

**SAMSUNG**

**F**  **R**

**FUTURE**

**involving everyone in AI**

**26 September 2019**



**“One thing is for sure:  
We are living  
through a  
technological  
revolution.”**

# Foreword



Artificial intelligence, they say, is like the new electricity. A technology where invention is only the beginning. It might take decades before we fully appreciate its potential to reshape our world, but there are already hints of its power to upend the status quo, in healthcare, agriculture, manufacturing, security and education. From sophisticated operating theatre tools, designed to precisely interpret a surgeon's gestures, to AI-powered gardening apps that can help identify which plants to pull, it's difficult to imagine an industry which will remain untouched. One thing is for sure: We are living through a technological revolution.

But that's the thing about revolutions. They don't come with an opt-out. The changes that are coming are going to affect all of us - for better or worse - and we all deserve a say in what our future should look like.

I've spent the past few years talking to the general public about these issues and learned some important lessons along the way. While I've realised that the words 'data' and 'algorithm' make quite a lot of people want to gouge out their own eyes, I've also met countless individuals with sophisticated opinions. Particularly memorable: a teenage girl intrigued by the use of AI in courtrooms; a man in Leeds who spoke to me about his concerns of smart speakers being given a gender; and a mum in London who is worried about the privacy of the app used in her son's classroom.

Just because these forces are invisible, doesn't mean that people are blind to the impact they're having. There is a shared feeling among many I've met that the future of technology is an unstoppable wave they are powerless to question.

This is why, I think, it's so important to open the doors to a national conversation. It's why I'm enormously proud to be part of this project, to de-mystify artificial intelligence, to take stock of the public's attitude to AI, and to hear people's concerns. To do so in a way that invites rather than excludes and to allow everyone to be a part of shaping the way ahead. Because the future doesn't just happen. We create it.

**Hannah Fry**

Associate Professor in the mathematics of cities at University College London



# Starting the conversation

**"We've started the nation's biggest ever conversation about AI."**

There's a lot of interest in Artificial Intelligence (AI) these days. Cars, business and home technologies, the phones in our pockets - we're seeing advances that are making significant changes to our lives. AI isn't a new idea. We've been creating computers, phones, tablets and systems that can apply human-like logic for decades. But the technology has grown far beyond simple tasks. AI now helps us to make decisions, like planning the best route to work, or making selections that we would enjoy from our streaming services. It filters vast amounts of information to bring us relevant news and articles. It can even recognise what we say and respond to our requests through voice assistants.

Yet our research revealed that the way AI is often portrayed in fiction and in the media often focuses on the negative - whether it's killer robots in Terminator or AI rebelling against its creators in Westworld. We wanted to start a more balanced conversation and find out what people really think.

# What does AI mean?

AI is simply the ability for a computer to take varying inputs, correctly interpret or identify a pattern in them and then provide a recommended outcome. These inputs can vary from things in the physical real world to vast amounts of information or data stored in the virtual world.

As consumers we interact with AI every day both directly and indirectly. For example, directly when our sat nav reroutes us reacting in real-time to traffic or indirectly when our pension funds are invested on our behalf with complex risk assessments.

However, not all AIs are equal. Today they vary from simple algorithms (a consistent calculation) to more complex neural networks which allow machines to learn how to deliver the correct outcome.

**5,250**  
interviews  
with people  
across the UK  
and Ireland

**51%**  
feel AI will have  
a positive impact  
on society

## Talking AI

At Samsung, we decided it was time to really engage in how people viewed the advances in AI. So we've started the nation's biggest ever conversation about Artificial Intelligence. We asked 5,250 people in the UK and Ireland to tell us what they think and feel about AI. Their responses are collected in this paper and they're just the beginning. These findings will be the start of our conversation with people young and old across the country. This is the first step in our campaign to take AI into communities across the country, help people understand the benefits and hear their concerns about this transformational technology.

