Introduction From The President

Organisational and Brand Values and Artificial Intelligence (AI) and Machine Learning.

What will happen to the customer's experience as technology pushes further into the organisational – customer interface? As the capability of "what" technology can do for you increases who is making the decisions on the "how" it does it?

I na recent newsletter from Integro Learning in Johannesburg, one of the world's leading specialists on team behaviour and performance, it argues that "*Culture is a closed system, a feel-good tool, a set of behavioural blinders; it makes a corporation comfortable with its habits. It venerates tradition and worship habit: the way we do things around here. That does not hold anymore in today's changing landscape. The genetic code however carries the DNA of a team created in its identity irrespective of changing circumstances. Genetic coding imprints notions of identity and values as culture does, but in a sense of forward-looking. A sense that everything done today is dealing with what gets presented in the moment as an investment in the future, not an expression of the past."*

There are a number of interesting assumptions in that statement. One of the most important is that culture when properly led and managed does not do that already. In shorthand terms culture can be the sum and priority of the values that the leaders of the organisations choose to drive the way the organisation behaves commercially, and socially. From each of the values that are the foundations of organisational culture there always arise a number of expectations that that are the rationale for promulgating each of the values. Continuous monitoring of the degree to which those expectations are being met by every part of the organisation and tuning each accordingly keeps the culture of the organisation sensitive to the environment in which it operates and able to optimise its aims in the most effective way .

A more interesting observation is the use of the expression "Genetic Coding" which implies that people in an organisation can be "programmed" in such a way as to be more flexibly responsive to whatever challenges they encounter. In the past that may well have been referred to "skill development" but it is interesting that the idea that there is an organisational DNA which can be selectively reprogrammed to resolve performance issues has entered the lexicon of organisational management speak.
 Does it mean that the development of artificial intelligence and real (human) intelligence can be perceived as the same thing and approached in the same way? If so could human learning and machine learning employ similar processes so that human performance automatically updates its performance parameters and is that[1] what genetic coding is trying to achieve?

CURRENT CAPABILITIES OF ARTIFICIAL INTELLIGENCE (AI)

There are many conflicting definitions of artificial intelligence (AI), ranging from futuristic visions of human-like machine intelligence to more restrained definitions that refer to the ability of machines to self-program based on new data. Today, AI commonly refers to systems that employ machine learning and can:

- Collect and process signals via sensors or other methods;
- Classify, learn, reason, and predict possible outcomes; and
- Interact with people or other machines.

While there are plenty of experiments and early examples of AI, the majority today cluster around three specific types of intelligence: Visual/Spatial, Auditory/Linguistic and Motor Intelligence.

TYPES OF MACHINE INTELLIGENCE

**SENSING**

VISUAL/SPATIAL
The ability to see and process the physical and digital world. Examples include computer vision/image recognition, facial recognition and emotion detection.*

MOTOR
The ability to move around and manipulate physical or virtual environments, or communicate using gestures. Examples include robots and gestural or adaptive interfaces.

AUDITORY/LINGUISTIC
The ability to listen selectively and communicate using written or spoken language. Examples include virtual personal assistants such as Alexa, Siri , Viv, Cortana, Natural Language Processing (NLP), machine translation and chatbots.
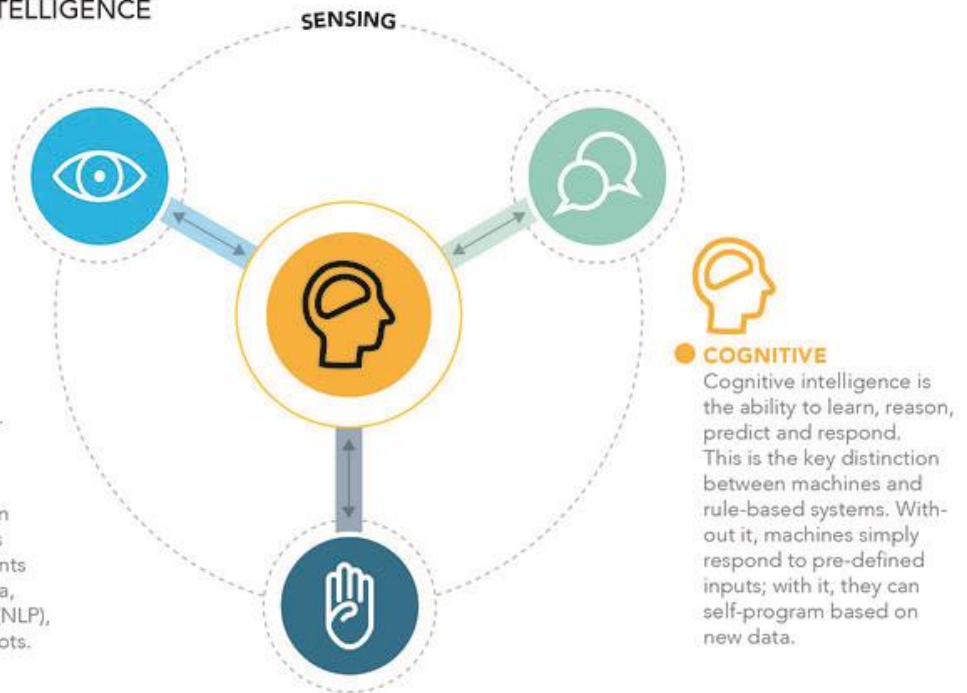
COGNITIVE
Cognitive intelligence is the ability to learn, reason, predict and respond. This is the key distinction between machines and rule-based systems. Without it, machines simply respond to pre-defined inputs; with it, they can self-program based on new data.

