



Smart Places and Communities

Bringing together technology
and places that address
challenges in our communities

**A Scotland roundtable hosted
by Microsoft and Hitachi Solutions**



It was early on in Hitachi Solutions' 'Smart places and communities Scotland rountable' that a hard truth around the transformational potential of data analytics for local government became clear – knowing how and where even just to start is not always easy.

The virtual event was one of two held in the devolved nations in September (with the Welsh event available to be read in a separate report) and which brought together leading local government officers, Scottish Government, Microsoft, Hitachi Solutions and the pioneering South London Partnership. The two devolved nations' events followed a series of four physical and virtual roundtable discussions representing different parts of England held earlier in the spring.

All six events considered how 'smart', especially sensor-led, technologies are changing the ways in local authorities collect, use and share place-based and people-based data, with the scouring experience of the Covid-19 pandemic having accelerated both recognition of and demand for these new technologies.

Crucially, there is growing acceptance that better use, joining up and interrogation of data can enable councils to manage key delivery challenges, including around levelling up, community vulnerability, public health, the cost-of-living crisis and even climate change.

Martyn Wallace, the Scottish Local Government's chief digital officer, attended the event and gave an overview of his ambitions in this area – which we shall back come to. But the centrepiece was a panel discussion, chaired by former LGC (Local Government Chronicle) deputy editor Robin Latchem, where Scottish local authorities came together to share their experiences.

It was during this debate that it became clear that, while many Scottish councils are at an early stage yet on this digital transformation 'journey', their appetite to learn, collaborate and share best practice is immense.

As Alison Bonner of Clackmannanshire Council explained: "We're really just at the initial stage. We did some discovery workshops with our senior management team and we identified various problem areas where we thought IoT [Internet of Things] could address them.

"We have a small pilot testing CO2 monitors within schools. And we moved them over the summer into some of our main offices, to see what that would be like in an office environment in comparison," she added.

Stuart Kennedy, also from Clackmannanshire Council, agreed the council was still feeling its way. "I think we're in the same position as a lot of places. We are very new to this and trying to keep up with everyone else moving forward."



The council, he pointed out, had done some work around sensor-based monitoring for legionella, but was not now likely to take that forward. “Although at the outset it looked like there was going to be a huge saving from stopping people going round and manually checking temperatures, actually the cost to implement that across all of our buildings exceeds the cost of the software,” he said.

Julia McMurdie was poised [in October] to take up a new role as business renewal manager at North Ayrshire Council. This highlighted the importance the council was now giving to this area but that, also, it was early days yet. For her, the difficulty of articulating the cost versus the benefits of making an investment in this area was also key.

“It is interesting to hear that cost-benefit analysis question. How do you measure that when talking about lives being saved? But how can we deal with that, where can we get the funding?” she questioned.

“My role is really about learning from other councils and what we can do; learn from others and try and adopt some of those technologies,” she added.

Fife Council was further along on its digital journey, highlighted Craig Waddell, change and co-ordination service manager, with a series of strategic change programmes having been implemented over the past decade. But it was also still very much on a learning curve.

“Now we’re shifting our thoughts to ‘what next?’. So, we’re looking across five or six change schemes, which include things like people, place, digital, customer management and all the intersects between them. When it comes to the smart side of things – like smart places – we haven’t really scooped up all we were doing and labelled it as a ‘smart’ programme,” Mr Waddell pointed out.

“We’ve got some spot sensors we’ve had in place for years that can do ice alerts and central controls of our heating across our buildings. We’ve got 134 primary schools and 18 high schools, we could do with a little bit more control there.

“We have looked at [sensors for] legionella. We are also looking at bin sensors. We are probably at the start of looking at these things. We’d like to get more awareness,” he added.

“The past four or five years for me have just been trying to pull together that online, digital layer within the council,” agreed Lauren Forrest, the council’s change and redesign manager.

She highlighted how she was using her previous experience running the council’s contact centre to try to take digital transformation to the next level. “It is about using more of the data and insight, and even just getting basic things up like performance dashboards.

“And really getting buy-in across the council. It is also about us getting some of the use cases, so we can go back to the managers – we’ve struggled a bit with that,” Ms Forrest explained.

The discussion also brought in Sarah Ennett, Internet of Things manager at Digital Isle of Man, to expand on her experience and what, perhaps, councils across the water in Scotland could learn.

“We rolled out a nationwide LoRaWAN [low-power, wide area network] on the island because we thought, if we remove some of the difficulties and barriers, we might be able to encourage more people to trial solutions. I am surprised, however, that it hasn’t opened a floodgate of people saying, ‘let me try that’. We’ve had a few but not as many as I would have liked to think,” she said.

