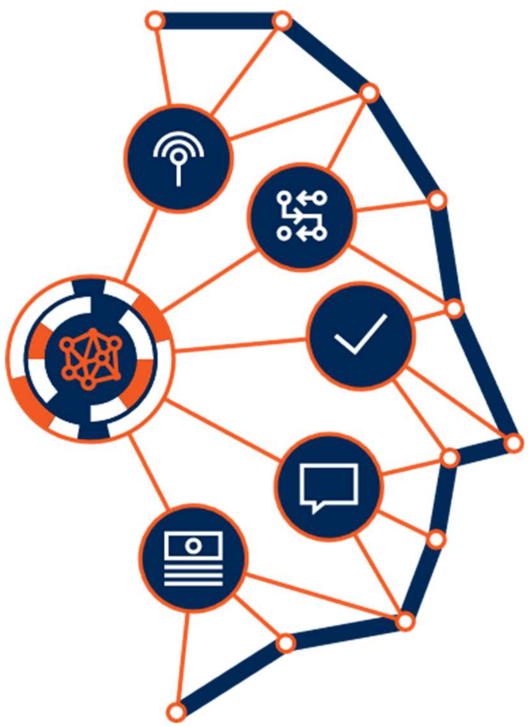
WHEN MACHINES BECOME CUSTOMERS



WHEN MACHINES BECOME CUSTOMERS

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For my wife Mona

Don Scheibenreif

For my mother Audrey

Mark Raskino

And for the late Gideon Gartner
from us both.

Contents

3rd Edition - Updated for Agentic AI

Technology continues to move at dizzying speeds. The first edition of this book was finalized in November 2022 – just before the seismic shockwave called ChatGPT. The second edition was published in September 2023 to capture the emerging impact of Generative AI. The creative explosion that accompanied its arrival is set to be significantly amplified by the developments in Agentic AI. Both are accelerating the advancement of machine customers even faster than we had imagined. Additionally, a book like this always sparks many questions and conversations with readers, from which more ideas and insights flow. In addition to new Gartner research on machine customers, we have had a lot of dialogue with Gartner clients, conference attendees and in forums like LinkedIn. As with our second edition, this new August 2025 third edition includes some of these important insights and additions to our thinking. Specifically:

- An expanded discussion of the Machine Customers Decision Path to help readers pick a strategy that is right for their organization (c. 6)
- Expanded discussion of how business functions like Sales, Marketing, and Customer Service will need to adapt in a world of Machine Customers (c. 6)
- The implications of Agentic AI on Machine Customer development (c.7)
- Expanded discussion on the AI techniques and other technologies needed to power Machine Customers (c. 7)
- Expanded discussion on Data Management, Identity, Security and Risk Management in an AI world (c.7)
- The introduction of Gartner's emerging research on Autonomous Business and its connection to Machine Customers (c.11)
- New Generative AI case examples of emerging Machine Customers (throughout)

Foreword

Many creative collaborations start with a simple question: "What if?" More than a decade ago, I was in a Gartner office in Stamford, Connecticut with analysts Jenny Sussin and Don Scheibenreif. Analysts are often solitary, working on research in their home offices and taking video calls with clients around the world. But this day, we were together; Jenny with her welcoming hug and Don with his million-dollar smile. As we were chatting about customer experience I said, "what if the customer is a machine?". That seed was planted firmly, and intentionally, into fertile ground.

Jenny went on to manage analysts covering customer service while Don took the idea of Machine Customers and let it blossom. His deep background in consumer marketing and digital business was the perfect proving ground. Eventually he began collaborating on the concept with Mark Raskino, a brilliant Gartner analyst always up for creating a grounded view of the future.

The first edition of this book was born a few years later and collected the best visions of a world where machines were becoming customers. Then the Generative AI boom began in November 2022. Well, that required a quick second edition to include perspective on GenAI, this eerily human-like capability that will play a larger and larger role in multiple user experiences. AI is quickly evolving to include agents which can autonomously tackle problems, assemble and optimize solutions, remember, learn, and reason. Agents will function as customers on their own, and as brokers for humans to help navigate the complexities of a fully digital world. And so this work from Don and Mark also evolves.

I am so fortunate to have been in the creative flow that day in Jenny's office. I know this book will lead you to your own "What Ifs?".

Chris Howard
Chief of Research, Gartner
June 2025, New Hartford Connecticut.

