Using people-centered data to remake cities and towns

Presentation by
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About the presentation:
Lucinda Hartley is an urban designer and serial entrepreneur who, along with her business partner Jessica Christiansen-Franks, has been leading the conversation on urban innovation globally for more than a decade. In 2017, the two launched Neighbourlytics, one of Australia's fastest growing urban-tech companies. The pair have held positions with the United Nations and the World Bank and were consecutive CEOs of award-winning placemaking consultancy CoDesign Studio. Their shared passion for putting people back at the centre of urban planning led them into data analytics. They're now developing world-leading technology to help city makers around the globe create cities that people love and feel connected to.

Lucinda Hartley:

Thanks very much, Denis, and this is really exciting to be here today. I am, like most of the speakers today, going to share my screen with you, and I'm excited to have a conversation today about cities and neighbourhoods but particularly what we've observed about cities and neighbourhoods during COVID, which I think is a whole new ballgame for all of us in that regard.

So I've titled the talk today *The New Local*, which kind of summarises a lot of what we have really been finding and observing when you think from a Neighbourlytics perspective about what's happened in cities, but to start that off as to what Neighbourlytics even is and what we're doing about data capture and cities, I want to ask you to think about your favourite place, and if you're in the chat, drop it in there. If you've got like a place that you love or feel connected to or somewhere that inspires you, perhaps somewhere that you've spent a lot of time recently, there's -.

But, you know, the places that we love and feel connected to have these really distinctive personalities about them. They're memorable and they're often incredibly human spaces rather than physical spaces. One of my favourite spaces is Preston Market. It's right close to where I live. This photo was taken pre-COVID, as you can probably see by how many people there are that aren't wearing masks in that photo, and what I love about this space is that physically it's actually just a bunch of sheds but it really comes to life by the traders and the people who go there.

And so when it comes to really understanding cities and where they are, a lot of it has to do with understanding this human side of neighbourhoods. So what we've really seen during COVID - and I'm just going to go back one second - is that - this is the same market just three months later, and I think views like this have been so common to our experience of neighbourhoods in the last six months, and it's heartbreaking to see in lots of ways, as the lifeblood has been sucked out of lots of places. But at the same time we're seeing these pockets of resilience emerge and how is it that some businesses, community organisations, are able to one day be a café and then, 48 hours later, they've completely pivoted, they are a grocery store and takeaway and delivery, which just takes extraordinary innovation and real resilience, and we've seen that really show up everywhere.

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But one of the places that that shows up is in the digital record about how businesses talk about themselves online, what their business registration is, what their offering is, and so there's things that we can start to quantify, which is really interesting.

One of the real perspectives that I'm sure many of you take but certainly from Neighbourlytics is back to the age-old quote now from Peter Drucker that if you can't measure it, you can't manage it. And when it comes to shaping places and communities, we typically tend to invest in things that we're able to measure. So, perhaps numbers of jobs, how fast the traffic is going, the new apartments sold, and those things are all important to do, but, if we're really only focusing on measuring how fast the traffic is going to go, then we're generally going to invest more in building more roads and trying to unblock traffic.

If we can quantify in the same way the things that perhaps have only historically been understood qualitatively, like community strengths and economic ecosystems, then we can start to have new datasets that help us to identify and prioritise change.

I have a quick poll question here to ask you, and I'm interested to know, first of all, because we're going to be talking about data in this presentation, how data mature you would suggest that your organisation is, and that could be either that you are considered to be data driven, so you have the exact data that you need to make a decision; that you're data informed, so data is a guide to help you optimise your performance; data inspired, so you use data but it's something that informs your otherwise professional judgment; or you are data aware, which might mean that you follow external research and best practices kind of in the market but generally they are things that you follow as trends and the decisions that you make are perhaps more based on expertise from your particular project.

So if you go to the poll tab, there is a poll up there, and it's not a loaded question. It's just I'm just curious to know whether you think that, on the sort of scale of data maturity - and there are different applications, I guess, for different types of data in different situations - whether you are data driven, data informed, data inspired or data aware. So if you want to jump into the poll tab, that would be something that we'd be keen to look at.

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Interesting. So far we're data inspired and data informed. And the reason, I guess, I put that poll up there is that we talk about data-driven decision making a lot, but often, I guess, sort of technically, we're not necessarily talking about being completely data driven in that we rely only on the data and the number to make a decision. It's that we're using data and a range of other experiential inputs that we have in terms of how we piece together the problem, and they're all valid approaches.

So, moving forward, one of the challenges that we have when it comes to measuring the human stuff (technical term) is that it's really hard, and I have no doubt that that is very similar to many of the organisations here and your experience in various ways. When it comes to looking at how we measure the human side of cities traditionally, there are pretty limited or fairly manual ways that we can do that. So we can look at the ABS or the Census information, which is useful as a record but it's only once every five years and it only tells us the story of who lives there, not who visits and uses and works in a neighbourhood, and I think the events of 2020 have shown us that perhaps 2016 data isn't necessarily the most up-do-date data source that we want to be thinking about for our very live decision making that we need on impacts of things like COVID-19.