EXAMPLES OF AI

IMAGE RECOGNITION
See and classify images based on objects, scenes, attributes and emotion.

CHATBOTS
Communicate with users and answer questions via speech or written text.

MEDICAL DIAGNOSTICS
Analyze patient data, tests, and scans to help diagnose disease and recommend treatment.

SELF-DRIVING CARS
Combine data and analytics with reasoning to navigate and adapt to real world environments.

*For a more detailed view of computer vision and its business applications, see Susan Etlinger, Altimeter Group, "Image Intelligence: Making Visual Content Predictive".

So What is AI Offering in the World of Customer Experience Management?

AI is not new but its offerings in the customer experience environment are becoming wider and more sophisticated. A search among the gurus of the cloud reveals that AI has many propositions ready. But first the basics with 10 examples from techtarget.com

1. Chatbots
One of the most common uses of AI in customer service is chatbots. Businesses already use chatbots of varying complexity to handle routine questions such as delivery dates, balance owed, order status or anything else derived from internal systems. By transitioning these frequently asked questions to a chatbot, the customer service team can help more people and create a better experience overall -- while cutting operational costs for the company.
2. Agent assist
In many modern omnichannel contact centers, agent assist technology uses AI to automatically interpret what the customer is asking, search knowledge articles and display them on the customer service agent's screen while they're on the call. The process can save time for the agent and the customer, and it can decrease average handle time, which also reduces cost.
3. Self-service
Customer self-service refers to customers being able to identify and find the support they need without relying on a customer service agent. Most customers, when given the option, would prefer to solve issues on their own if given the proper tools and information. As AI becomes more advanced, self-service functions will become increasingly pervasive and allow customers the opportunity to solve concerns on their schedules.
*4. Robotic process automation*
Robotic process automation (RPA) can automate many simple tasks that an agent used to perform. Automating bots to focus on updating records, managing incidents or providing proactive outreach to customers, for example, can drastically reduce costs and improve efficiency and processing time. One of the best ways to determine where RPA can assist in customer service is by asking the customer service agents. They can likely identify the processes that take the longest or have the most clicks between systems. Or they may suggest simple, repetitive transactions that don't require a human. When prioritized and deployed correctly, this type of business process improvement can save customer service companies millions of dollars each year.
5. Machine learning
At its core, machine learning is key to processing and analyzing large data streams and determining what actionable insights there are. In customer service, machine learning can support agents with predictive analytics to identify common questions and responses. The technology can even catch things an agent may have missed in the communication. Additionally, machine learning can be used to help chatbots and other AI tools adapt to a given situation based on prior results and ultimately help customers solve problems through self-service.

6. Natural language processing

AI can use natural language processing to analyze customer feedback and provide insights for an organization. Many customer service teams use natural language processing today in their customer experience or voice of the customer programs. By having the system transcribe interactions across phone, email, chat and SMS channels and then analyze the data for certain trends and themes, an agent can meet the customer's needs more quickly. Previously, analyzing customer interactions was a lengthy process that often involved multiple teams and resources. Now, natural language processing eliminates these redundancies to create deeper and more efficient customer satisfaction.
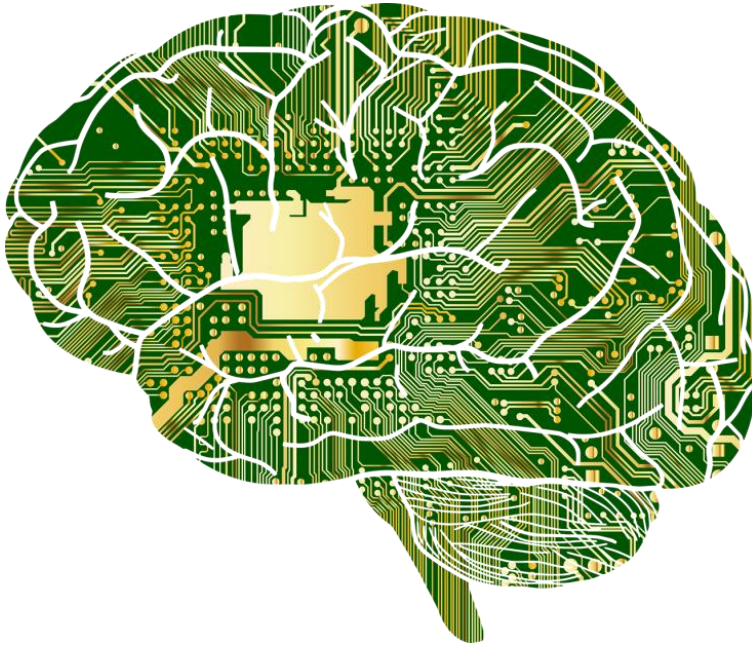
7. IVR automation

While Interactive Voice Response (IVR) systems have been automating simple routing and transactions for decades, new, conversational IVR systems use AI to handle tasks. Everything from verifying users with voice biometrics to directly telling the IVR system what needs to happen with the help of natural language processing is simplifying the customer experience. Some companies turn to visual IVR systems via mobile applications to streamline organized menus and routine transactions. Blending many of these AI types together creates a harmony of intelligent automation. In customer service, machine learning can support agents with predictive analytics to identify common questions and responses and even catch things an agent may have missed in the communication.

