



SMART CITIES: measuring public perception

By Milestone Systems

MAKE THE
WORLD SEE



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INTRODUCTION

Our urban centres are maturing and getting smarter. From Lisbon to London, Kolkata to Copenhagen, technology is becoming more and more embedded in our everyday lives.

The pace of change will undoubtedly quicken in the coming years, as artificial intelligence and other technological advances continue rapidly expanding the many possibilities that can help societies tackle major challenges such as climate change, scarcity of resources, and traffic congestion.

But how does the general public feel about smart city development?

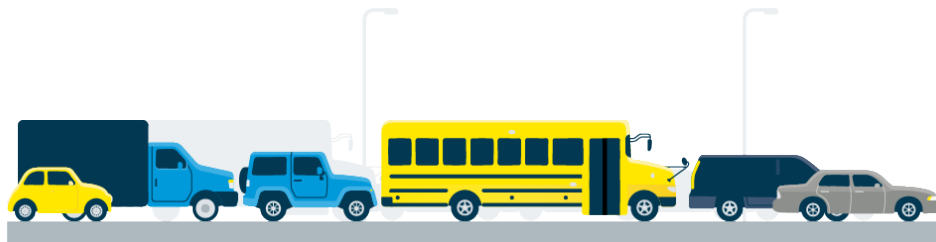
Do they realise that it is already taking place across the UK, or do many people still think it just sounds like something out of a science fiction novel?

As seen with the vociferous opposition to the roll-out of low-traffic neighbourhoods in cities and towns throughout lockdown, buy-in from citizens is essential to the successful evolution of urban areas.

In this report, we will uncover public attitudes towards and understanding of smart city concepts, establishing the technologies they are currently the most open to, as well as those they are sceptical about, their fears and also their hopes for the smarter future of our cities.

We will also explore people's biggest gripes with their local urban centres, and explain how smart city technology that is already available could actually provide effective solutions to many of these.

In doing so, we will be able to show why communicating the benefits of smart city development is so important, and consider how exactly we should go about this in the coming years.



FOREWORD

“In 1950, just over a quarter (29%) of the population lived in cities and urban areas. Today this number has risen to 55%, and by 2050 it is expected that more than two-thirds (68%) of the world’s population will live in cities; an additional 2.5 billion people.

This rapid urbanisation has brought with it a myriad of challenges, which it has become increasingly clear must be addressed if we are to maintain our existing quality of life in the future.

The good news is, the equally rapid advancement and adoption of technology have provided us with the tools needed to reimagine and reshape our urban environments to tackle these challenges in exciting, forward-thinking ways.

By transforming into smart cities, with technology and data used to enhance the performance and quality of services such as energy, connectivity, transportation and utilities, our urban areas can continue to meet the needs of their residents for many years to come.

In a recent report, OECD also underlines that ‘the pivotal role of digitalisation in emergency responses to the pandemic has pushed many cities to systematise the use of smart city tools more permanently, while staying alert and monitoring the risk of contagion.’

It seems evident that the digitalisation of our societies will be further accelerated, and that attention to smart cities will continue to increase.

UK has been one of the earliest adopters of smart city technology, and is recognised as a global pioneer, with a number of its cities consistently pushing themselves to innovate and evolve for the good of the people they serve.

For example, the Smarter London Together roadmap was launched by the Mayor of London in 2018 and outlines the latest strategy to make London ‘the smartest city in the world’. It incorporates five key missions: more user-designed spaces, a new deal for city data, world-class connectivity, digital leadership and skills enhancement, and city-wide collaboration.

In 2020, London was ranked no. 15 in IMD’s Smart City Index, closely followed by Manchester at no. 17, and Newcastle at no. 23 out of 109 cities worldwide.

In 2019, Bristol launched ‘Connecting Bristol’, a new five-year strategy bringing together its existing smart city functions, including Bristol is Open, for a more holistic approach. And there are other contenders, demonstrating the widespread enthusiastic implementation of smart city technology across the UK.

In order to maintain this momentum and ensure we can continue to futureproof our cities, it’s integral that we have public support for these developments, and do all we can to avoid causing harm to those we are setting out to help – however unintentionally.

We hope that this report will equip us with valuable insights and raise some pertinent questions that will help to make this possible.”



Thomas Jensen,
CEO at Milestone Systems



ABOUT THE COMPANY

Founded in 1998, Milestone Systems is a global leader within open platform video management software (VMS).

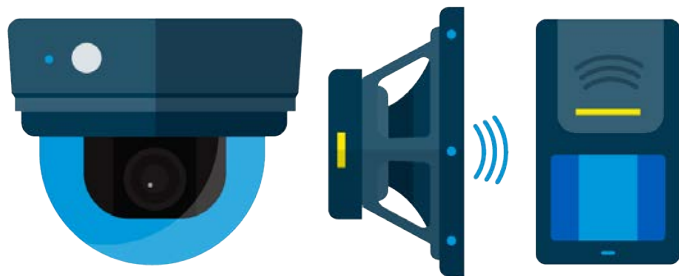
We are dedicated to deliver high quality video technology software, in which our community of hardware and software partners can integrate their video solutions for security and beyond security purposes.

Our purpose is to make the world see. We enable our customers to see what their eyes cannot always see, and we help them understand what they are looking at.

Together with our partners, we provide video technology to cities, industries, communities, schools, hospitals, and other institutions. We enable them to analyze the past, predict the future and make better decisions.