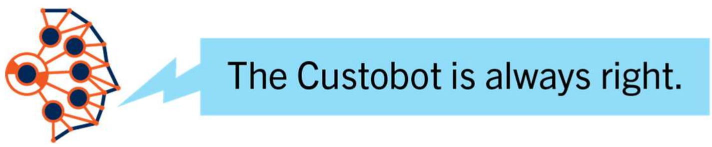
Preface

A business growth megatrend is quietly taking shape that we believe will be more significant than the arrival of digital commerce. For the first time in history, companies will be able to make their own customers - agents powered by artificial intelligence and other technologies that can shop on behalf of individual people, organizations and even for themselves. These new buyers – we call them "custobots" – will soon create mega markets. CEOs we have polled believe that, on average, 15 to 20% of their company's revenue will come from Machine Customers by 2030. Gartner modeling predicts Machine Customers will be directly involved in or have influence over many trillions of dollars in purchases, given the rapid advancements of Generative AI.
With *three* varieties of customers in play - consumers, businesses, and now machines – all types of enterprises will find new revenue opportunities. In many cases, the pie will get bigger. New markets will open that were otherwise closed. But capturing this growth will require new ways of managing customer relationships and new business models. Machine Customers will change how you operate and who you hire. Success will demand that you let go of many old practices and habits of thought. The underlying research for this book has evolved over most of a decade. When we compared what we do as human customers with the emerging capabilities of the Internet of Things (IoT) and intelligent systems (AI), it became obvious that machines can perform some customer 'work' as well as, or better than humans. We wrote this book for business leaders who must consider big trends that disrupt existing strategies or create significant growth opportunities - CEOs, strategy officers, technology officers (CIO, CDO, CTO), marketing officers, sales officers, and supply chain officers. Other professionals, academics, and students may also find value in it. Come with us as we challenge what it means to be in business when your customers are machines. How Machine Customers will make our lives better – mostly. How they will change business and operating models, open some doors and close others - as they transform marketing, sales, and virtually every company. Psychologists sometimes suggest that we don't have ideas; ideas have us. The Machine Customers concept is like that. Once it seized us, there was no going back. There's still time for you to close this book before your preconceptions about customers and markets are shattered. Turn the page and the idea virus will be in you too.

Don Scheibenreif and Mark Raskino

Chapter 3

The Custobots ARE Coming



The "why?" of a new business technology can be fuzzy at first - but a closer look at the underlying forces will make it clear

Machine Customers Will Often Be Better Than Human Customers

If you take a cool, dispassionate look at your business, you're likely to find that you should fire your worst customers[62]. The truth is that some customers just aren't very good at their job. They dither, they waste a lot of time, and they send stuff back. In B2C situations, their cost-to-serve may exceed their profit potential. In B2B situations, endless rounds of negotiation and contract clause discussions can inflate your working capital and tie your organization in knots. Smart businesses rank and yank their relationships so they can focus their energy on their most profitable or promising customers.

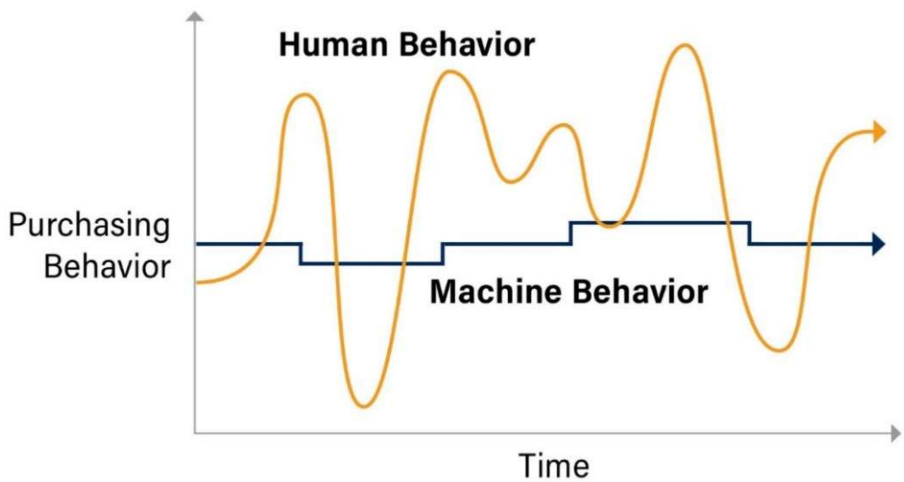
Over the next few years, as technology improves, smart machines will become more capable and effective at being customers than their human counterparts. Soon, smart companies will seek out more Machine Customers and may start dissuading or even firing some of their human customers.

Efficient, Logical, Scalable - All the Things You Aren't

How Machine Customers Will Unlock Hidden Growth

Human customers are often suboptimal. We miss appointments. We forget shopping lists. We don't know how to search and find what's good for us or best for us. Human time and attention are finite and fragmented. What we hope to do or intend to do gets derailed by something else. "I wish I remembered to order those flower bulbs for the garden – oh well, the planting season has passed – maybe next year."