### A bright future, if we do it right

The growth in AI is already something that many in society feel positive about. People are looking forward to the ways in which AI will impact their lives, industry and work. When they understand the benefits that AI will bring to society they are even more positive about where this technology can take us.

### Approach with caution

While most have a positive view of AI, there are some who have concerns. There are people who question the way AI will be developed. Will it form biases against certain groups in society? What are the ethics of these new technologies? They also have concerns about who is creating AI and whether or not wider society will have an input into where and how the technology is used. There is even some anxiety about the potential for AI to turn against humanity. How will humans and AI interact with each other? This has been fuelled, in part, by the way the technology has been portrayed in fiction and by some high profile examples of AI impacting on business and politics.

### Awareness and inclusion

The key to success is going to be education. There is genuine appetite to learn more about how these technologies can benefit the world. Even people who aren't particularly interested in AI say that if they knew more they'd be more likely to become involved with the tech. People want tech businesses to share more and to play a key role to educate everyone about how AI is going to shape the world, not just in the far future, but in the next few years.

A photograph of a crowded event at the Science Museum in London. In the foreground, a large, ornate green and gold mechanical structure, possibly a historical piece of machinery, is mounted on a green vintage-style vehicle. The structure has a complex, lattice-like design with circular openings. A large crowd of people is gathered around, some looking at the exhibit. In the background, there are more people and a large, brightly lit area, possibly a stage or another exhibit. The text "Samsung starts the AI conversation at Science Museum Lates in London" is overlaid in white, bold, sans-serif font across the center of the image. On the left side, there is a blue digital display with the text "NATIONAL SCIENCE MUSEUM" and "SAMSUNG" visible. The overall atmosphere is that of a busy, interactive event.

**Samsung  
starts the AI  
conversation at  
Science Museum  
Lates in London**



# A force for good

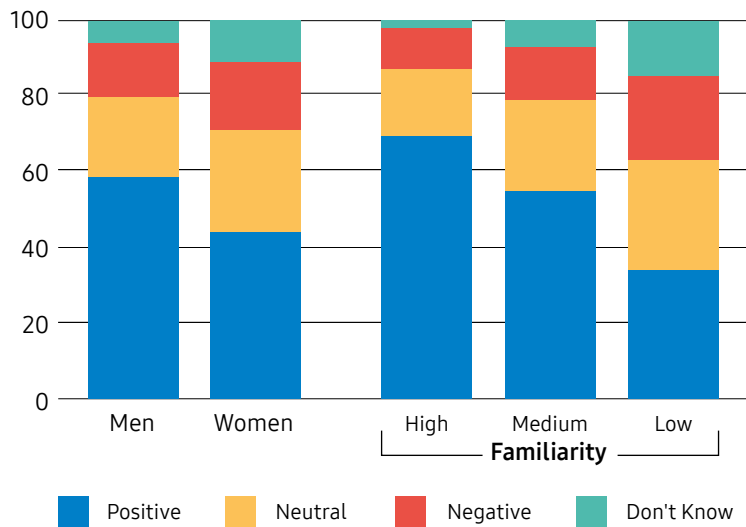
Artificial Intelligence is changing the way we live. The areas where people have already seen the impact of AI are the ones closest to them. Areas like how we shop, how we consume information and entertainment, and the way we get from A to B. But AI is already involved in a number of advanced solutions, such as tracking resistance to antibiotics, monitoring carbon emissions, and predicting severe weather systems.

**59%**  
positive feeling  
towards AI  
in the home

All this is just a small fraction of the possible applications of AI. Where AI takes us in the next five years will alter some of the fundamental ways we work and play. In business, for example, where we previously believed that AI would mainly grow in jobs like manufacturing and production, we now know that the technology can be applied to roles that require analysis and problem solving. From roles like accounting to management consulting, from performing complex surgery to care work, AI is going to become part of the process.