These are important capabilities in creating an intelligent and more sustainable society.

Milestone Systems' solutions are available in most countries around the world, with regional offices and sales representatives in more than 25 countries.



KEY FINDINGS

We surveyed 2,000 Britons in order to gain a deep understanding of the general public's understanding of, and attitudes towards, smart city technology, as well as their current dissatisfactions with our urban centres. Here's what we found:

Only 18% of people are very familiar with the term 'smart city'

A fifth of people in the UK have never heard the term before

Less than a third of people think that their nearest city already has smart technology

Around a quarter of people are 'very excited' about the prospect of smarter cities

22% of people think smarter cities will be positive, but have some concerns

41% of people are worried about cyber security issues relating to smart cities

75% of people have health, safety and security concerns when in their nearest city

More than a third of people think traffic congestion has worsened in their lifetime

80% of people want their local authority to take more effective action against climate change, 47% believe that enhanced use of data and technology would help to do so

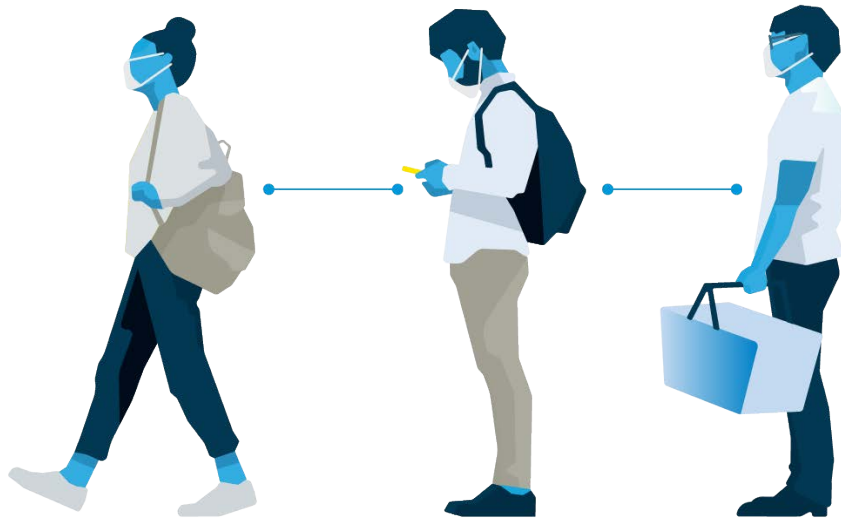
61% of people do not feel informed about smart city developments, but would like to be

Half of people would like to hear about smart city technologies before they are implemented





CHAPTER 1: Public attitudes and understanding



How much do people really know about smart cities?

There is no absolute definition of a 'smart city', with the concept continually evolving as the technology behind it develops.

However, it is generally understood to mean a city that leverages technology and data to increase efficiencies and improve the quality of services and life for its residents.

The term has been in fairly widespread use in tech circles since the early 2000s, and many of the UK's cities are already considered world leaders in this regard.

It could therefore be easy for those working in the tech industry or local government to assume that the majority of the general public would, by now, have at least some understanding of the concept.

However, our research has revealed that that is patently not the case.

When asked if they understand what is meant by 'smart city', just **18%** of people said that they are very familiar with the term, while **28%** said that they think they have a rough understanding.



On the other hand, a fifth (**20%**) of people had never even heard the term before, a quarter (**25%**) said they weren't sure, and **10%** either found the concept of smart cities confusing, or had heard the term but didn't know what it meant.

This means that more than half of the UK population have either no or very limited knowledge about smart city technology, and how it has quietly been helping to reshape many of the urban landscapes around them and ensure they are fit for the future.

Delving further into these figures, we can begin to paint an even more enlightening picture of how understanding of smart cities differs greatly between different demographics.

Perhaps unsurprisingly, the youngest age groups were the most likely to say that they were very familiar with the concept, with **27%** of 18-24 year olds, and **26%** of 25-34 year olds giving this response.

These numbers dramatically decreased with age, with only **6%** of 55-64 year olds and **2%** of those 65+ confident that they understand what a smart city is.

Similarly, the youngest respondents were less likely than average to have never heard the term before, with **14%** of 18-24 year olds and **12%** of 25-34 year olds entirely unacquainted with smart cities.

These figures rise to **28%** and **35%** for the two oldest age groups.

More unexpectedly, however, the data also shows a marked difference between the understanding of men and women.

Interestingly, **21%** of men said that they were very familiar with the smart cities concept, compared with **15%** of women, while **23%** of women had never heard the term before, compared with **15%** of men.



“This research has highlighted conspicuous disparities in the awareness of smart city technology between different groups.

While we might have expected the older generations to be less informed on the subject, it is startling to note the not insignificant differences between the responses from men and women.

While certain people may be less likely to encounter information about smart city technology in their day to day life, they will be equally as affected by the tech as it develops and becomes more and more widely implemented across the UK.

It's clear that more needs to be done to reach these different demographics and give them the opportunity to take an interest in the exciting ways in which their cities are evolving.”

Malou Toft,
EMEA VP at Milestone Systems



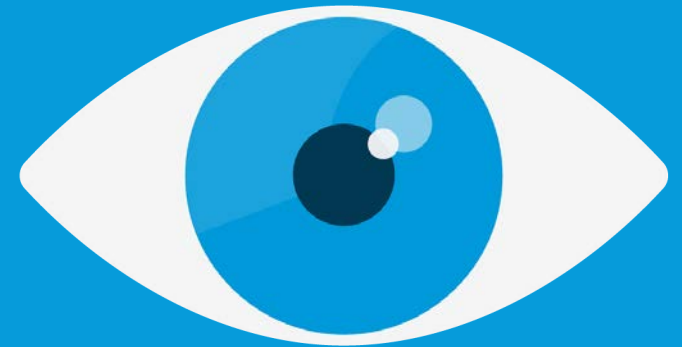
Are people open to smarter cities?