8. Sentiment and advanced analytics

Using sentiment analysis to analyze and identify how a customer feels is becoming commonplace in today's customer service teams. Some tools can even recognize when a customer is upset and notify a team leader or representative to interject and de-escalate the situation. In conjunction with a voice of the customer tool, sentiment analysis can create a more honest and full picture of customer satisfaction. Vendors such as Brandwatch, Hootsuite, Lexalytics, NetBase, Sprout Social, Sysomos and Zoho offer sentiment analysis platforms that proactively review customer feedback.

9. AI training
As the COVID-19 pandemic forced employees into remote positions, many training teams began using AI to construct simulations to test employee aptitude for handling various situations. Previously, the training involved a blend of classroom training, self-paced learning and a final assessment -- a routine that's much harder to implement in remote or hybrid offices. With AI taking the role of the customer, new agents can test out dozens of possible scenarios and practice their responses with natural counterparts to ensure that they're ready to support any issue a user or customer may have.

10. Smart speakers
The practical applications for organizations and customer service teams are still a work in progress, but smart assistants such as Alexa, Google Assistant and Siri are an exciting avenue for personalized service. Customers appreciate and prefer when an organization communicates via their preferred platform, and for some people, that may be via their smart home device. Imagine a future where a user can bypass a phone call or email and troubleshoot any product or service concern via a simple question to their smart speaker. Simplified communications like this could be the difference between a satisfied or frustrated customer.

https://www.techtarget.com/.../feature/10-examples-of-AI-in-customer-service
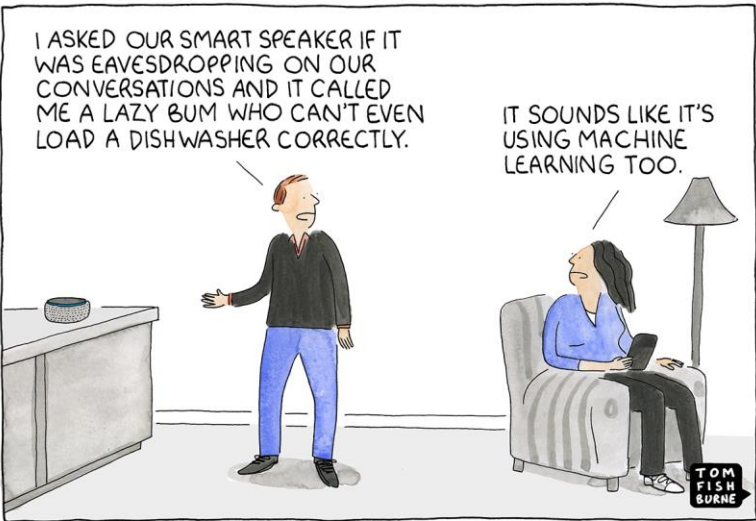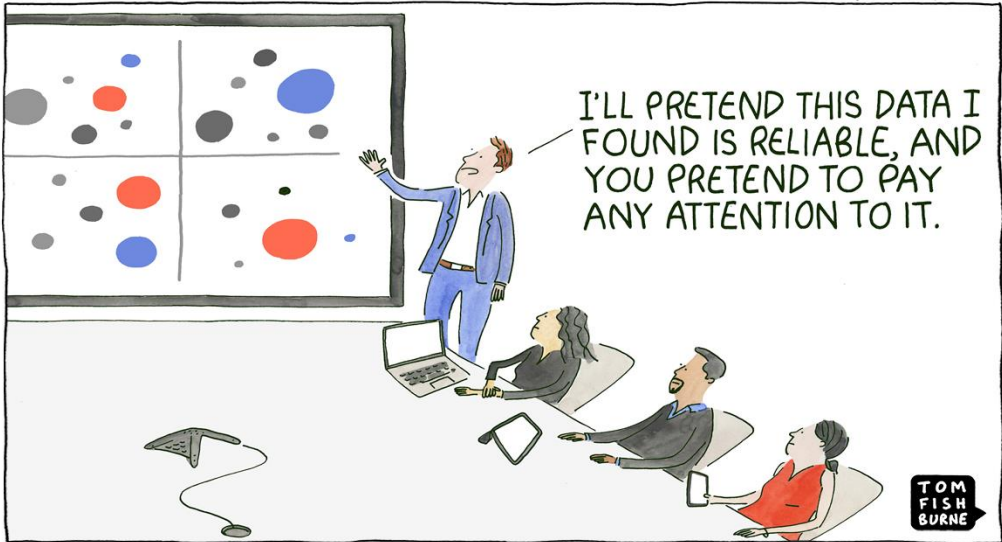
How are these being used?
One article from Forbes Business Council proposes that there are fifteen ways in which AI is helping to improve the service quality of the council members.