### Sentiment towards AI by gender and familiarity



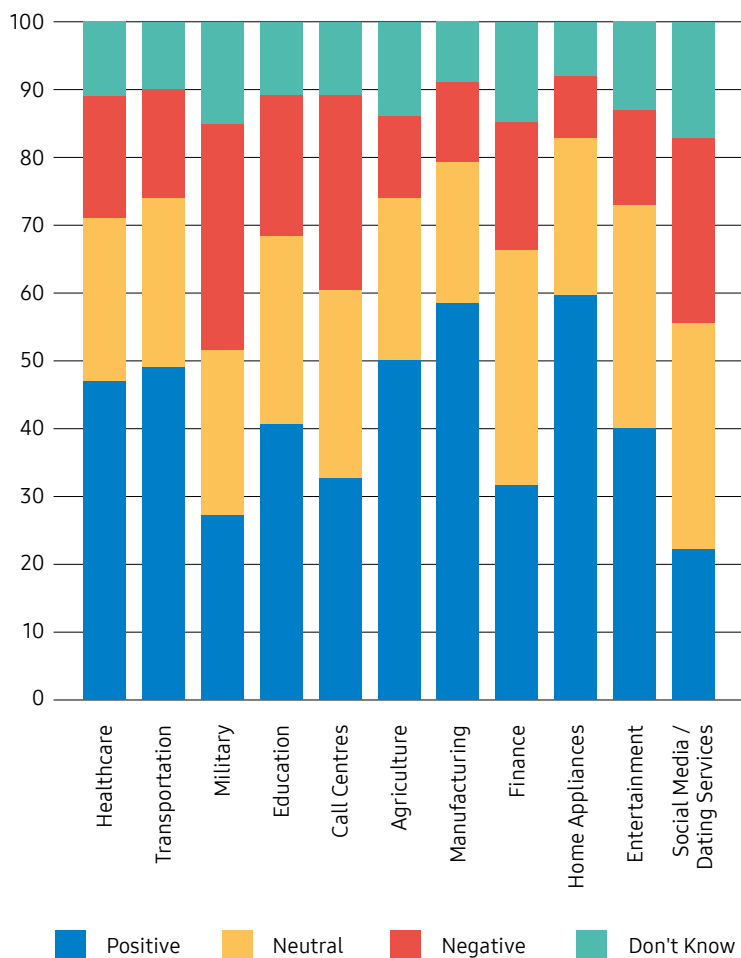
### We can all win

The impacts which AI will have are seen positively. Over half (51%) of all people feel that AI will have a positive impact on society as a whole, with only 16% feeling negative about our future with AI. The more familiar people are with the technologies involved, and the possibilities of AI, the more positive they are about the future. People who have been able to engage with AI or gain a good understanding of its potential are overwhelmingly positive (70%) about its impacts. That compares to just 34% of people who are unfamiliar with AI and its uses.

### Good for work, good for the home

How we work and how businesses operate are where a lot of the changes will be felt first. AI technologies are often able to operate faster and process more information than people. The belief is that they can assist or perform mundane and data-led tasks and free the workforce up to do more meaningful activities. People feel this is a positive development. Well over half (59%) of people feel that this will be a positive impact on manufacturing and about half feel this will be good for agriculture. People aren't quite as positive about the impact on areas like the military, however, with a third feeling negative about AI being used in this area and just over a quarter (27%) feeling positive about it.

### The perceived impact of AI on society



Closer to home, people can see the potential for AI in their day-to-day lives. AI is already in our voice assistants and it's finding its way into all kinds of appliances, like fridges, televisions and washing machines. The technology is designed to save us time, save us money or provide us with useful information. A significant majority of people (59%) feel positive about the way AI will improve this part of our lives.

**70%**  
looking forward  
to advances in  
healthcare

**56%**  
looking forward  
to giving the  
elderly more  
autonomy

## Endless possibilities

Beyond business and the home people are keen to see how this technology will support us and how that will impact society. They are anticipating improvement in areas like healthcare, including how we support the differently abled and elderly. Almost two-thirds (63%) told us they are looking forward a great deal to having enhanced healthcare. Over half (56%) also felt this way about how technologies can give the elderly or those with disabilities more autonomy in their lives. And half of the people we spoke to said they are really looking forward to technology assisting with the prediction and response to disasters. Even something seemingly simple, like the ability to have a more intelligent email, was viewed as something to get excited about by a fifth of people.