Figure 2 - A Depiction of The Purchasing Behavior Difference of Machine Customers



As illustrated in Figure 2., machines have several characteristics that will make them better consumers than people:

Machines are observant, tireless, and exhaustive researchers.

Machines don't forget.

Machines apply logic and reason over subjectivity and emotion.

Machines are also often more cost-effective than people: they can run 24 hours a day and they are replicable. If we need more, we can make more, using mass production methods honed to perfection over the century since Henry Ford built his River Rouge plant. Soon, we won't be stuck with randomly variable customers – we'll be able to make consistent customers who will cost less to acquire and do a better job for us.

For example: Mark has a letter from his dentist reminding him that he is overdue for a check-up. It has been on his desk for a month. He is not a reliable customer of the dentist. *Quelle surprise*. What if he could just say, "Alexa - could you manage my dental for me?" In reply she might say "sure, Mark, who's your dentist?" and then, "OK - I found them - I can take that over for you." Sadly, that service does not exist yet. However, if you have any high-level appreciation of the tech world, you probably think it is not *that hard* to do and it cannot be very far away.

But hang on a minute – we just said that at least part of being a customer is "work". That can be a challenging notion. We like to focus on the idea of shopping as recreation. Historically, businesses had to seduce us into doing this work - marketers are forever promising that shopping will be easy, fun or fulfilling. Our over-rehearsed mind's eye turns quickly to a scene of spending our hard-earned money in a swanky shopping mall as a pleasurable activity. That may be true for some categories of purchase at some times, but it is not true for all purchases all the time. In fact, shopping-as-leisure is the exception – and not just when it comes to dental appointments. For example, Thilo Koslowski, former CEO at Porsche Digital, a wholly owned subsidiary of Porsche AG asks these questions about today's cars:

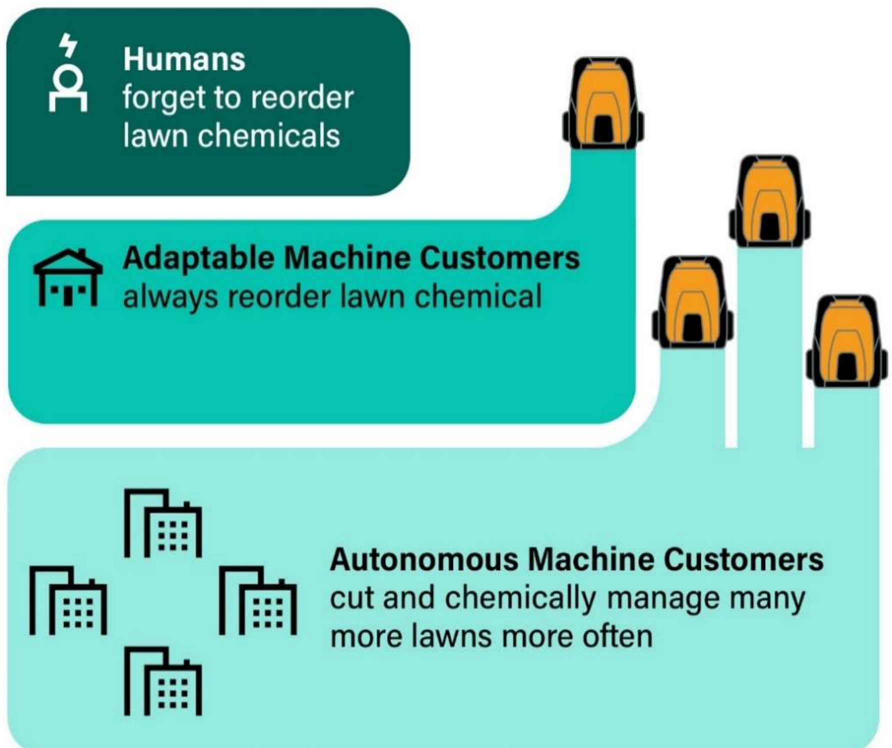
> *"Why do you have to slide your credit card into the gas pump? And take it out? Why doesn't the car communicate automatically with the pump and pay for the gas? And determine how much gas is exactly needed because the destination was entered in the nav system? The car should even seek the cheapest gas station based on its understanding of how much gas is needed to make it to the destination. Why is this not happening?"*

Like buying gas for the car, most shopping isn't fun at all. Think of all the things you buy that are not fun purchases: utility bills, insurance, bleach, potatoes. We might enjoy shopping for single malt whiskey, TVs, handbags, and fine fragrances; we do not enjoy shopping for car tires, toilet tissue, printer paper, and lightbulbs.