Although awareness of current smart city developments across the UK is fairly low, as the technology continues to advance it will play an increasingly prominent role in the running of our urban centres and people's day to day lives.

So how do they feel about the prospect of ever smarter cities? Enthusiastic, cautiously sceptical, or perhaps even against the idea altogether?

Encouragingly, our research showed that feelings towards the growing prevalence of smart city technology are largely very positive.

Around a quarter (**24%**) of people said that they were 'very excited' about future smart city developments, and a third (**32%**) said that they believe it'll be a good thing.



Understandably, given the previously examined lack of knowledge amongst many groups surrounding the finer details of smart city technology, **22%** of people said that they think there are some potential benefits, but that they also have some concerns.

Only **5%** said that they believe it is unnecessary, another **5%** that the risks outweigh the benefits, and **3%** that they are actively against further implementation. However, echoing the earlier data, a fifth (**20%**) said that they don't know enough about the concept to know how they feel.

It is interesting to note that men were more likely to be very excited about the prospect of smarter cities than women, at **27%** and **20%** respectively.

The research also showed that the youngest age group were most likely to be very excited, with **32%** of 18-24s giving this response vs **8%** of those 65+.



These groups were also no more likely to be opposed to the idea than the average. This suggests that greater knowledge and understanding of smart city technology typically leads to more positive feeling rather than negative.

It is also promising to see that, although the older age groups have the least prior knowledge about smart cities, and are therefore the most likely to say they don't know enough to know how they feel (**29%** over 65s vs average of **20%**), they are not inherently more opposed to the idea.

The numbers of respondents who said that they think it'll be a good thing, or that they believe there are benefits but have some concerns, were remarkably similar across every age group.

These figures again highlight the need for further information and education, in order to address doubts and improve the perception of smart city technology amongst the general public – something that will become ever more important over the coming years.



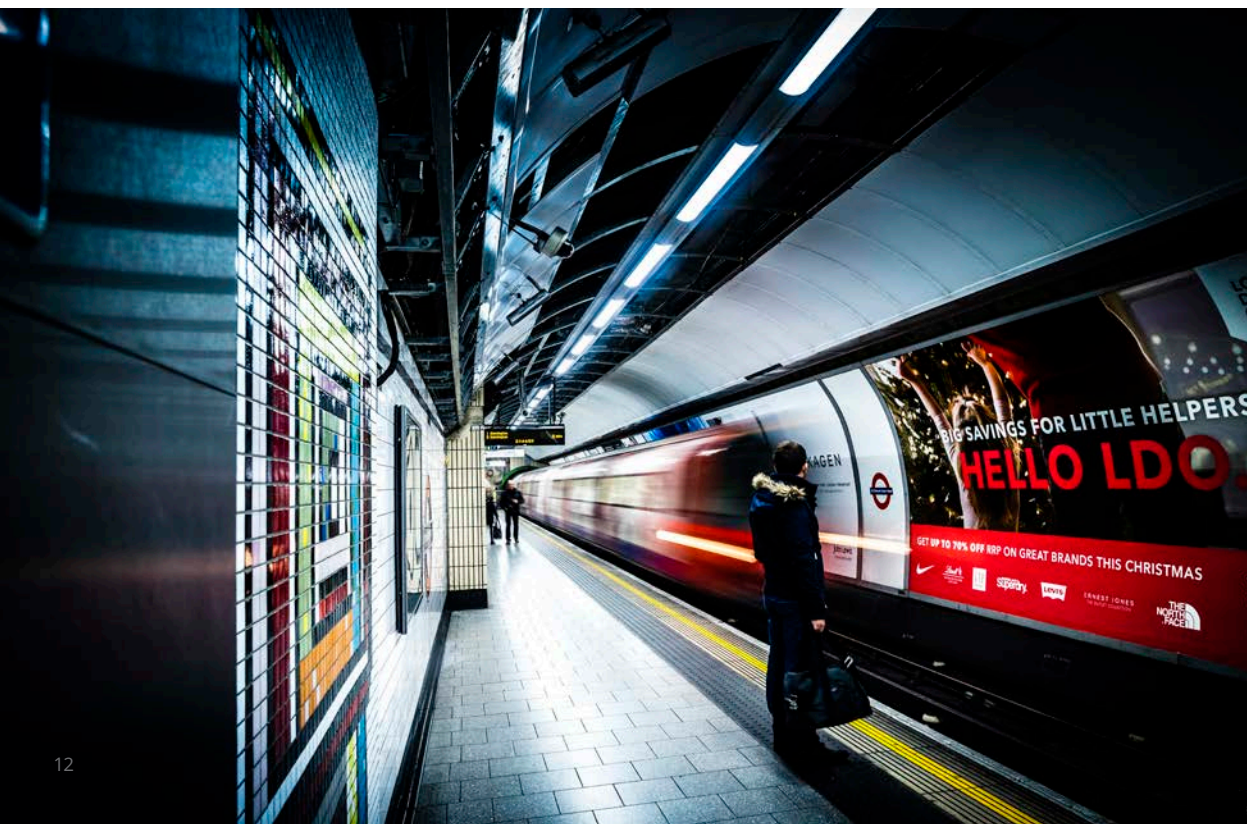
Risk vs reward

We have established that the majority of people are excited for, or at least open to, the prospect of smarter cities, but what is it that they hope the technology will help to achieve?