When we explained that these technologies would include Artificial Intelligence, people found them more desirable. Healthcare rose to 70% of people looking forward to adopting it, and disaster protection to 66%. It seems that once people start to engage with idea of AI, what it can do for them and the world around them, they begin to see the positive possibilities more clearly.

**“ There are plenty of misconceptions and fears surrounding AI. But if we want people’s perceptions to change, we need to get them more engaged in the technology so they have a better understanding of the possibilities.**

**Whilst there are ethical issues and we have to make sure to teach machines the right values, there are also huge opportunities ahead of us.**

**The next wave for me will be when AI starts solving deeper social challenges around us in healthcare, education and public service. There are so many more opportunities to drive efficiencies there, and part of what I am doing with the AI for Good movement is to bring some of these to life.”**

**Kriti Sharma, Founder, [AI for Good](#)**



F.R.  
FUTURE

MUSEUM EVACUATION

**F.R. FUTURE**  
One of the most important things that a self-organizing system can do is to help you understand the future.

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# We need to know more

Alongside the optimism and keen anticipation of what AI can do for us there is a degree of caution and concern about how the technology might be used. This caution focuses on areas like bias, ethics and even conflict. As with most things in life, a little information can be a dangerous thing. When people aren't invited into the conversation about how something might change their life they begin to form negative opinions.

**39%**  
belief that AI  
will hold some  
form of bias

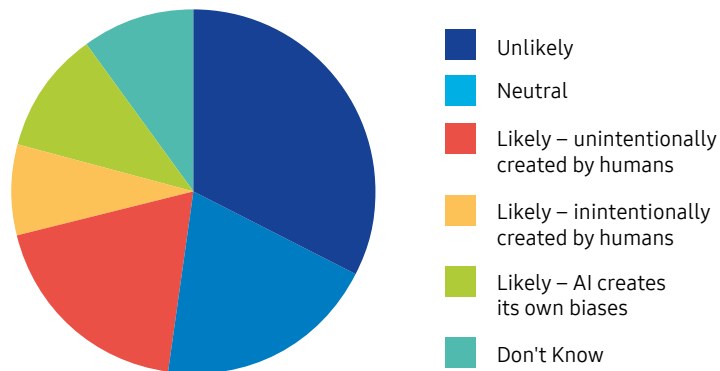
## The business of bias

We have a view of computers as logical, objective tools that support us to create, solve problems and make decisions. Some people feel that AI won't have this same logical objectivity in the future. Almost four in ten (39%) people feel that AI will hold some form of bias, and this concern was higher (43%) in those who held a closer interest in AI.