To be sure – this is subjective. Some people enjoy shopping for basic groceries when it gets them out of the house and away from three small screaming children. What about complex things like buying a home? A local property portal in Singapore called Mogul.sg developed an AI agent called Maia that can review more than 100,000 home listings on major housing sites so it can make educated recommendations for potential homebuyers. The AI agent can also discuss ideal viewing dates via WhatsApp, send a calendar invite, and if the viewing is successful, remind the seller's agent about the binding agreement and fees once the sale is completed.[63]

But for many people and businesses, being a customer is WORK, and a lot of it is pure drudgery. Just think about all the jobs to be done, like mowing the lawn, as illustrated in Figure 3.

Figure 3 - The Wider 'Jobs to Be Done' Coverage of Machine Customers



In recent decades, companies have often used technology not to automate customer service, but to offload it onto their customers. Self-service supermarket checkouts require you to scan your groceries, while self-booking travel sites make you hunt for your own flights, saving them money and saving you... what, exactly? Generally, either from doing something you are better at, or something you enjoy more or both. Still not convinced? Here is how we can be sure – rich people don't do it. They delegate shopping to their housekeeper, butler, or personal assistant. It is worth remembering that throughout business history, fortunes have been built by taking something that only a few rich people can have and finding a way to make it a mass market – from tea to quick service restaurants to low-cost aviation. We believe shopping is next.

The Machine Customers Are Already Being Dispatched to Your Location

How will your business acquire Machine Customers? To begin with, you may want to try unlocking your front door.

Have you ever encountered a website that required a 'Captcha' before letting you in deeper? Most of us have. We take a little test that asks us to click away on picture squares or decipher squiggly letters and declare, "I am not a robot". The Captcha technology website says:

> *A CAPTCHA is a program that protects websites against bots by generating and grading tests that humans can pass but current computer programs cannot.* [64]

There are lots of good reasons why a commercial website might want to protect itself against bots. For example, to protect the integrity of online polls, stop brute force attempts to crack passwords, or prevent competitors from copying today's prices. But here's a thought – what if some of the bots are customers you should *want*?

Screen scrapers predate the commercial internet, but when companies started showing themselves worldwide on the web in the 1990s, their use exploded. Today, one of the early things many new programmers are taught is how to extract data they want from a web page intended for human eyes – such as sports scores or stock prices. Libraries of well-refined code that can do this clever task well are freely available on GitHub and other open repositories. Using these tools, even an inexperienced coder can easily put together an app that interacts with a web page and "pretends" to be a human user.

Now think about this. Many people who have customer work they regularly need to do with businesses online can do some coding these days. But if your site administrators have decided to use Captcha, the code those customers write for themselves could be locked out. The chances are good that your website is *already* receiving visits from Machine Customers. In our research, we learned of a few forward-thinking organizations that are building their own bot frameworks to negotiate with incoming bot requests.

Of course, there are good reasons to block even well-intentioned screen-scrapers. It can be a technologically inefficient means of interaction. It can be insecure, and it can cause site reliability problems. It might be better if your company provided APIs that allowed programmers to access the functions they need in a formalized, registered, metered, orderly, secure, and professionally managed way. In fact, we may look back on screen-scrapers as the protozoa of the Machine Customer age - a crude animal from which more sophisticated fauna will evolve.

Indeed, we can already see that evolution happening in that rainforest of Machine Customer biodiversity called eBay. The vast virtual marketplace has so many small traders and amateurs buying and selling things that Machine Customer bots are already mutating and evolving. One long-time King of the Jungle is sniping software - a bot programmed to swoop in at the very last second of an auction. In 1999, esnipe.com first freed users from having to spend time watching the countdown clock, and today there are many competing solutions that do the same thing. Other companies might try to shut down the snipers, but not eBay. Indeed, it supports their evolution with APIs that allow programmers to create professional and high-quality Machine Customers.

Ebay's "Buy API" capabilities[65] help shopping bots perform research to make good buying decisions. For example, they enable programs to:

- Compare listing details, such as price, shipping, return policy, and others.
- Search for products using standard identifiers like UPC.
- Show product rating, reviews and seller feedback scores.
- View item images, sizes, colors, and other item specifics or variations.
- Retrieve relevant item and product recommendations to cross-sell and up-sell additional items on eBay for buyers.

The functions those APIs offer would be a good starting list for any company to consider when it decides to engage with the world of Machine Customers.

However, the early manifestations of online shopping bots have not always been seen as a positive development. Sometimes regulators have been called in to thwart them. This is most obvious in the case of sports and show ticket sales. Ticket bots have become such powerful tools in the hands of reselling intermediaries that laws were passed to curtail their use. For example, the US Better Online Ticket Sales (BOTS) act was signed into law by President Obama in 2016.[66] The problem was not that the bots didn't work, but that they worked too well, when set loose by scalpers. But even now, this technology is still available to individuals.