Surveys, focus groups, observations, all fantastic methods, and I've spent many, many, many hours of my career doing all of these methods which we support. One of the challenges is, when it comes to really understanding things at a population scale, it can be really hard to get this kind of data if we're trying to, say, track change over time, do something every month. Just the cost and effort required is just too great.

So then, thinking about that differently, I guess the way that Neighbourlytics turns that problem on its head is using the everyday data that you and I generate by interacting with our neighbourhood every day as a new source of information that speaks to the behaviour and lifestyle of places. We call this social data, but I'm not talking about social media data and I'm not talking about personal data. This is data that's created from unconventional digital sources like think Google Maps, event ratings and reviews, check-ins, likes, and it's indicative of people's behaviour and lifestyle at a population scale. This data is generated worldwide everywhere across multiple platforms, and it's the fingerprints that we leave behind about the places we've been, what we value and interact with.

There's three types of this data and I just want to talk about them briefly because it underpins the case studies that I'm going to show you shortly. One of them is places data, so this is the things that we see and touch in the real world - parks, libraries, community centres, businesses - but when we look at that in the digital record where it's different from, say, a government business register is that it is crowd-sourced information, so you're going to either have this sort of colloquial map of the city - so platforms like Google Maps, even though we think of them as kind of a source of truth, the things that are on there are things that either have put themselves there or there are things that have a critical mass of activity around them and the internet recognises that as a place of interest and adds it in that way, and so there is this behavioural overtone to that data.

We can then look at activities and events, and this tells us what's going on, so not just what's there in the park but that the park is used by soccer clubs and parents' groups and has other events and activities going on. And then finally, we look at engagement and stories, which is user-generated information about how people interact with their place in an anonymised and aggregated way. So again, this isn't personal posts but it's publicly available information, such as blogs, photos, ratings and reviews, check-ins, that gives us what people value about that place.

Now, what's interesting when we look at the engagement and stories data is we tend to not see photos of people picking up the dry-cleaning, but we do seem to see photos of people having picnics with friends in the park, and there is that, I guess, strengths bias, that people want to show that they were somewhere, they were with someone, they were doing something.

So Neighbourlytics really mashes all of this data together to create kind of a master dataset that we can then use for future analysis. What that looks like is - if we just jump to somewhere like Piermont in Sydney, just as an example, we can see that it's got a physical space in the one hand, that it's got views and buildings and other spaces, and then, on the other hand, it's an incredibly social space. It has events and programs and a social life and a heartbeat, and we can see those things show up on the map.

Similarly, we can then look at how that place operates at different times of the day and days of the week and how it's different, perhaps, on a Thursday evening than it is on a Saturday morning because we know that we experience place in 24-hour time, not in static time. And then we can

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also understand values by what people interact with and share as the dominant themes and topics. So we're talking about behaviour here, not opinion and perception, so it's not what people like so much as what's valued in the sense of are parks more important than sport, more important than food and beverage, more important than hobbies in this particular neighbourhood. And I'll talk about some of these cases in a moment.

So understanding that one of the really interesting things - and while Neighbourlytics uses this data in a particularly unique way to understand place-based challenges and problems, we're definitely not unique in looking at this data, and MIT has been leading the research in this area for 20 years, and one of the things that they've really found is that this type of location data is up to five times more accurate than demographics when it comes to understanding and predicting behaviour.

An example of that that I sometimes look at is that, if you ask me in a survey how often I go to the gym, like my self-perceived perception of how fit I am, I'm likely to tell you what I want you to think about me or what my aspiration is for myself, when my cell phone is going to show that I only go once a week, perhaps, and so the location is actually a very good predictor of what we do.

And similarly when we are asking people surveys about what they like about their neighbourhood, they'll be very influenced about, you know, I like the market, I like the park, but my location's going to show whether I actually go there, and how places are used is a really strong predictor of behaviour and lifestyle.

So one of the really interesting things that we find about looking at a big data approach for place measurement is, when it comes to traditional information, we have a very linear approach. We're not anti-survey by any sense, but surveys, you get the information, you get the answers to the questions that you ask. One of the opportunities that you have with, I guess, a new data approach or more experimental data is that you can sort of look for those answers but you might actually find new trends and topics as well that uncover patterns and trends that you weren't necessarily aware of in that area.

So just looking at that more broadly, one analysis that we did with UN-Habitat looking at various different public spaces in Nairobi, we were able

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to use this approach to actually understand how places are used, particularly in areas like Kibera, which is one of the very large informal settlements in Nairobi which isn't on the formal land register so there isn't formally registered areas of public space and streets. It's just one area. And so when we look at the digital data, we can see that the CBD is incredibly dense. In fact, just an interesting fact here is Nairobi is, by a factor of three, the busiest city that we have ever measured. It has got three times more data than Singapore.

And if you've spent time in East Africa, that's not surprising, with its incredibly mobile economy. Phones are everywhere. Everything from how you pay for your shopping to everything is on your phone. So all of the DJs, all of the hawker, sort of street stalls, all have digital presence, and so it's incredibly dense. But interestingly what we find when we're looking at other things like Kibera is that we can see that we - like, we've got hairdressing studios and community centres and other destinations that are showing up in that land use.