The challenges Lauren Forrest was facing around taking forward use cases in Fife was something she also recognised. “Because we have got eight separate legal entities for all of our different departments, the treasury department would say, ‘well if it is really going to help the air quality monitoring people, get them to bid for the money’. And that then becomes a very difficult and disjointed strategy. You are having to fight every month for different business cases.

“What I am keen to do now is to move from ‘talk and tech’, because I come from quite a techie background, into the benefit side of things. So we are rebranding to talk about ‘smart island’ rather than IoT. And that is the journey I am on at present,” Ms Ennett said.

Feeding the experience of the South London Partnership into the conversation, IoT programme manager Andrew Parsons agreed that justifying or articulating some of the return on investment and businesses cases for this type of technology is not easy.



“A lot of this you’re not going to be able to prove. What I would suggest, and what we have done quite successfully, is focus instead on asking for a time-limited amount of money. And almost propose that you do something for six, nine, 12 months, whatever you think it is that is appropriate. And learn from the results,” he advised.

Isle of Man’s Ms Ennett also highlighted the value of bringing in people with the right skills – both people skills as well as the technological know-how – to make this change ‘stick’.

“Skills is a big thing across the piece,” agreed Scottish Government’s Martyn Wallace, in conclusion. “It is not just about the technology and the business skills; it is actually the frontline skills to be able to interpret the data. There is a challenge about how do we educate the frontline staff or upskill digitally full stop, which we are still trying to tackle.

“It is about how do we give everybody that basic skills’ level to be confident, to start to think with data, to start to think with IoT sensors as well,” he added.

PANEL

The Scottish Government Perspective



Martyn Wallace
Chief Digital Officer
for Digital Office

A key element of Scottish Government's digital strategy is the development of '20-minute neighbourhoods', highlighted Martyn Wallace, chief digital officer, in his presentation to the Hitachi Solutions' 'Smart places and communities – Scotland' event.

These are neighbourhoods designed so residents can meet their day-to-day needs within a 20-minute walk of their home; through access to safe walking and cycling routes, or by public transport.

Alongside this, Scottish Government is recognising the absolutely vital importance of a strong digital economy as a driver of economic regeneration post Covid, and the need for digital to be at the heart of how government services enable that transformation and change.

Scottish Government had carried out some 27 'digital maturity' assessments across local government, and even the smallest councils were now beginning to move at pace, Mr Wallace argued.

"The first thing you need to consider is your assets," he said. "Where are your assets, what physical infrastructure have we got? What are the fleet vehicles doing? What are we doing with smart bins or smart lighting? Are they best placed to help with 20-minute neighbourhoods and place? Are assets for community centres ideal to get to?"

It is important within this to map out your technology assets, he advised. "What platforms have we got, what data can we get access to, what APIs [application programming interfaces] do we have to plug into? And how do we manage that? How are we utilising that whole asset base we've got across councils?"

You then need also to consider your collaboration partners, whether that be, say, private partners or other public sector partners, such as your local health board or, indeed, Scottish Government.