Next time you are trying get a ticket for a hot show or a big game, on the day they are released, try Googling for "Ticketmaster bot software". It may not be illegal, but *should* you use it? Is it fair? You will have to make your own decision, but the tech genie it is out of the bottle and its effects are extending into other industries. The athleisure shoe segment has been challenged by the arrival of 'sneakerbots' that attempt to swoop in and buy up limited edition inventory online. Nike has had to take steps to try and control sneakerbot-enabled buying[67] As the use of shopping bots expands, new solutions will be required to manage the way vendors release inventory for sale. For example, Queue.it offers software to *"deliver a fair online experience without crashes or bots"*.[68]

Digital Channels Will Evolve to Become Machine Customers

Have you ever thought about the shopping basket icon on a website? When ecommerce was invented in the middle 1990s, it was so conceptually revolutionary it needed to be explained by reference to physical retail concepts that users would immediately understand. That's often the way with technology revolutions. The icon for email is a paper envelope and the icon for saving a file is a floppy disk. We always frame tomorrow's technological possibility in today's familiarity and experience. So it will be with Machine Customers.

We have no doubt that the emergence of Machine Customers will be obscured in the blind spot from which they emerge – digital channels. For the past quarter-century, the pattern of tech-enabled market evolution has been electronic channel proliferation. Sales and marketing professionals discuss customer journeys that crisscross integrated multichannel or 'omnichannel' surfaces comprising web, mobile, email, IVR, kiosk, and others. Perhaps the most confusing of the transitions will be from voice-enabled or conversational commerce to the Machine Customer.

This transition is already happening with Amazon Alexa. First, you order online, and Alexa's notification light alerts you about deliveries. Then you start asking Alexa vocally to reorder stuff. Soon enough, Alexa pipes up with messages asking if you would like to set up a subscription, or she proposes items from your wish list that are on special offer. Recent advances in generative AI are likely to bring this all to life more quickly than we initially anticipated. For example, already, a ChatGPT feature has been created for Alexa~~.~~ called Alexa+.[69] ChatGPT can provide powerful shopping support such as suggesting lists of the best brands and models of an item, or providing a list of steps to follow in a particular negotiating situation.[70] We are seeing more and more digital commerce leaders like Walmart, Expedia (Romie Assistant), and Zalando announce or embed generative AI capabilities.[71] Walmart for example is anticipating the need for industry protocols that allow a variety of AI agents to transact with retailers.[72] This will significantly boost the quality of co-customer advice and support that virtual assistant Machine Customers can provide.

Before you know it, a rather smart virtual assistant will be in your life, chatting to you about what you should buy next. Already, Alexa and other chatbots are starting to be involved in product selection and prompting purchases. Maybe they aren't quite custobots yet, but it is as if the Machine Customer is emerging out of the digital channel soup like the liquid metal T-1000 Terminator character in the movie "Terminator 2: Judgment Day." So, are they a channel or a co-customer? It's too early to tell, but we are sure to find out soon.

As channel tech becomes smarter, it does more and more work helping and guiding the human. The evolution starts with little things like pre-filling forms. It moves on to curating and reducing choices to match personal tastes. From there, it goes on to make proactive suggestions. At some point, the tech is no longer a pipe. It is an intelligent co-customer. More and more of the decision-making is happening in the machine – less in the human. Eventually, we reach a tipping point.

It's not hard to envision that a dialogue that starts with "Alexa reorder dog food" eventually reaches a moment when the intelligent assistant asks, "Would you like me to take care of all the pet supplies your dog needs?" If you say yes, the next question is "what's the monthly budget I can use for that?". At that point, the machine has been designated as a customer on your behalf - just as if you had a human housekeeper. The machine can search for the best pet foods. Perhaps it will adjust amounts according to dog walking activity data from a Fitbit-like IoT collar and smart pet feeder (PetSafe's 'SmartFeed' already exists[73]) and listen to your dog's night-time breathing. When other pet owners discover new chew toys, the machine would order the occasional surprise – all within the budget.

Machine Customers will have a counterpart: The Machine Seller

As Machine Customers develop in their capabilities, so too will their vendor counterparts – a Machine Seller, or what we call a "sellerbot." If custobots are hired by human customers to represent their interest when interacting with third parties, think of sellerbots as machines that are built and managed by organizations to sell to and serve human customers (and eventually other custobots). In discussions with Gartner colleagues and clients, we had to account for organizations that want to use machines to sell to others – including Machine Customers. We'll discuss sellerbots more in Chapter 6.

The Forces Driving Machine Customers Are Huge and Inevitable

Growth is a need but not a given. Most businesses rely on the idea of growth as the central tenet of their existence. We seek growth; we set goals for growth. When growth isn't high enough, questions are asked. When growth reverses, it's a big problem. But it never just happens. We can't rely on it. We must cause it.