While the responses relating to the potential benefits of smart city technology were relatively consistent across all age groups and genders, and only **12%** of people said that they don't believe there are any potential benefits at all, awareness of the specific rewards offered by smart city technology seems low.

According to the research, the most widely anticipated positive consequence of smart city development is improved efficiency of public transport networks, yet less than half (**44%**) of people believed this to be a benefit.

Other perceived potential benefits include improved accessibility for those with disabilities (**35%**), improved air quality (**35%**), improved internet access for all citizens (**32%**), reduced traffic congestion (**32%**), enhanced safety and security (**29%**) and reduced greenhouse gas emissions (**25%**).



Given that these are all integral aspects of city life that smart city initiatives can have a proven impact on, this indicates that more education is required around the tangible benefits that smart city development can bring, even amongst those who are already familiar with the concept.

At the same time, there are a number of concerns shared by members of the public surrounding advances in smart city technology.

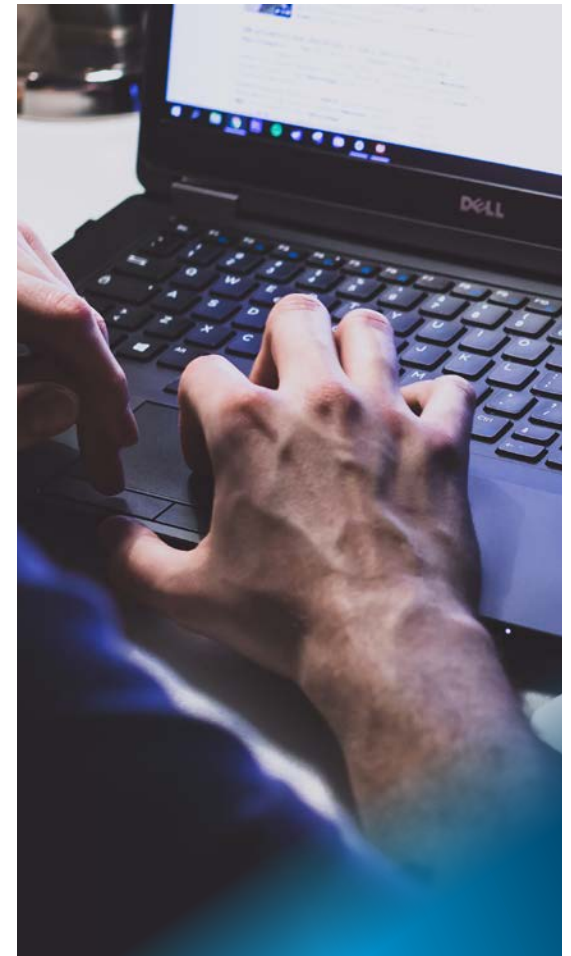
Most significantly, two-fifths (**41%**) of people are worried about cyber security issues, and more than a third (**36%**) worry that their data could be used by third parties without their consent.

Surprisingly, the youngest respondents were actually the least likely to be concerned about both cyber security issues (**35%**) and the misuse of their data (**33%**), perhaps because they are more comfortable with digital technology in other aspects of their lives.

“Cyber security and data privacy are two serious issues that need to be a top priority for everyone involved in the implementation of smart city initiatives. It’s good to see that a lot of the general public are already conscious of their importance, as this will help to hold vendors and local authorities to account.

“The National Cyber Security Centre published [detailed guidance](#) for local authorities in May 2021, highlighting the risks of disruption to critical public services, and of sensitive data being stolen in large volumes. In order for smart cities to truly serve and improve the lives of their citizens as intended, following this guidance will be key.”

Malou Toft,
EMEA VP at Milestone Systems



Other potential problems highlighted by the research include concerns that taxes could be increased to pay for new technology (**32%**), and fears that the increasing prevalence of technology could inadvertently exclude older or less fortunate members of society (**32%**).

Eighteen percent of people said that they have no concerns relating to smart cities at all, but another **18%** said that they are sceptical about the benefits of technology generally.

This reflects the findings of Edelman's 2020 Trust Barometer, which revealed that trust in tech both globally and in the UK is dropping, and 3 in 5 British people believe that technological change is happening too fast.

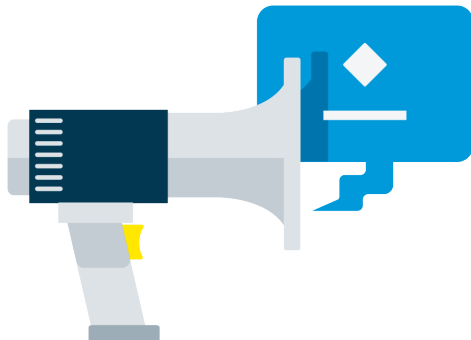
"We cannot ignore the fact that people around the world are growing increasingly sceptical about technology and its impact on their lives.

This tells us that establishing consumer and public trust must continue to be top-of-mind, as smart city technologies become increasingly prevalent.

The accelerating adoption of video technology does not give businesses a license for misconduct.