1.   Solving Users' Most Frequent Questions
We have extensively used AI chatbots for ourselves and our clients to solve the most frequently asked questions raised by users. By solving over 50% of recurring questions from the outset, we are able to significantly improve the user experience while simultaneously cutting costs for the organization. - Nate Nead, DEV.co
2. Learning Customer Behavior Patterns
Build intelligent customized experiences. AI can be used to learn patterns of customer behavior (like purchasing cycles on a credit card, retail spending or travel) and then to forecast behavior accordingly. When the customer then contacts the organization, these patterns can be used to intelligently offer the most likely service options or information based on the time and date of previous activities. - Janine Bensouda, Bensouda Consulting

3. Speeding Up Response Times
As an AI company as well, we see a lot of value in the customer service use case. I'm an advisor to a SaaS company that leverages AI to speed up the response time of customer support agents. They use AI to clearly identify the need of the customer and display the right information to the agents, thus bringing best-in-class customer service. Forethought in SF is also great. - Gaspard de Lacroix, Skypher
4. Utilizing Natural Language Understanding
Organizations can leverage AI by utilizing natural language understanding (NLU). By using real-time analysis of customer service calls, chats and emails, they can understand the conversation between the customer service representative and the customer. AI can offer ways to improve the customer experience via understanding the customer's level of frustration, the need for escalation and quicker resolution of problems. - Oded Agam, NextLeap Ventures
5. Anticipating Trends, Sentiment, Events
The massive volumes of public data produced globally each second allow for AI-enabled predictive anticipation of trends, sentiment and key events of interest. This unlocks powerful new possibilities to anticipate and address issues in various markets while proactively mitigating malicious digital threats to your business, brand or customers—a critical but often underemphasized element of CX. - Alejandro Romero, Constella Intelligence

6. *Enhancing Human Interaction*

The best utilization of AI is not to replace human interaction, but to enhance human interaction and decrease the friction in the customer experience. As an example, if there are tech questions such as resetting passwords that can be directed through AI responses, that is a great use of the resource. However, businesses need to be careful to not underwhelm the customer by removing the human touch. - Veena Jetti, Vive Funds

7. *Measuring Customer Wait Times*

AI can now let you measure customer wait times. This is particularly important in the service industry, restaurants for example, where time in line (or drive-thru) has a huge revenue impact. Historically, poor service has been difficult to track scalably. With computer vision AI, you can collect actionable insights on each interaction and use that transparency to perfect your customer service. - Alex Popper, Hellometer

8. *Capturing Large Amounts Of Data*

Organizations must be specific about who AI "serves." In healthcare, human interaction is critical to providing patient care, while AI is best suited to serve physicians. For example, a common complaint is the amount of data required to meet quality metrics and risk coding. AI can capture data with its mining and recognition capabilities from workflows allowing physicians more time for patient care. - Vijay Murugappan, First Quadrant Advisory

9. *Suggesting Actions For Agents*

Agents can be more effective in customer interactions with the help of AI. A tech firm built a recommendation system using ticket and remediation history, interactions, etc., that proactively suggests the next actions for agents. With this solution that had a data lake for different types of data, multiple NLP pipelines and a business graph, NPS ratings improved and time to resolution reduced. - Pritam Kanti Paul, BRIDGEi2i Analytics Solutions

10. *Embracing Speech Analytics*

One of the most interesting paths to leveraging AI in customer service is speech analytics. It's a very hot space with major cloud players (Microsoft, AWS, Google) investing. Speech analytics gives management insight into which calls are more effective, which CSRs are the best and what training and operational changes can make customer service more successful. - Sandeep Bhargava, Provana

11. *Enhancing Customization Options*

Use AI to apply personalization in communications. Organizations can implement AI-generated content into communication with clients. Would you like to receive assistance from support with the voice of Homer Simpson? AI can manage it in a second. It can be a winning strategy for businesses competing in a creative niche. One more example is to personalize shopping by using customers' features, likeness or preferences. - Dima Shvets, Reface

12. *Messaging Customers On Time*

Our customer engagement platform is built on a proprietary AI engine we call Sherpa. This engine uses behavioral data from the customer to automatically determine the right message variant and the right time to send it to the customer, as well as the best channel. It observes how different customer messages perform, and then suggests to brand marketers which one to send to customers in real-time. - Raviteja Dodda, MoEngage

13. *Identifying Root Causes Of Problems*

AI-produced insights can help companies determine root causes of problems, which can help with decision making and taking concrete actions like customer attrition. AI can also help you lean into your customers' emotional and cognitive responses in real-time to better enable measurement programs. - Sindhu Kutty, Kuroshio Consulting

14. *Integrating With CRM Systems*

Artificial Intelligence can be integrated with CRM systems to seamlessly automate tasks, saving priceless minutes of each customer support interaction. Paired with chatbots and speech-to-text capabilities, AI enables search functionality that guides agents to the information needed to resolve customer queries, improving the customer experience and first contact resolution for voice interactions. - Ashish Sukhadeve, Analytics Insight

15. *Managing A High Volume Of Queries*

Many organizations find that bots can be an effective way to manage a high volume of customer inquiries. While it can take time to set these up effectively, test and learn accuracy, I recommend embarking on the process if you're finding your team is bogged down and behind in responding to inquiries. The effective use of bots can also result in significant cost savings over time. - Muraly Srinarayanathas, Computek College

https://www.forbes.com/.../22/15-ways-to-leverage-ai-in-customer-service

One of the key observations from this is in example eight in which Vijay Murugappan, First Quadrant Advisory states *Organizations must be specific about who AI "serves*." It appears that many organisations may approach AI from the cost saving perspective with.out giving proper consideration to the impact it may have on their customers' experiences