Economies And Societies Need Growth – It Is Who We Are

Throughout history, the scale of the economy has been somewhat proportional to the number of humans. It isn't a perfect and simple numerical relationship, of course. When birth rates go up and the population increases, it does not assure that GDP growth will immediately follow. However, it tends to create pressure for that to happen. Otherwise, resources must be spread more thinly. We can say that declining, and shrinking populations cause economic stress. Structurally that is true in countries like Japan and Italy today.

Why are we so sure Machine Customers are coming?

We need the growth.

Human population growth is forecast to come to an end later this century.[74] When that happens, where will our economic growth come from? We believe machines will become the additional customers we cannot be. They will help us improve our quality of life in ways that do not lead to the ecological damage of an expanding population. Their growth will make it possible to raise standards of living in a sustainable way, helping the elderly and cleaning up our legacy of environmental messes. By helping us find and buy what we really need when we need it, they will help us avoid excess, damaging overconsumption, and waste. But how do we know Machine Customers won't just cause us to consume more stuff? We don't. Initially, they may have both good and bad environmental effects (which we expand on a little in Chapter 11). However, we are optimistic that in the long run, they will help us live more sustainably. For one thing, society will want it that way. As IKEA's chief sustainability officer has said, we may have already reached "peak stuff".[75] We are saturated in fat and sugar to lifespan-shortening excess, head spun by endless attention-grabbing dopamine hits, driven round and round in too many cars, while wearing low-grade fast fashion that goes almost straight to landfill.

We think that in the end, most people want a *better* life, not a "more, more, more" chore bore life. And even if Machine Customers were programmed to keep convincing humans to consume more, we would soon reach planetary limits. Many natural scientists are reaching the conclusion that the earth has physical limits, and we are closer to reaching them, requiring a change of approach. If we humans are too irrational to make that shift alone, perhaps more logical Machine Customers could help us.

Machine Customers Are Part of The Next Giant Leap for Capitalism

Capitalism is adaptive. As Paul Mason observes in his book Postcapitalism[76], it always seeks and finds the next realm to monetize. It moved from land and food to credit cards and education. It surfs from technological wave to technological wave as Nikolai Kondratiev[77] first foresaw in the early 20th century.

The leap to Machine Customers will be a big part of the 21st-century digital technology golden age of economic progress and wealth creation that Carlotta Perez laid out in her landmark book Technological Innovations & Financial Capital.[78] The financialization and control of the Machine Customer economy will help sustain growth, enabling it to break through the barrier of human population stasis. We believe that by 2028 machine customers will be recognized and measured by economists as a factor that contributes to the growth-reliant model of a stable society. It might help us all live better lives, and it stands a chance of helping us control the dangerous aspects of excessive consumption that are poisoning our planet and may have started to reduce our lifespans.[79]

The Digital Giants Will Simply 'Make It So'

Amazon and the other big technology corporations think a long way ahead. They create the tools and lay the groundwork for the next big tech wave and the one after that. They know that Machine Customers will be a major battleground, and they have already staked the territory.

The Technologies Needed for A Machine Customer World Already Exist

As we wrote in a previous book Digital to the Core[80], in the end, "every industry will be digitally remastered." That means its products and services will be substantially reinvented by the direct inclusion of digital technology. Autonomous cars, robot lawnmowers and vape sticks are already tearing up the competitive strategy rule books of industries. Did you know that Apple Watch alone already outsells the entire Swiss watch industry?[81] If you are a Silicon Valley VC, that factoid is just 'so yawnsville'. It's yesterday's disruption. The question is where these IoT things will lead us. What's the *next* S curve to jump to?

Technology enables future business growth in waves. A technology yields new rapid growth and wealth creation itself for a while, and then eventually, that slows as markets saturate. But another wave follows, built upon the infrastructure of the last. PCs and modems begat the web. The web could only come to pass once everyone had a computer on their desk and an internet connection. The web begat social. We could not have Facebook, LinkedIn, and the rest until everyone was comfortable with "web surfing" (quaint, that old term – isn't it?). IoT technology grafted into many products will create a massive new infrastructure and what we will build next, on top of it, will be a Machine Customer economy.

The evolution of Machine Customers will also depend on AI-based pattern recognition. When someone holds their phone up in a bar using the app Shazam to listen to the music and recognize the song being played – that's pattern recognition of an audio waveform. When you speak to Alexa, Google Assistant, Siri, Tmall Genie, or Bixby, the waveform of your speech is recognized. Once the individual words are found and identified in your speech, another AI technology called natural language processing is used to make some sort of sense of it. What's the sentence structure? What are the clauses? What's the noun phrase, the verb phrase? Was it a statement or a question? And so on.