**20%**  
belief that bias  
in AI might be  
intentionally  
created

**76%**  
feel everyone  
should influence  
how AI makes  
ethical decisions

### Expected bias in AI



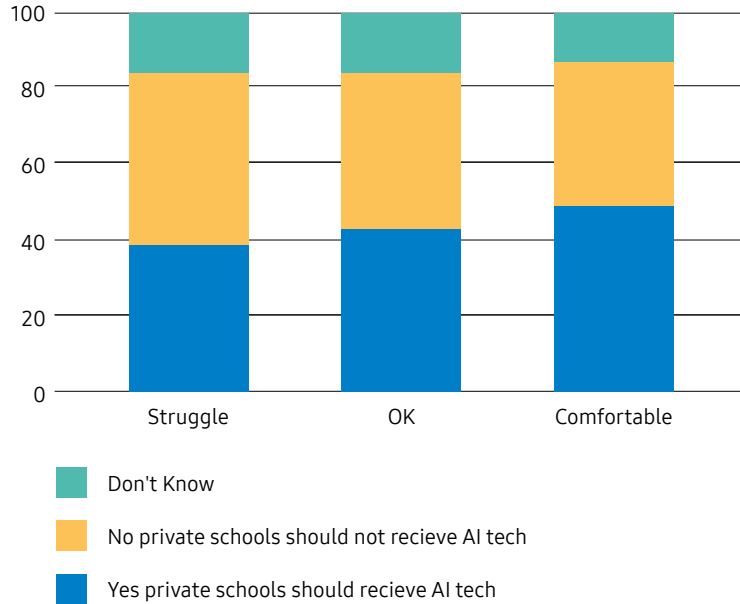
These biases could potentially come from a number of places. Some people believe that the bias could be passed on from those who are programming the AI in the first place, either intentionally or as a result of their own unconscious biases. Almost half (49%) believe that bias in AI would be unintentional, with a much lower number of people (20%) saying they felt this programming would be done on purpose. Others felt that the AI itself would form biases, with 28% feeling that these could develop on their own. This highlights the need for us to always retain the human touch in AI. Even those who create neural networks are unsure about how they work, so it's important to ensure humans always have ultimate control.

A number of these questions of bias focus on how AI might treat or profile certain groups in society differently based on their race, gender, sexuality or beliefs, etc. People are worried that any bias in AI could have a knock-on effect and increase prejudices. It might encourage people to act on their existing prejudices, as over a third (36%) of people believe. It may also, as over a third (35%) of people believe, encourage more people to hold these prejudices. Some people (31%) also believe that groups that already face discrimination will see this increase as a result of bias in AI.

### A question of ethics

Advances in AI are also raising ethical dilemmas. We wanted to know how people felt about the way AI could have the potential to change and disrupt people's lives. For example, one of the challenges of increased automation through AI technologies is the immediate impact it has on jobs. We asked people if we should use AI if an AI worker can do the job of five humans but means that five people lose their jobs, whether that's analysing data, saving lives or building computer parts. Most people (69%) would support the use of AI in this instance if it does things like save people's lives. This is despite the fact that this use of AI could result in some people losing their jobs, which of course presents an ethical dilemma for society.

**The education dilemma: even people that have a comfortable standard of living are unsure whether AI technology used exclusively in private schools would be good for society**