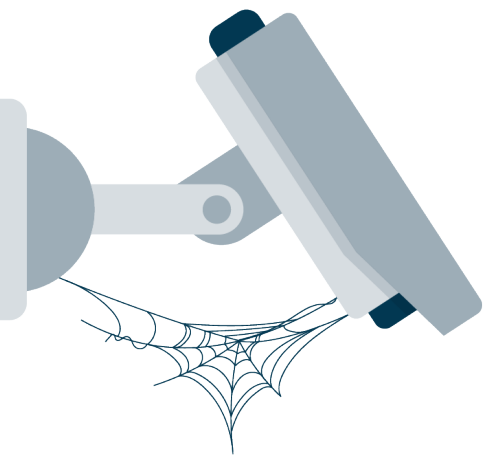
Instead, the industry must work together with regulatory bodies, city leaders and technology partners to protect individual privacy and comply with data protection regulations."

Malou Toft,
EMEA VP at Milestone Systems





CHAPTER 2: Exploring the possibilities



Safety and security

While only **29%** of people said that they believe that smart city technology could contribute to enhanced safety and security, the research also revealed that three-quarters (**75%**) of people have at least one health, safety or security concern when in their nearest city.

Petty crime is the most widespread, with **37%** of people citing this as a worry, followed by air pollution (**29%**) vandalism (**25%**), pedestrian safety (**24%**), driver safety (**17%**), terrorist activity (**17%**) and cyclist safety (**14%**).

Aside from terrorism, which was of markedly less concern to those over 65 than any other age group

(**8%** vs average of **17%**), there was a surprising consistency across both age groups and genders.

Video technology is rapidly advancing, and can now be used to help tackle each and every one of the above concerns, but are people aware of its potential to significantly improve the safety and security of urban environments?

Or do they have preconceptions about video that would make them feel uncomfortable about further rollout of the technology in cities and towns around the UK?



When asked what best fits their perception when hearing the term 'video technology', the most common answers were 'cameras' (**56%**) and 'surveillance' (**51%**). Only a third (**33%**) of people said 'security', **19%** of people said 'sensors' and just **14%** of people 'smart cities', suggesting that people's understanding of video technology and its capabilities is largely limited to CCTV – just one of video technology's many possible applications.

Despite this, attitudes towards video and sensor technology are actually very positive. The research sought to establish how comfortable people would be with the tech being used in their nearest city for health, security and safety reasons, based on a scale from 0 (not comfortable at all) to 10 (extremely comfortable).

Eighty four percent of respondents placed themselves at five or above, with nearly a quarter (**22%**) of people placing themselves at 10. Only **2%** of people said that they were not comfortable at all.



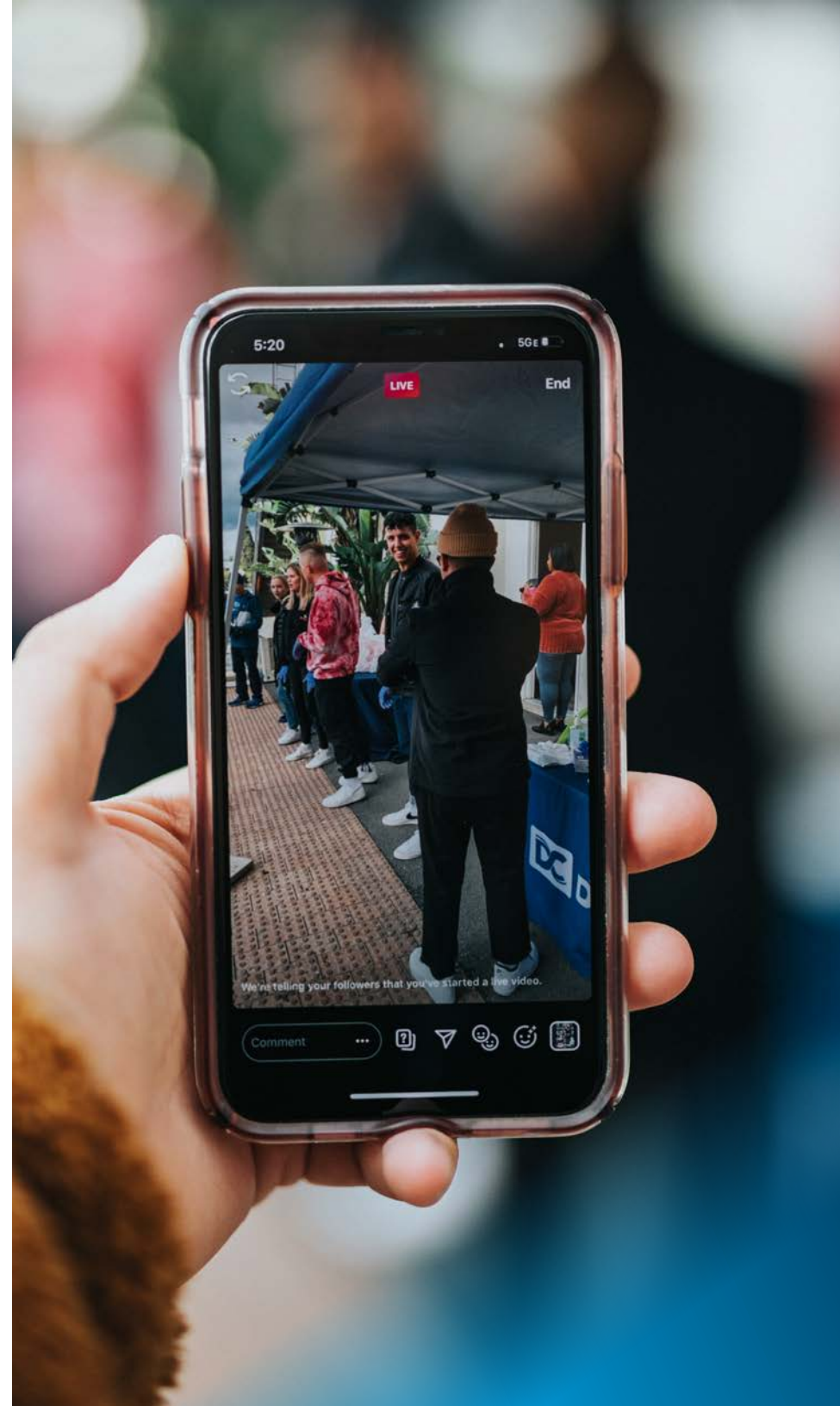
With video technology set to play a growing role in the running of our smart cities, it's important to maintain this good feeling towards the technology going forward, particularly in light of the Edelman Trust Barometer.