Image recognition is another massively valuable area of AI pattern recognition advancement. Most people these days take it for granted that police, city authorities, and even your local gas station use ALPR (automatic license plate recognition technology), but of course, it goes far beyond that. Tesla cars can recognize people, bicycles, road markings, streetlights, and many other features, in real-time, by analyzing the images taken from onboard video cameras.[82]

These incredible technologies were on the whiteboards of scientists and the keyboards of sci-fi authors for decades. Now they are here. Alexa can "hear". A Tesla can "see." Moderately smart, if not actually intelligent, machines have arrived, and with these capabilities, they can take on the work of customers. They can hear what you want, use search to find versions, compare and choose and then perhaps see by observation whether a chosen product really worked out. Did you like it? Perhaps all they will need to do is watch your face when you open the package to see if you smile. It's not hard; there's an API for that.[83]

But machines are not going to pull up to the checkout at a store in your local shopping mall anytime soon and sigh when they must join the line. So "where" will Machine Customers do their shopping? Online, of course. It is the cloud and the amazing commerce platforms it has enabled that have already created the massively capable virtual market space in which the Machine Customers will operate.

Digital commerce in all its forms – web, mobile, social, video, chat, and all the rest have, in the space of just twenty years or so, created colossal marketspaces of a scale and complexity that no twentieth century business thinker could previously have imagined. Amazon, Alibaba, eBay, Craigslist, Etsy, JD.com, Shopify, Mercado Libre, Jumia, and others operate huge platforms and clearing houses that match buyers with sellers. They provide product and price data to allow comparison shopping on more features and data points than ever before. You could spend a lifetime doing nothing but shopping in these endless virtual malls and barely scratch the surface. But we believe increasingly you will not wish to visit them at all because they will become too complex for humans to understand.

Cloud-based platform technologies are key to the rise of Machine Customers, and as they become more complex, the human customer will become overwhelmed by choice and confusion. What keywords should I use? Which filters after that? How should I organize the search results. Can I trust those reviews? Why can't I ask it to compare based on battery life instead of on price?

Do any of those issues seem familiar to you? Perhaps they even feel like work? It seems *inevitable* to us that Machine Customers will reach into these deep and complex markets on our behalf. They will do that for us via APIs, and the digital giant companies know this because they are already providing those computer interfaces.

Amazon Dash Replenishment Services have existed for several years, though you may not have heard of them. They are the developer APIs behind the more well-known but unsuccessful and withdrawn 'amazon dash button' gadget. As the developer site says:

> *"Dash Replenishment Service" offers zero-click reorders for products linked to your device. The easy-to-use APIs allow you to integrate with Amazon ordering and fulfillment so that your customers never run out of products they need."*[84]

Let's examine that clause by clause. *An API to enable online replenishment of products*… means buying stuff. *Linked to your device*... that means connected products like washing machines. *With zero-click ordering*... means no human finger clicks on the mouse button. At this point, the machine is no longer just a channel- it's a customer.

Amazon, Tencent, Alibaba, and all the other digital giants are taking the lead in building the Machine Customer ecosystem, but they won't be able to do everything. Business history is full of corporations whose power and overreach as conglomerates eventually led to sloth, malaise, and collapse. We believe many other companies will copy the tech capabilities of the digital giants, marry those with their conventional strengths and become what we call "digicorps". In fact, it's already happening: Walmart now has sufficient tech capability to sell it to other retailers via Walmart.io. And Volkswagen is building a 10,000-person digital expert workforce to go head-to-head with Tesla in the battle for the electro-digital autonomous services-model future of the car industry.[85] A quarter of the employees at Goldman Sachs are in software engineering [86]. At some point in the future, we believe the major corporations left standing will become as tech-capable as the digital giants, even as those digital giants invade and take over more "traditional" competencies – such as mass manufacturing of cars. We have called that future point of market evolutionary balance *techqulibrium*.[87]

Thilo Koslowski describes the relationship between the digital giants and the auto industry this way:

> *"I believe many of the traditional automotive companies are somewhat stuck, unfortunately, trying to understand how that Machine Customer benefits their brand, their operations, but they are missing the bigger picture. The challenge is that the big technology leaders, like Amazon and Google, basically tell automotive companies to accept their offerings in one specific way without understanding the needs necessarily, of these automotive companies. They basically tell automotive companies: hey, if you want to have our CarPlay functionality in your car, this is how you have to do it, and this is how it's going to look. There's no way for you to customize or differentiate. But it is exactly this differentiation that is critical to an automaker's success."*[88]

The Machine Customer future, despite being so highly digital, does not automatically 'belong' to the digital giants and dragons. Others could have pivotal roles to play if they seize their strategic opportunities quickly enough.