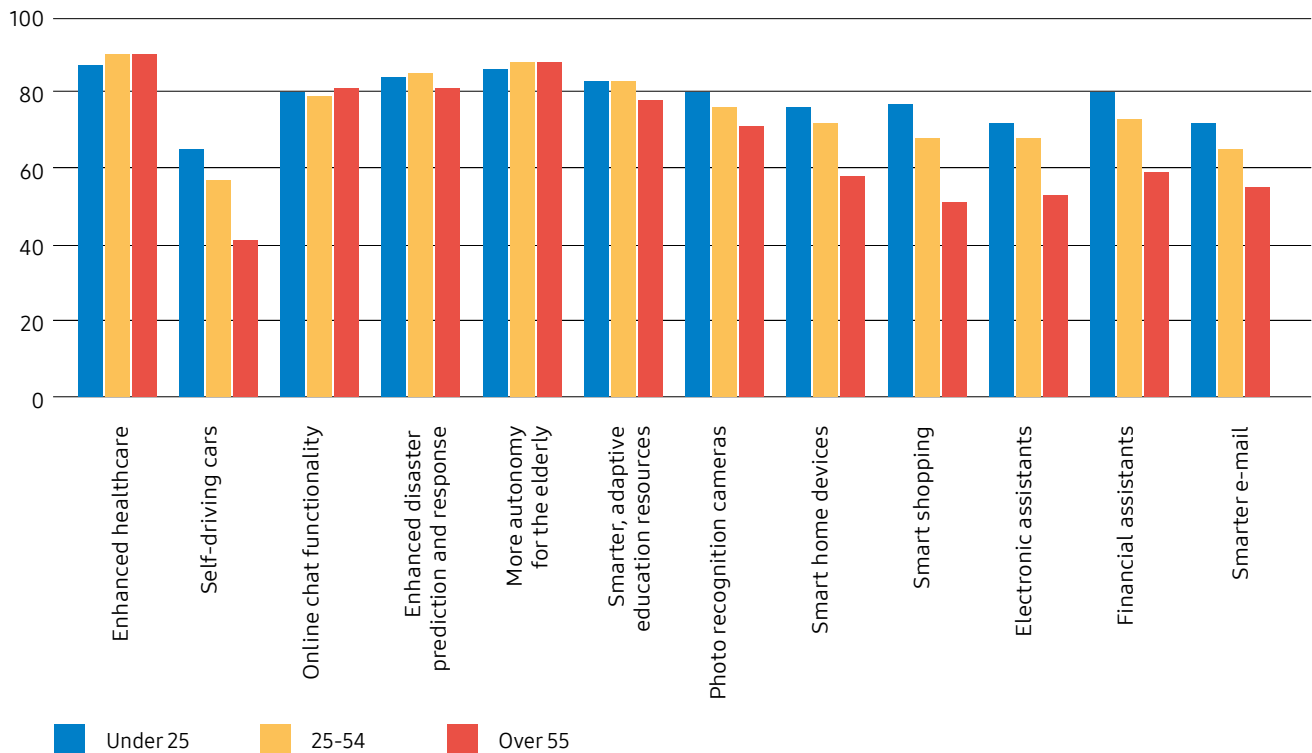


**40%**  
**would only buy  
 a car that puts  
 their safety first**

The ethics aren't just related to the world of work. It is anticipated that AI can make areas like transportation safer. The driverless cars that are already being tested raise a particular dilemma for people when it comes to driver, passenger and pedestrian safety. An automated car using AI may have to make a decision that opts to save multiple lives of pedestrians over the life of a driver, for example. When faced with a choice to sacrifice the driver over the pedestrian, only a quarter felt this was appropriate whereas almost half (49%) were opposed to the technology taking this decision. And when asked if they would buy a car that makes this decision, only 16% of people said they would make that purchase. Four-in-ten (40%) people said they would only buy a car that puts their safety first and a slightly higher number of people (43%) weren't sure if they would buy the car or not.

With so many people saying they are unsure about how to manage this dilemma and with no clear consensus on how we handle the impact of AI, it's clear people need more information to help them decide. It also reveals a tension between the way that humans and AI will interact in future. Should we ever relinquish decision making entirely to technology, or should human beings always have the ultimate control? Car manufacturers in particular will have to grapple with this dilemma as vehicles move increasingly towards full autonomy.

**Total positive anticipation of AI technology - self-driving cars perform the worst across all age groups, enhanced healthcare the top expectation, generally expectation wanes as people get older**



**70%**  
**concerned**  
**about future**  
**conflict between**  
**AI and humans**

**A potential for conflict?**

As well as the ethics of AI use there are many people who believe that there could be a future conflict between humans and AI. Over two-thirds (70%) have some level of concern about this, but only a small number (15%) see this as a significant issue. These anxieties are strongest in young people, with more than a quarter (27%) saying they are greatly concerned by a potential conflict. But despite this, most people don't see AI as dangerous. Only 20% felt this way about the technology. Again there is a feeling that AI could possibly become dangerous in the future, even if it's not something people feel at the moment.

Part of the problem is where people get their understanding of what AI is. There are a wide number of sources of information on the subject. As many as 42% of people get their information on AI from TV and radio and online is a close second at 39%. But almost a third (32%) are basing their assumptions on what AI is and how it will impact them using fiction as their primary source of information. This is even higher for people under 25 (36%).

It seems that people want to understand the technology better. There is an opportunity for AI and technology businesses to educate. If we continue to let old ideas flourish, based on Hollywood and Sci-fi stories, people will continue to misunderstand the benefits of AI-enhanced technologies.