The survey highlighted a number of measures that would help to improve many people's personal comfort level with video technology being used in public spaces.

Transparency was a particularly common theme: **40%** of people said that they would like to see clearer signage that video technology is being used, **39%** of people would like clearer communication about the mitigation of risks (e.g., cyber security and data privacy), and **36%** of people would like clearer communication about the benefits of the technology.

There was also relatively high demand for stronger regulations (**36%**), which, if designed carefully, would potentially incorporate the other measures.

This would help to ensure that the technology is used in only the safest, most beneficial ways and uphold its positive reputation amongst the public.



Mobility

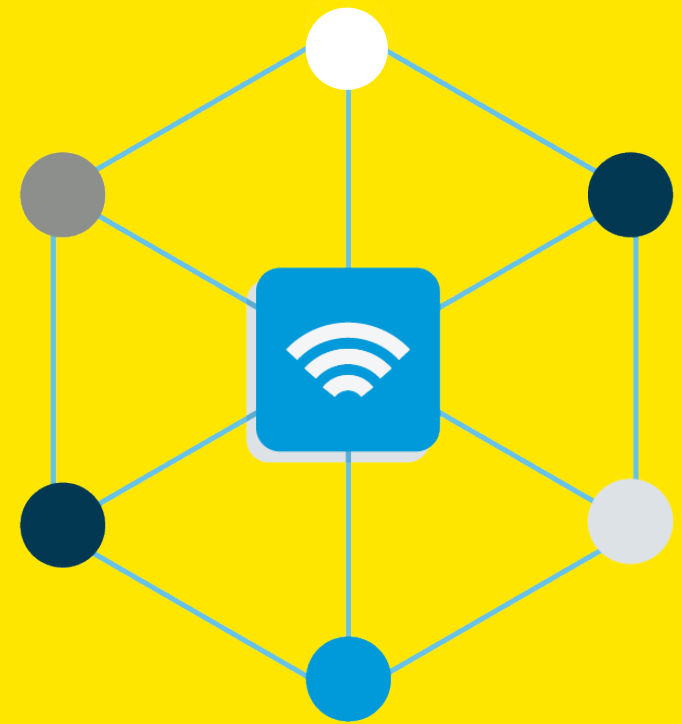
It's clear from the research that many people are unhappy with the transport infrastructure in their nearest city.

Traffic is seemingly the biggest complaint, with congestion a problem that local authorities have not yet tackled successfully.

Only a fifth (**20%**) of people think that traffic has improved in recent years, while **46%** think it has stayed around the same level, and more than a third (**34%**) think it has worsened.

This is unsurprising, given that the UK was recently named the third worst country in Europe for congestion. A study revealed that British drivers spend an average of 32 hours a year stuck in traffic jams during peak periods, with the direct and indirect costs reaching around £31bn last year - an average of £968 per driver.

Interestingly, the younger respondents were much more likely to think congestion had improved (33% of 18-24 year olds vs 7.5% of over 65s), and less likely to think it has worsened



(17% of 18-24 year olds vs 57% of over 65s). This could suggest there have been some minor improvements in very recent times, but generally there has been limited decrease in traffic over a longer period.

Such heavy road use not only leads to congestion, but also puts people's lives at risk.

Around 1,750 people are killed in reported road traffic accidents each year, with a further 25,000 people seriously injured in a typical year.

In 2020, there was an 11% decrease in deaths and serious casualties year-on-year, which has been attributed to the decrease in traffic volume due to the coronavirus pandemic.

Our research shows that road safety is another key concern for the general public: nearly a quarter (**24%**) of people are worried about road safety as a pedestrian, **17%** of people about road safety as a driver, and **14%** about road safety as a cyclist.

Smart city concepts such as smart traffic lights, programmable smart barriers which control traffic, and smart sensors that facilitate real-time monitoring of traffic congestion and accidents and enable instant detection of hazards such as ice forming on the roads, can drive

efficiency, drastically cut commuter times and improve safety for all road users.

Another way to reduce congestion, improve safety, and reduce harmful emissions, is to encourage more people to use public transport regularly.

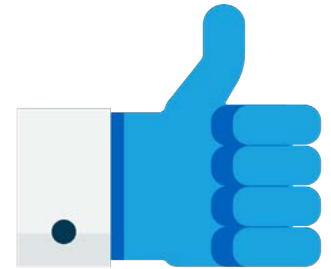
However, while the pandemic temporarily reduced reliance on cars, it will potentially lead to a long term avoidance of public transport for many people.

