure a high level of AI expertise from the ground up.

Whatever form AI takes, for the customer at least, the end result will likely be simple, seamless and accessible through a smartphone. Far from the robot uprising of science fiction, the AI of the future will be quietly improving the processes that currently cause humans despair – automating away our frustrating delays and unnecessary efforts, and

replacing them with smooth, intuitive experiences. The transformation will be so embedded as to be almost invisible, but the impact will be immense. An AI approach that makes customers happy rather than frustrated has the potential to turn the whole perception of the insurance industry on its head.

We're looking forward to bringing this future to the world, with the partnerships we're creating today.

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Organizations are moving toward less siloed data, and a more open ecosystem. At Tractable, we work closely with the people who partner with us – aligning with their value drivers, and addressing knowledge gaps, so that they get the most return on their AI investment. Together we're moving the industry closer to the kind of impact we've seen is possible.



## About Tractable

Tractable is an Applied AI company that uses the speed and accuracy of artificial intelligence to visually assess cars and homes. Our solutions aim to help people work faster and smarter, while reducing friction and waste – better for businesses and the planet.

Trained on millions of data points, Tractable's AI-powered solutions process more than \$2 billion in vehicle repairs and purchases annually, and connect everyone involved in insurance, repairs, and sales of cars and properties.

Founded in 2014, Tractable is the AI tool of choice for over 35 world-leading insurance and automotive companies, including over 10 of the Fortune Global 500. Backed by Insight Partners and other top-tier investors, our world-class research and engineering team is based in London, with offices across North America, Asia and Europe.

### Get in touch

To learn more about Tractable and schedule an AI demo, visit [tractable.ai](https://tractable.ai)

You can also follow us on LinkedIn and Twitter.

[tractable.ai](https://tractable.ai)

# Endnotes

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