Machine Learning - a very broad subject active in many area of technology

ICON SET FOR MACHINE LEARNING

MACHINE LEARNING	MACHINE	PROBLEM SOLVING	SENSOR	ALGORITHM
DASHBOARD	EMBEDDED DEVICES	PATTERN	ARCHITECTURE	BIG DATA
ARTIFICIAL INTELLIGENCE	DECISION	ANALYSIS	3D MODEL	SCORING
NETWORK	EMOTIONS	PERFORMANCE	INTERACTION	PRIORITY
COMPUTER SCIENCE	LEARNING	STATISTICS	DATA MINING	DECISION TREE
COMPLEXITY	ROBOT	SEARCH ENGINE	MODEL	EVOLUTION
OPTIMIZATION	FRAMEWORK	AUGMENTED REALITY	BEHAVIOR	CREATIVITY
PROGRAMMING	DEVICE	WEARABLE	VIRTUAL REALITY	DNA SEQUENCING
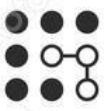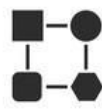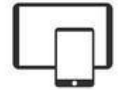
Machine Learning

The above graphic shows the many areas where machine learning is employed. To the layman it seems a strange, perhaps threatening world with the potential for machines will take over the world. Excellent sources to better understand its potential are

1. https://wordstream-files-prod.s3.amazonaws.com/s3fs-public/machine-learning.

2. https://towardsdatascience.com/machine-learning-algorithms-in-laymans-terms-part-1-d0368d769a7b
3. https://www.splunk.com/pdfs/ebooks/5-big-myths-of-ai-and-machine-learning-debunked.pdf
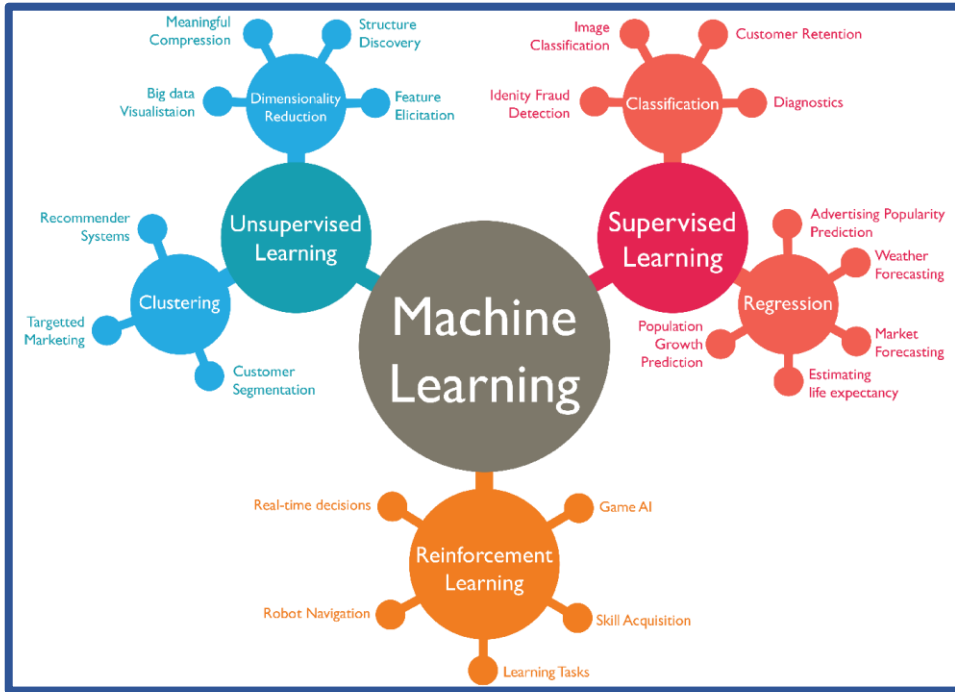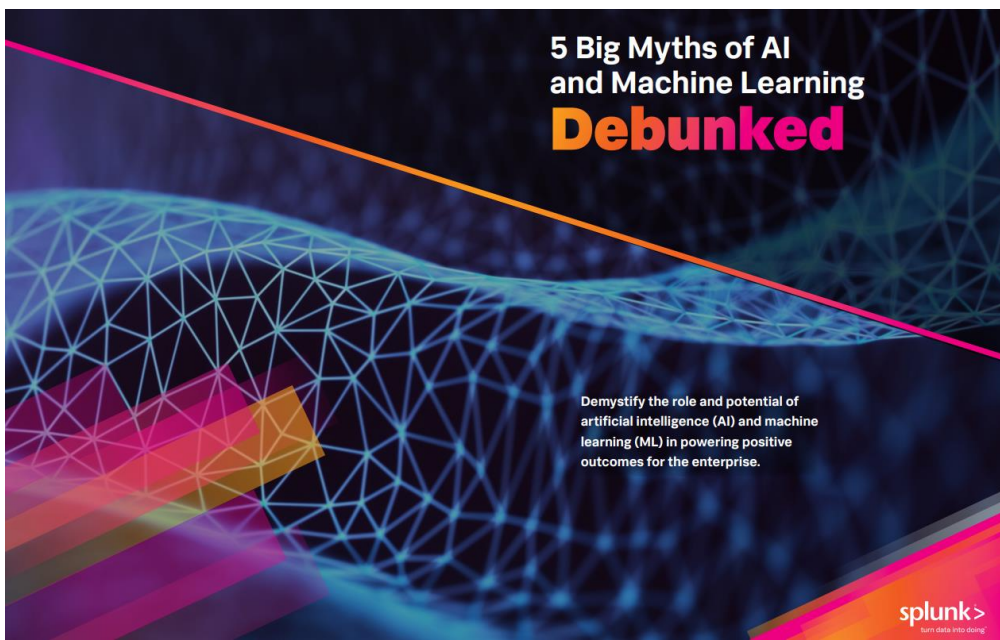
So What Do Customers Feel About AI?
I global study by PEGA.COM reveals some interesting insights into the way customers view their interface with organisations use AI to deliver some or all of the touchpoints in the customer journey.