Although our research shows that **39%** of people plan to use public transport more or just as frequently as they did prior to the pandemic, another **39%** are now more reluctant to do so. **Thirteen percent** of people said that they would only use public transport when left with no other choice, and **10%** of people would not use public transport at all due to worries about the infection risk.

This could lead to an increase in cars and cyclists on the roads, exacerbating existing problems. It will be important to improve people's confidence in public transport and make it a more pleasant experience, and smart technology – if publicised effectively – could do just that.

Smart video technologies that could help to regain trust in public transport include skin temperature detection that would identify feverish passengers, mask detection, crowd

counting to avoid overcrowding, digital signage for clear communication, heat mapping to optimise people flow, and proximity identification to enable social distancing. All of these technologies are readily available and would overcome many of the post-Covid fears around public transport use.



Sustainability

Climate change continues to be a subject of global and growing importance, with activists like Greta Thunberg and Extinction Rebellion putting pressure on governments to make major legislative interventions in the name of the environment.

According to our research, the discourse around climate change has had an impact on the British public, with **80%** stating that they want their local authority to take more effective action against climate change, and **29%** citing air pollution as one of their biggest worries – significantly more than the 17% who are concerned about terrorism.

While there is clear concern about climate change across the board, it is interesting to note that women were more likely than men to want their local authority to combat climate change (**84%** vs **77%**), and the younger respondents were also more likely to say yes (**87%** of 18-24 year olds vs **70%** of over 65s).

Yet, when asked whether they think that enhanced use of data and technology can help to combat climate change, less than half (**47%**) said yes.



Echoing the earlier findings regarding awareness of smart city technology, men were significantly more likely to say yes than women (**52%** vs **42%**), and the youngest respondents were more sure than the oldest (**52%** of 18-24 year old vs **31%** of over 65s).

Amongst those who said no, the most common reason for not wishing their local authority would do more was that they think it would result in higher taxes (**34%**).

Other reasons included thinking that they are doing a lot already (**31%**), not believing in climate change (**24%**), and thinking that it would negatively impact the daily life of citizens (**23%**).

"This demonstrates again the need for greater education around smart city technology and its potential capabilities. Sustainability and tackling climate change are key priorities for many cities currently, so there would likely be a lot of support for technology that could help to make a real difference.

"Not only would wider implementation of smart technology help to cut down greenhouse gas emissions and improve air quality, but it is likely to have great support from the general public."

Malou Toft,
EMEA VP at Milestone Systems





CHAPTER 3: **Communicating the benefits**



While we've established that more needs to be done to communicate the benefits of smart city technology, and to notify people of its practical applications in their nearest cities, what – if any – communications have people received so far?

And would they actually be interested in hearing more? Our research suggests that some efforts have been made by local authorities, but they're certainly not managing to reach the majority of people.

We found that around a fifth (**21%**) of people feel that their local authority has kept them up to date with new smart city developments.

On the other hand, **61%** of people said that they do not feel informed but would like to hear more about new developments.

Only **18%** of people said that they are not interested, indicating a great appetite for more frequent, or more detailed communications.

While only **5%** of over 65s said that they currently feel up to date on smart city initiatives, and the older age groups were very more likely to say that they were not interested than their younger counterparts (**31%** of over 65s vs **17%** of 18-24s), it is encouraging to see that far **72%** of 55-64 year olds and **64%** of over 65s said that they would be keen to find out more about developments in their area.



When asked where they have gained their knowledge about their nearest city's smart initiatives so far, there was a clear leaning towards digital channels.

The most common answer given by respondents was digital marketing materials from their local authority (**17%**), followed by the local authority's website (**16%**) and people's own research online (**16%**).

Fewer people had received physical marketing materials from their local authority (**15%**), heard about developments on TV or radio commercials (**8%**) or via face to face public consultations (**5%**).

This disproportionate emphasis on digital channels could account for some of the disparity between the different age groups when it comes to their knowledge around existing smart city developments.

Investigating how people would like to receive information about future smart city developments, the research revealed that a third (**33%**) of people would like to receive email updates. Social media also proved popular, with **27%** of people expressing an interest in finding out more information this way, rising to **33%** of 18-24 year olds, **30%** of 25-34 year olds, and **32%** of 35-44 year olds.