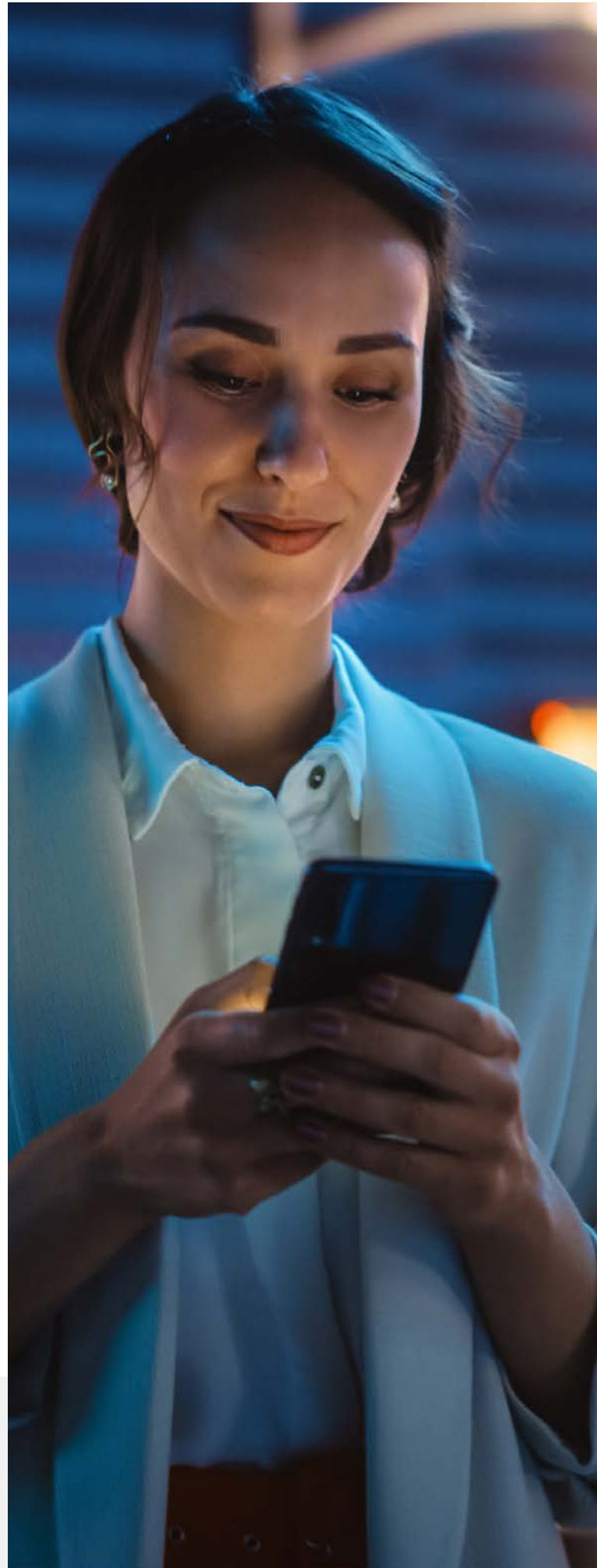
"What is key is looking at common platforms. It is not about having one platform for your IoT and another for your CRM. It is how do we maximise that across the piece? The more data you've got in, the more dynamic insights you've got to come out of the back of that to make your business better," said Mr Wallace.

Another vital consideration is how to bring your communities and employees along with you on this journey, he advised. “Who are your citizens? How do we serve them? What’s your CRM [customer relationship management system] saying? What’s your contact centre saying? What are the trends and analysis?”

“Fundamentally, it is about users first. This is going to be written on my T-shirt on my death bed; on my tombstone. It has to be ‘human by default’; technology and data by design – not the other way round,” he emphasised.

“It is about linking up knowledge management, case management, CRM, IoT, business intelligence, real-time data coming in from sensors, but also real-time data coming in from your staff,” he added.

Ultimately, it is about creating – and scaling up – a ‘data culture’ within your organisation, Mr Wallace concluded. “Data culture requires thinking differently. It is about thinking about service design. It is about upskilling staff. It is about looking at a national effort rather than trying to do things individually or on your own. It is about all accelerating together. Nobody is an island.”



PANEL 2

Digital has really come of age

The huge challenges currently facing local government – ageing populations, the cost-of-living crisis, the climate emergency, to name but three – all make the case for digital transformation even more compelling, argued Linda Chandler, UK smart places lead, Microsoft, at the Hitachi Solutions' event.

“I think digital has really come of age. In fact, I would go as far to say that we won't solve these problems without that digital layer,” she said.

She highlighted the British Standards Institute's definition of smart cities as being valuable: ‘the effective integration of physical, digital and human systems in the built environment to deliver sustainable, prosperous and inclusive future for its citizens’.

“We are now at the point where the technology is better, faster, cheaper. Now, one might argue, we have more societal acceptance of technology we can deploy it at a town scale or community scale. And that is, **I think, where we're seeing the real take-up and the real impact of this technology in people's daily lives,”** Ms Chandler said.

“There are so many supporting projects, change management, and organisational change and collaboration that needs to happen to really make and drive that outcome. So it is not just about the technology. The technology is the easy bit, the people is always harder,” she added.

The South London Partnership is a £4m, three-and-a-half-year testbed running IoT and sensor-based trials across the boroughs of Richmond upon Thames, Merton, Wandsworth, Croydon, Sutton, and Kingston upon Thames.

The partnership's Rebekah Brown highlighted the importance of being problem- or outcome-focused rather than simply all about the technology.

More than 3,000 sensors across the five boroughs are now monitoring gullies, culverts and flooding; parking, traffic and air quality; in-home and falls prevention of vulnerable people; fly tipping; footfall and usage of parks and retail centres; vacant properties, and much more.

And the outcomes, already, are compelling. Ms Brown highlighted the example of the partnership's vulnerable resident monitoring programme in Sutton. “One resident, Maureen, slipped and fell and was lying on the floor overnight.