The Pega Study Introduction

Several decades after it first arrived on the scene, artificial intelligence (AI) is enjoying yet another rebirth. The latest waves of rapid innovation are capturing the world's imagination for how AI can transform the way we work and live. This time, it's not relegated to research labs and the back office. Businesses are taking AI out of the box and exposing it to their customers – whose expectations for better brand experiences are rising as Siri, Alexa, and the like, become more ubiquitous.
But while the AI-hype machine marches on, few organizations understand what consumers – the ones experiencing their service bots, recommendation engines, and virtual assistants – think about this new way to engage. These insights can have a profound impact on how and where businesses use AI in any customer engagement scenario

How comfortable are you/would you be with a business using Artificial Intelligence to interact with you?

35% Comfortable

28% Uncomfortable

37% Neither
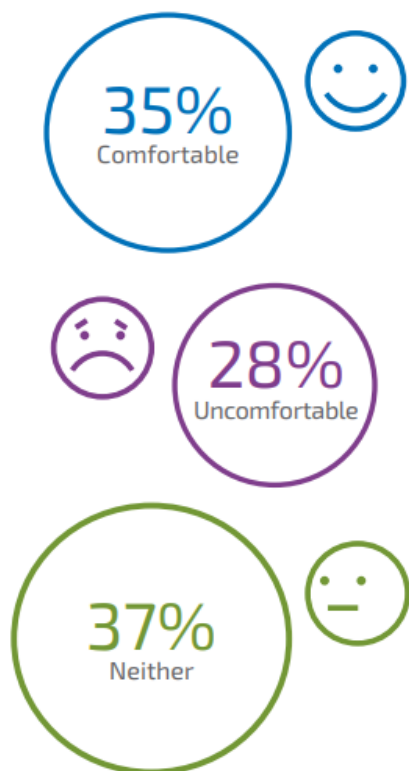
Do you understand what Artificial Intelligence is?

72% Yes

17% No

11% Not sure

Fear of the unknown

This immediately should raise some warning signs for businesses. A knowledge gap like this can easily shape how consumers perceive AI…and not in a good way. Combined with media stories and pop culture predicting the rise of the machines, fear can easily fill in the gaps where real knowledge is lacking. Our survey finds that more than 70 percent of consumers harbor some sort of fear of Artificial Intelligence. And yes, a quarter of them even worry about machines taking over the world. This is a basic mistrust that businesses must face head on and overcome. This takes time and a well thought out strategy to introduce the benefits of AI and gradually increase consumers' comfort levels.

Which of the following scares you most about the use of AI in society?

33% "Its never going to know me and my preferences as well as a human being"

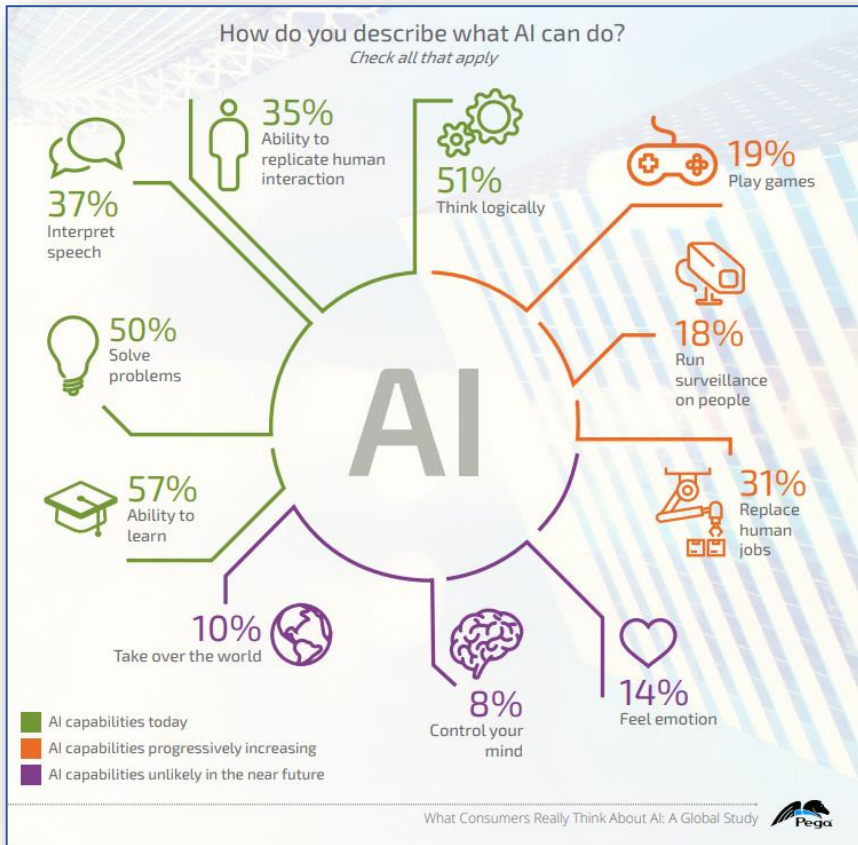**24%** "The rise of the robots and enslavement of humanity"