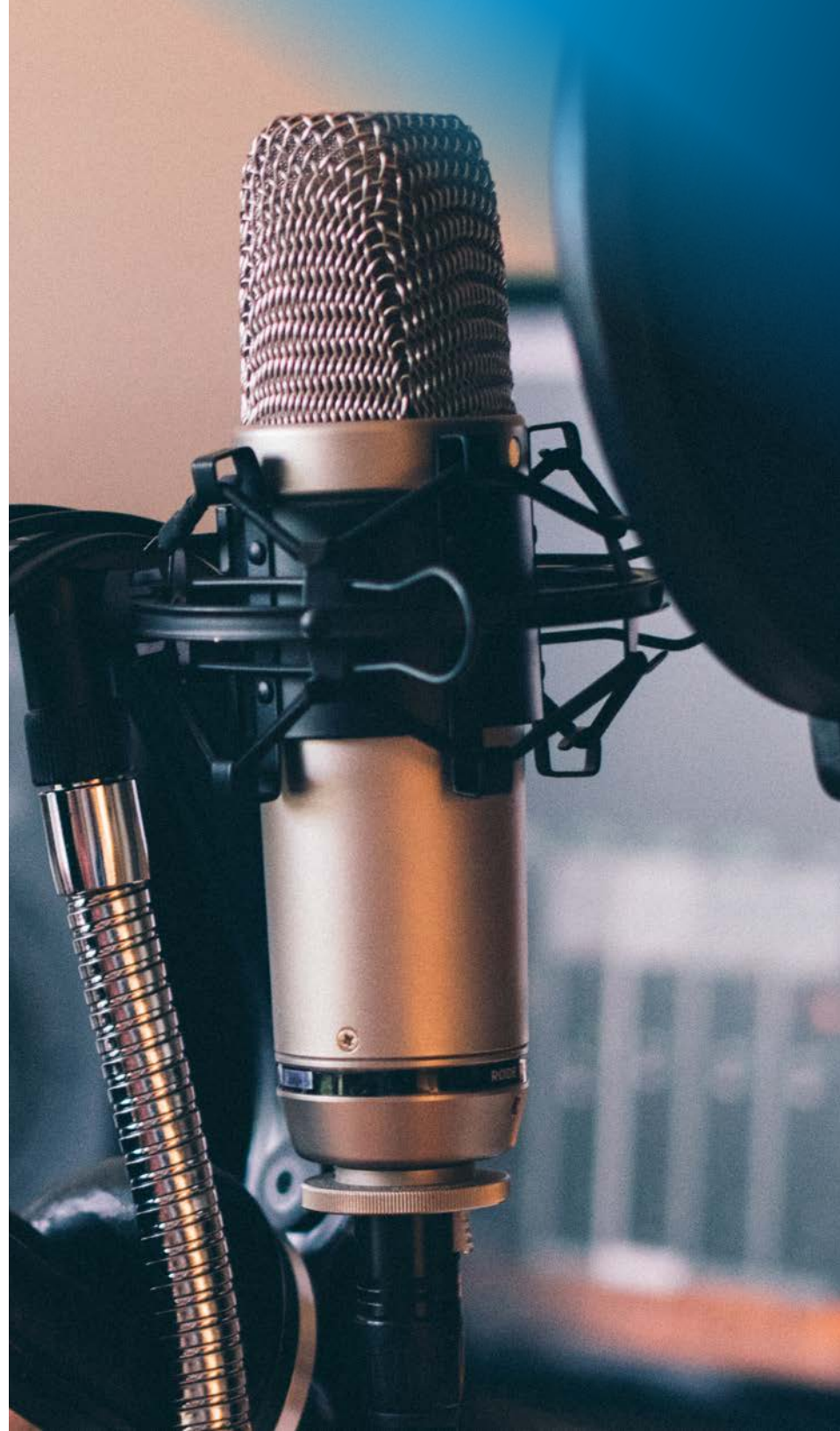
There was high demand for communications via a number of other channels, including leaflets (**24%**), TV adverts (**22%**), and physical newsletters (**18%**), community meetings (**10%**) and radio adverts (**10%**).

With no one clear preference, even amongst the different age groups, this highlights the need for a broad range of communications in order to provide as many people as possible with the opportunity to hear about exciting new smart city initiatives.

Having identified the ways in which people would like to receive information, it's also important to ensure they're receiving the right information.

When asked what would make them feel most at ease with the implementation of smart city technology where they live, nearly half of people (**49%**) said that they would like to receive communications from their local authority about new technologies before they are implemented.

Similarly, **48%** of people would like to hear from their local authority about the benefits of smart city technologies that are being implemented.



Importantly, **37%** of people would like to receive information from their local authority about how they are mitigating any potential risks related to the use of smart city tech, and **31%** of people would like to have the opportunity to voice their concerns about new technologies before they are deployed.

This again underlines the need for total transparency, in order to build people's trust in the technologies that will be playing an ever greater role in their lives.



Recommendations:

- Target younger audiences via social media channels – paid advertising could be used to help to improve reach
- Do not rely too much on one single communications channel, a wide range of marketing materials will ensure the greatest penetration
- Give people the opportunity to ask questions and raise potential issues prior to implementing new developments
- Clearly communicate the benefits, but also the mitigation of risks



CONCLUSION

While many cities across the UK have begun their smart city journey, our research shows that not enough people are aware of this fact.

A staggering number of people have never even heard of the concept, much less have an awareness of the developments in their nearest city.

While this is yet to cause any issues, as the technology becomes more intrinsic to city life over the next few years, and the data collected becomes more extensive, the trust and support of the public will be extremely important.

Without that, the success of the roll out of any technologies could be hindered, and local authorities could find themselves facing a backlash.

Our research has highlighted a number of ways in which people think their local cities could be improved, including tackling safety and security issues, easing mobility and, perhaps most crucially, responding to climate change.

However, the research also shows that people are not aware that smart city technology is among our best chances of making these improvements.

Really listening to people about what they would like to see changed and explaining via the correct channels how new technologies could affect those changes – as well as honestly and openly acknowledging risks and how they will be mitigated – should quickly see public awareness of and support for smart city initiatives increase across all age groups.



**MAKE THE
WORLD SEE**



Headquarters

Milestone Systems A/S Headquarters
Banemarksvej 50 C
DK-2605 Brøndby
Denmark
Telephone: +45 88 300 300

Any questions?

Please reach out to us if you
have any questions or inquiries.



For more information visit:
www.milestonesys.com