“Because of the IoT sensor that in place it was alerted that there was a severe deviation from her daily normal pattern and it meant that the independent living officer could then escalate, and to the point where ambulance staff who attended said that, if she had been left for a few more hours, she might not have been with us today.”

On air pollution monitoring, she added: “We can look at air quality in real time, and we can look at the real levels that we see in our streets and how weather conditions affect things, not just on the main drags, as it were.”

Or on flooding prevention, gullies and culverts. “We’ve helped change services from being reactive, just going out to see if there’s been any flooding in the area, to being proactive,” Ms Brown said.

She also highlighted other successes. During the Wimbledon Championships fortnight, for example, sensors installed around Wimbledon town centre showed not only (as you might expect) a surge in day-to-day footfall but also that there was no discernible increase in NO2 levels.

This therefore suggested that initiatives to encourage people to use public transport to travel to and from the tournament had largely been successful.

Equally, sensors monitoring footfall in six public parks in Sutton during the heatwave this July had been able to show that, from the normal 4,000 people a day levels fell to a few hundred. “This showed people were heading the advice of the government and were taking common-sense protocols to keep out of the sun as well as walk at different times of the day,” said Ms Brown.

Sharing knowledge, learning and collaborating are all critical to accelerating this technological revolution, argued Tim Kidd, head of UK public sector at Hitachi Solutions, and closing the event. That made events such as the two in Scotland and Wales and the earlier four across England all the more important and valuable.

“We need to make more of the technology that people invest in. We need to make more of the investment that has already gone before,” he highlighted.



There needed to be more pooling and aggregating of data so it can more effectively overlaid; compared, contrasted and analysed. “If you have got it in one place, you can start to see a single view. Whether that is of a household, a family, an individual, their debt, an asset, whatever it might well be, it is the only way you start to get a true view,” said Mr Kidd.

It is ultimately about having a “single source of truth” that can be pushed out to lots of different parts of an organisation, he emphasised. “Once you have data doing stuff for you, the next level is to be having insight. To be able to act upon that data. But you do need staff to have that case management capability.

“There are some amazing things we’ve seen organisations start to do. A lot of this technology isn’t new – but it is just about having the know-how, the business case.

“It may not necessarily stack up to the complete ROI, but the key is that people know that it is the right thing. From there we can start to prove that this technology is really beneficial and being used in the right way,” Mr Kidd concluded.

The Hitachi Solutions Perspective



Tim Kidd
Head of Public Sector

The more and more we talk to organisations, as well as the installers and manufacturers of sensors themselves, the more use cases we become aware of. The more we see opportunities to improve services and the way they can be delivered. The more we see much-needed efficiencies being introduced. The more we see the opportunity for vast amounts of expensive and time-consuming manual handling that is taken out of the equation.

Like most technologies, this is an area evolving quickly. No sooner do we learn of a sensor type that can be applied in a particular scenario than another comes along that can do the job more efficiently, often in fact doing the job of multiple alternatives.

It stands to reason that understanding this fast-changing landscape – being ahead of how it is evolving and moving – needs to be good practice for any local government officer responsible for innovation or procurement. In truth, however, being aware of the power of data-led innovation and decision-making is something for all local government decision-makers. Moreover, as our reports show, it is about understanding not just the technology but recognising how the application and interrogation of that technology can deliver better, tangible outcomes on the ground for your communities.




We are already seeing an acceleration in IoT-specific roles being created within public sector organisations, which is welcome. But these roles cannot work, or deliver, in isolation. There is a critical requirement to educate and work with others – leaders, budget-holders, frontline teams, even end users out within your communities.

It is vital local authority service procurement grasps the opportunity to bake in sensor-based capabilities – to future-proof requirements rather than playing catch-up with costly retrofitting. We all know however that you can only change what you can measure. Therefore, an important part of this transformational process is ensuring you audit and catalogue – get a handle on – what is already in place or being used successfully, what isn't working, what is inactive but could yet better serve the organisation and community alike.


The result? Services that can understand the power of joined-up data can start to work interoperably; they can make use of cross-service boundary information; they can better run and redesign services. But it is so much more than that. Improved resident satisfaction. Political support. Healthier communities. More resilience to deal with the challenges all local authorities are facing – from the ‘tail’ of Covid through to the cost-of-living crisis. Even the ability – possibly, we all have to hope – to begin to mitigate the consequences of climate change.

Even more excitingly, these are just some of the surface benefits organisations that have already made this move are starting to see. There is so much more to come. We look forward to seeing more and more of you reap the benefits in future, too. For further information, please contact us [here](#) where our team of experts are on hand to support you on your journey.

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