# Opportunities to learn

**58%**  
teenagers  
believe they  
will have no  
influence on AI

As people begin to become more aware of their interaction with AI and the technologies that it runs, there is a greater need for knowledge and understanding. How does this technology work? How else can it help us? What can we do to keep up? People want AI to be easier to understand and they feel this responsibility sits with the people who are making it: the technology companies. That doesn't mean that they want to be left out of the picture. People want to be included in the development of AI and to have a say in how this tech is used.

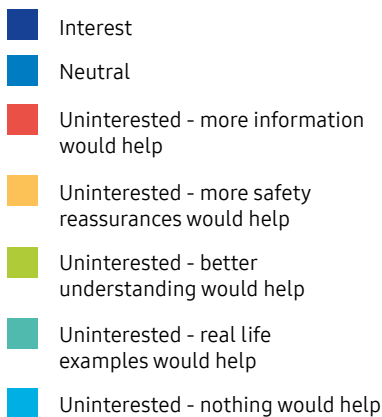
## Make it simple

As a whole, people are very interested in AI technologies. More than three-in-five (62%) say they're interested or very interested in AI, and this is particularly strong in the younger generation. People under 25 are more likely to be interested in AI than those over 55, with 66% of the younger generation claiming interest against less than half (48%) of the older. But these figures could be even higher if people were given more access to education and information about AI and its uses.

Over a third (35%) of people who aren't currently interested in AI believe that this would change if they had a better understanding of the principles that govern how it works. It's a similar story for those who want to know more about how it will impact their daily life, with 34% saying this would increase their interest. Teenagers in particular are asking for a better understanding of this technology. Well over half (56%) say that they would like to increase their knowledge of AI.



## Interest in AI



Part of the issue people are facing is that AI can feel intimidating. It's feels complicated. The vast majority of people (87%) believe that AI needs to be easier to understand and they're looking to the technology companies to simplify things. Almost two-thirds (63%) feel that tech businesses should be sharing more about AI, with 68% of these people believing that it is also the responsibility of tech businesses to make AI easier to understand. Government also has a role to play in education, as does wider business, with people feeling that the responsibility for education falls to these two groups, 48% and 42% respectively.

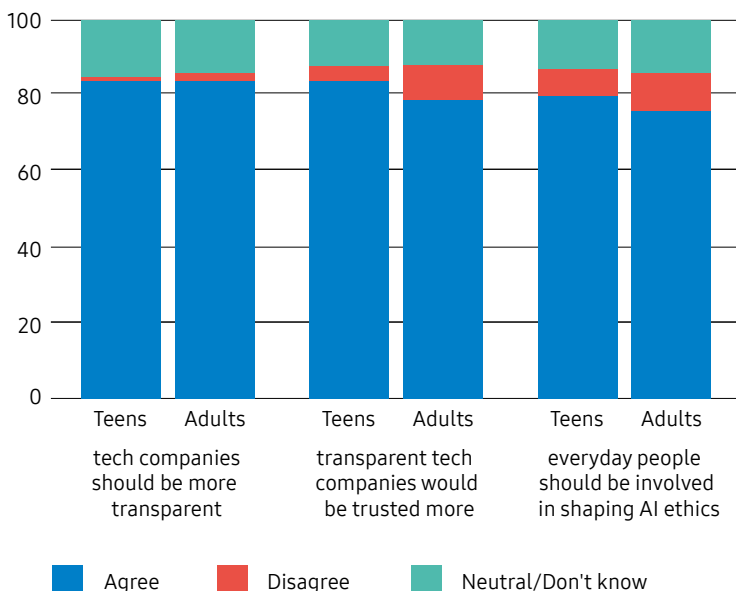
## A matter of influence

Another sign of engagement is just how much people want to be involved in the ways AI gets used in society. There is a belief from all ages that they lack influence on AI's development and they are expressing a need to be part of the AI conversation. For example, whether we should hand over control from humans to AI, how empowered should be AI with or without human interaction or how transparent tech companies should be about independent this technology really is.