Currently, less digital, more conventional corporations must understand that the digital giants will open the Machine Customer world up in a big way for one key reason: *because they can.* It is important to appreciate how core it is to their purpose and culture to explore all the strategic possibilities that digital technology advances open up. They dare not leave a stone unturned for fear that one of their direct competitors will find a big advantage there. For example, in 2023 many of the tech giants rushed into a frenzy of adding large language model generative AI to their services - a move that is greatly advancing machine customer capabilities. In 2025, that same group is rushing to build Agentic AI into their products.

- Microsoft added generative AI buyer support features to Bing[89]
- Google added generative AI into its online shopping features[90]
- Shopify created a generative AI powered custobot app called Shop.AI[91]
- Mercari launched Merchat, a ChatGPT powered AI shopping assistant[92]
- OpenTable used a ChatGPT plug-in to create a Custobot that can help plan a dinner[93].
- Expedia added a ChatGPT plugin to create a Custobot that can help plan a holiday[94].
- In Singapore, Lazada created a ChatGPT powered shopping assistant called LazzieChat[95]

The pace of competition amongst the digital giants quite often reduces fat margin opportunities to thin commodity plays within a few short years. As they find and perfect the best platform-based revenue models, they all pile into the same play.

One of the biggest plays that are becoming exhausted is the advertising revenue model. Once Google 'owned' it, then Facebook, now Amazon is muscling in.

Under such conditions, digital giants will explore any other business model possibility for monetizing technology enabled customer engagement. With Machine Customers, the prospect of a direct or indirect transaction fee offers potentially massive growth opportunity that action will be too juicy to ignore.

Control It, Before It Controls You

So big companies must move in to take their part of the Machine Customer ecosystem land grab. Companies' boards of directors must empower and fund their strategists to mark out and seize key territories. Machine Customers will be enabled by platforms of functionality and trust making. Many of the machines that become customers will be intelligently enabled for future versions of today's mass-market products. These are the future opportunity spaces that large corporations leave open and exposed at their peril. After seeing Blackberry, Kodak, Nokia, Sears, and others fall to the forces of dithering and inertia, they have few illusions that the future will stand still for them.

Most middle-sized companies won't have the market clout, risk appetite, or capital backing to create the platforms of tomorrow. Instead, they will need to get involved early so they can learn how to participate and compete in Machine Customer markets. If you make and sell, say, organic breakfast cereals, you will need to understand how machine minds will evaluate your product. This will be a complex and circuitous art in which the seller must communicate a product's value in a way the customer algorithm understands, which may not be the same as human customer influencing. Perhaps it will involve more about definitions and specifications and less about logos and images.

Start-ups will need to look for gaps to fill in the emerging Machine Customer landscapes. There will be many hundreds of these in such a complex unfolding space. How will the Machine Customer sense, connect, and move? How will it interact with humans? It's easy to see how a kitchen coffee maker becomes a smart Machine Customer, but what about a vase? Not typically an electrical product today, but could it become powered? Perhaps the vase could detect both the age of the flowers it contains and what kind of flowers it should order next based on mood, occasion, or room decor. Who will provide the smart modules that manufacturers incorporate? Is there a role for a retrofit adapter? The digital giants will bring about a custobot world, but they can't control it all. Machine

Customer evolution and innovation will be a dynamic and volatile business journey of many twists and turns. There will be ample room for small, medium, and large players to win big. But only if they are insightful, creative, and quick.

Conclusion

From using fire to cook meat to reduce chewing time to the invention of the dishwasher, we have always used technology to make our lives easier. We do it because it frees us to move on to more valuable tasks. The technology that allows us to create Machine Customers is now reaching key tipping points. The digital giants will lead their inevitable development, but they won't be able to control the entire market.

Key Takeaways

Business strategists must see this trend as a certainty.
The only real question is timing and the nature and degree of progressive impact at the industry level. In long-range planning, assume this will happen.

Action: Ask yourself what kinds of objects do customers use in the context of your products and services today? These could be very mundane if they occupy a useful demand-detecting position. Could those become Machine Customers? For example, Amazon thinks something as previously inert as a shelf could play a customer role.[96] Choose three time-horizons and assign each a probability.

Machine Customers will often be better.
Being smarter, Machine Customers will often be better at buying what's necessary.

Action: Ask yourself, what is the current level of wasted buying opportunity in your industry today, simply because humans are not very attentive or engaged in the key buying stages? How big might the opportunity be if machines acted as delegated customers on their behalf? Which Machine Customer information gathering, and decision-making stages would be the pivotal control points of these future larger markets?

The digital giants will build the first generation of custobot infrastructure.
Other very large, newly tech-transformed traditional corporations that we call digicorps will be involved. Market makers make markets – for others to participate in and profit from.

Action: Engage your competitive intelligence team to scan for examples of where the digital giants are enabling Machine Customers and serving them.