10% "Finding that I get on better with AI than I do with my friends and family"

5% "Robots uncovering my deepest secrets"

28% "None of the above/nothing"

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How do you describe what AI can do?
Check all that apply

37% Interpret speech

35% Ability to replicate human interaction

51% Think logically

19% Play games

50% Solve problems

18% Run surveillance on people

57% Ability to learn

31% Replace human jobs

10% Take over the world

8% Control your mind

14% Feel emotion

- ■ AI capabilities today
- ■ AI capabilities progressively increasing
- ■ AI capabilities unlikely in the near future

Have you ever interacted with Artificial Intelligence technology?

34% yes

34% no

32% not sure

Percentage of consumers who use AI based on the devices/services they said they actually use

84%

*See right hand chart for usage cases
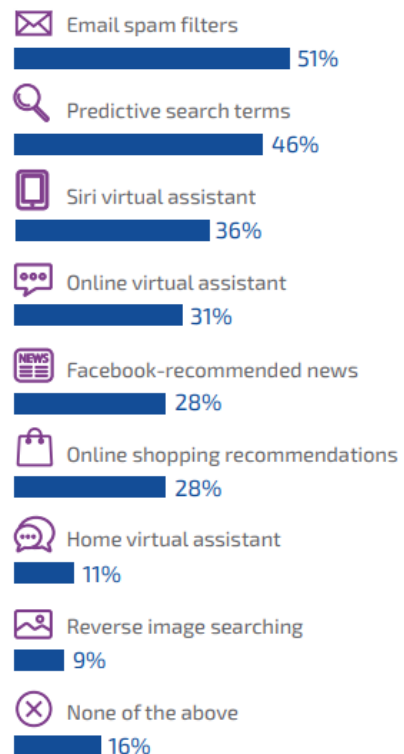

Surprise! You already use AI

However, these consumer fears may be misguided. That's because the majority of respondents are already using AI-powered devices and services today – they just don't know it.

Only 34 percent of respondents think they have interacted with some sort of AI technology in the recent past. But when asked about the technologies they use in their daily lives, it reveals a much different story. The survey found that 84 percent had recently used at least one AI-powered service or device – such as virtual home assistants, intelligent chat bots, or predictive product suggestions. That's a knowledge gap of 50 points. If you've used Google or even spam filters, you've perhaps unknowingly experienced the benefit of AI in some form.

Misidentifying the level of AI in some of these technologies is understandable, but some misses were more surprising than others. Only 41 percent knew AI was present in Google Home or Amazon Alexa – which are marketed as bringing intelligent assistants into the home. More consumers recognized AI's presence in Apple's Siri (57 percent), perhaps because it's older and more ubiquitous.

Which of the following technologies have you used or encountered in the last year?*
Check all that apply

- Email spam filters — **51%**
- Predictive search terms — **46%**
- Siri virtual assistant — **36%**
- Online virtual assistant — **31%**
- Facebook-recommended news — **28%**
- Online shopping recommendations — **28%**
- Home virtual assistant — **11%**
- Reverse image searching — **9%**
- None of the above — **16%**

The lesson here:

An educated customer is often your best customer. The more they understand AI and experience the benefits, the more open they will be to new ways AI can improve customer experience. With this knowledge, businesses should:
 • Consider appropriate levels of transparency in how they use AI to interact with customers.
• Provide clarity on how AI benefits the customer experience, positioning it as a way to get the best service possible.
 • Give customers information about the guardrails in place to safeguard their privacy

How comfortable are you with a business using AI to interact with you?

AI users   Non-AI users

55% Comfortable   ☺   **25%** Comfortable

19% Uncomfortable   ☹   **36%** Uncomfortable

26% Neutral   😐   **39%** Neutral

The Present: How much do you agree that AI can provide the same, if not better, levels of customer service than a human can *today?*

27% Agree   **38%** Disagree

35% Neither
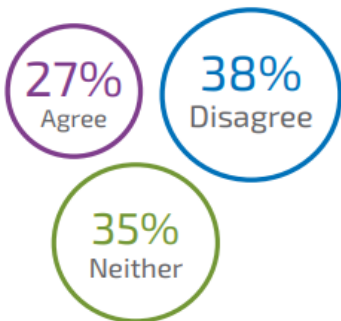
The Future: How much do you agree that AI has the *potential* to improve customer service?