More than a third (36%) of adults feel they are being left out of the AI conversation currently. It's even worse for teenagers. They're feeling pessimistic about their ability to influence how AI is used, with well over half (58%) saying they feel they will have no influence about how the technology develops. This lack of influence is concerning to most, with 56% of adults saying this is a problem and 43% of teenagers. They also agree that the only way they will influence the AI discussion is to find jobs in the technology industry. Something felt by 69% of adults and almost three quarters (73%) of teenagers.

The need to be involved stems in part from an overall interest in AI but also in the ethics of how the technologies will be used. People feel that, as AI is likely to be

## Teens and adults are not so different - when it comes to transparency and shaping AI ethics they hold very similar beliefs



used to make decisions that have an ethical component, everyone should have a say in how it develops. Over three quarters (76%) of people feel this way. And it is even stronger for those who say they trust technology companies (86%) and those who believe AI will have a positive impact on society (84%).

This drive for influence and involvement provides a clear indication of the need for technology companies to engage with the wider public on AI and the technologies using it. The conversations are only just beginning.

# Conclusions



**Teg Dosanjh, Director of Connected Living (AI & IOT),  
Samsung UK & Ireland**

It's clear that people have a natural interest in AI and are excited to learn more about how it will affect their lives. There is a real optimism around how AI will be a force for good in society. But it's also evident that people want to be involved in influencing AI and shaping the ethics that will govern it and their lives.

Yet over the past few years, we, the tech industry, have not done a good job at making AI understandable to people. People feel disconnected and unable to influence the technology that will shape the way they live in future. This needs to change if AI is going to become a technology that benefits human beings and helps everyone in society.

That's why at Samsung we're starting a debate around AI ethics by leading the nation's biggest ever conversation around AI. We want to listen, learn and involve real people in the future direction of this technology.

We're not just stopping with this report. People, especially teenagers, have told us they want to learn more about AI, which is why we're taking our FAIR Future campaign into communities across the UK to allow everyone to learn more about this transformational technology and share their views on how AI should be developed. Our online hub will open up this knowledge to everyone in society so they can better understand what AI is, how AI is already part of their lives, and explore how it might evolve in the future.

By giving people a voice in the AI debate, we hope to stimulate awareness, understanding and promote individual control of AI in people's lives.

This is crucial if AI is going to be a technology that benefits everyone in society.

**“There is a  
real optimism  
around how AI  
will be a force  
for good in  
society.”**

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## Methodology

The findings in this report are based on an online survey, conducted by [delineate](#), a strategic insights firm and their sister company opinion.life, an international market research company.

The survey was conducted in August 2019, among adults and young people aged 13+ in the UK and the Republic of Ireland. In total 5,250 people were surveyed, with 4,700 in the UK, and 550 in the Republic of Ireland.

Survey participants were selected from online consumer panels and invited to complete the online survey by mobile or computer. Respondents were eligible on the basis of age, gender and region, with representative quotas set according to published statistics for each country.

**The Margin of Error at the  
95% confidence level for the  
survey samples are as follows:**

**Total sample**  
± 1.35% (n=5,250)

**UK sample**  
± 1.43% (n=4,700)

**ROI ± 4.18% (n=550)**

# FAIR Future plans

Change is needed. That's why at Samsung we're doing a number of different things to get people involved and engaged so they can influence decision-making around AI's future.

- We're creating an online hub, so people can better understand what AI is, how AI is already part of their lives, and explore how it might evolve in the future.
- Through our Science Festivals we're taking AI on the road and into communities - letting people get 'hands-on' with the latest tech, and hearing how they want AI to help them.
- We're working with young people at our new Samsung KX experience space, to gather their views on AI, and help them understand and acquire the skills they'll need in a world where AI is all around us.
- We're sharing what we learn with wider AI stakeholders, including the UK Government, to help inform broader thinking about AI ethics and shape the future.



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involving everyone in AI