38% Agree   **26%** Disagree

36% Neither
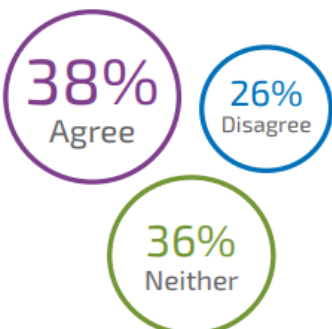
Do you think you would be more open to using more AI if it helped you in your daily life (for example, saving you time or money)?

68% yes

32% no

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The survey suggests, some of today's customer engagement AI falls short of what customers want and expect. Some of the negativity may reflect the reality of customer engagement systems today. They are often siloed in different departments – from customer service to marketing to sales – when they should be working together to inform one another. Quite naturally, this results in disconnected customer experiences, relegating AI to discrete pockets of the brand journey that doesn't follow the customer wherever they go

1. **Design for business outcomes** Businesses must aim their AI systems at the outcomes asking themselves: Am I trying to optimize customer service operations to ensure retention? Cross-sell and upsell? Reduce the cost of service? Organizations must ensure their systems provides anyone — including customer service managers and executives

2. **Deliver a consistent experience** a**cross channels**. Provide consistent experiences, not just for customer service, but also for marketing and sales across all communication channels. Centralize AI systems so that each channel benefits from each other? Look for solutions that are truly unified to break down these revenue-killing silos.

3. **Connect insight with action.** Tie AI to the ability to orchestrate outcomes, even those that cross legacy systems and organizational silos & use the results to improve future outcomes. Pragmatic AI systems take insights and to take actions that carry the customer from a service problem to loyalty-building resolution

In which situations would you be comfortable with a company using AI to give you better customer service?
Check all that apply

1. Online retail — 34%
Using AI to provide personalized recommendations on items you may want to purchase

2. Healthcare — 27%
A doctor using AI to help make a better diagnosis or recommendation about your health treatment

3. Telecommunications — 25%
A telecommunications provider using AI to make you a better offer on a new or renewed mobile contract

4. Banking — 20%
A bank using AI to determine the best banking products to offer you when opening an account

5. Financial advice — 20%
A financial advisor using AI to help determine better investment choices for you

6. Insurance — 15%
An insurance company using AI to monitor and analyze your daily activities in exchange for a lower insurance premium

7. Car dealership — 15%
A car dealer using AI to give you personalized advice on the best car to buy

8. Government — 10%
The government using AI to provide you with better and more personalized public services

Policies	Are the organisation's policies regarding tteh implementation of artificial Intelligence (AI) and or machine learning (ML) focused on the longer term benefits it brings to your customers as the key part of the ROI calculations on the investment?
	Has the potential impact of a negative customer reaction on the values of the organisation or the brand been assessed?
	How is the effectiveness of AI on the customer experience being measured?
Products /Services	Has the organisation properly researched which parts of the customer journey are capable?
Places	How will the places where the customer interfaces with the organisation need to be redesigned on the introduction of AI systems?
Processes	How will legacy processes need to be updated/deleted/amended upon the introduction of new AI customer experience management systems?
	Have new support systems been designed and tested to support customers in the event of technical difficulties with AI systems?
People	How will the skill development of the management and staff responsible for the day to day operation of theAI systems be managed?

Final Word

AI is here and here to stay. In the area of customer experience management it appears true to say that to date it has not been an unqualified success and there is still a great deal of room for improvement. There is some evidence that Millennials and Generation Z are more comfortable with using it but they too have little patience with it when it fails to meet their immediate needs. Even with them its OK , but only when it works.

On a wider front is the negative impact that poor AI systems have on brand and organisational image and it would appear that there is room for more consideration on this issue when implementing new AI systems.

The values issue also appears to have some relevance in certain areas of the machine learning environment. If data mining is being used to seek ways improve organisational performance, perhaps in the area of cost or supply chain management how are the interests of the customer and the potential risks to brand values assessed. If data mining identifies an opportunity that substantially cuts cost but at the same time negatively affects the customer's journey expectation as created by the brand proposition who ultimately takes the decision to implement the change or not?

Can machines learn things like honesty, loyalty and ethics?

Recommended Reading

https://towardsdatascience.com/machine-learning-algorithms-in-laymans-terms-part-1-d0368d769a7b
https://www.forbes.com/.../22/15-ways-to-leverage-ai-in-customer-service
https://www.defined.**ai**/call-center/white-papers
https://www.techtarget.com/.../feature/10-examples-of-AI-in-customer-service

https://towardsdatascience.com/machine-learning-algorithms-in-laymans-terms-part-1-d0368d769a7b
https://www.splunk.com/pdfs/ebooks/5-big-myths-of-ai-and-machine-learning-debunked.pdf
https://www.pega.com/system/files/resources/pdf/what-consumers-really-think-about-ai-study.pdf?
https://The Customer Service Experience for Millennials and Gen Z – CommBox

https://wordstream-files-prod.s3.amazonaws.com/s3fs-public/machine-learning.

The ICXI One Question Quiz

Is the organisation is already using AI to manage part of the customer journey? ☐ YES
If "Yes" How is the customer's reaction to it being assessed? ☐ NO