I'm seeing a bunch of questions come through which I would love to talk about perhaps in the chat. These are, I think, really common questions that come up around how data is gathered and used and applied in that way. It's not data mining, but I'm very happy to talk to that, and I'm just finding that - because I think that'll that there'll be questions going through lots of people's minds around that.

So how do we apply this dataset to answer place-based challenges of various kinds, and so understanding that this information is available? There are two main frameworks, analytics frameworks that Neighbourlytics has developed to sit on top of this base dataset, and what we're really looking at is what makes great neighbourhoods. What do neighbourhoods need to have in order for people to thrive and prosper? And they need to have a solid wellbeing foundation so that you've got access to everything that you need to support your daily life, like schools and childcare and parks and services and also things like social connection and cultural life, and those things are quantifiable and score-based.

But then secondary to that, we have social life characteristics, because neighbourhoods are incredibly unique and, even though one neighbourhood might have a similar score to another perhaps in terms of its reasons to spend and stay or its, you know, spend there earn there are some of the economic measures that we look at, they will be very, very

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different in terms of their culture and their life and their behaviour, and so we can quantify these social life characteristics, which are things like the identity and character and diversity and vitality of places, which comes from more of our urban design principles, to understand the context about what's driving some of those factors.

And so we look at those in concert together. So how do we understand social prosperity in terms of economy, physical and community, and then how do we understand that in concert with the social life characteristics? And we'll see enormous variation within a walking distance catchment within an area. So we're really looking down at that sort of hyperlocal level.

So we've been working with this data for three years in various different ways around the world, particularly in Australia but also in a number of other contexts, and, based on that, it's building a really rich database of understanding what this data's really strong at, it's kind of source of truth, I guess, and how we understand it over time as well, and I noticed there were some comments about COVID-19 which I'm going to dive into now.

So one of the things that we've been particularly looking at in the last six months is how do we understand behaviour change through COVID and what does that mean for us in terms of thinking about recovery metrics and vulnerabilities and at-risk industries. And so the broader theme and transit we have observed across the data, particularly looking at Melbourne, Brisbane and Sydney over the last six months, has been what we would describe as a new local, and that's that on the one hand neighbourhoods have become more localised, and I think we all have a personal lived experience of that, particularly under lockdown, or even if it's less under lockdown, people still living and working more locally.

But they're also more digital, and so by that we mean not just that people are working from home but people are doing click and collect from the local library and that sporting clubs are doing Zoom sessions and that every local business and community organisation and smaller players has been, at some level, through a digital transformation like we haven't seen before. And it's based on that that I think we're actually seeing a new type of neighbourhood that is more digitally engaged and more locally connected, and that's actually quite a new kind of unit of ways of understanding cities in that way.

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So when we look across the - in this particular example, we're looking at the CBD areas of Melbourne, Sydney and Brisbane, although we have looked at many, many other data across the neighbourhoods, and I'm just really interested in that comment, Bambi, about nostalgia of neighbourhoods, because actually I almost think it's the opposite, is that the nostalgia of neighbourhoods and the local life is perhaps something that we previously understood. Now what we're seeing is the local living combined with this digital transformation, which makes it actually a quite different experience to what we might have seen from perhaps a nostalgic perspective.

So in terms of broader behavioural shifts, we've seen just like, say, on an activity, where is the activity happening in the city. This is comparing Sydney in January and April, where there's just a 90% drop in overall activity that's happening, but there's been a much less significant drop in places like Surry Hills, which have higher residential populations.

We can also use this to understand patterns of resilience, and this is looking at the whole of municipality data when we aggregate it right up for Moreland in Melbourne or for Parramatta in Sydney, and specifically this data in this particular diagram is cut through the indicators of opportunities to spend and stay. And so, what we see somewhere like Parramatta, it has large centres. So that larger dot down the bottom is Sydney Olympic Park, and we can also see those brighter patches around the Parramatta CBD. There are large destinations which are really important places, particularly in a pre-COVID environment, with large events that attract a lot of people.

But there's places like Brunswick, Brunswick East, Brunswick West, as you can see, the yellow being the Sydney Road on the left, there's actually more smaller opportunities in more parts of the neighbourhood which, in terms of being resilient to larger shocks and stressors such as we've seen in COVID, is actually one of the indicators we can look for for resilience.

So there are five thematic areas that we took a look at looking between Melbourne and Sydney and Brisbane over the last six months, and one of the impacts that COVID's had, it's made particular industries vulnerable. We say at-risk industries, like hospitality, creative industries, [inaudible] 00:21:41 and wellbeing and beauty, and when we say at-risk, yes, we know that particular businesses have been extremely vulnerable to lockdowns, but what that plays out at at a neighbourhood scale, if we look at

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somewhere like Lygon Street in Carlton, which its main economy is built on hospitality, then, in fact, the entire suburb is at risk because many of the reasons that people would go there might have been attracted first by the hospitality but it would then be to stay on and either visit other stores, community facilities, libraries, et cetera, which are all integrated. And so when one major dominant industry is affected like that, the whole neighbourhood, the economy, can really be impacted. And in other areas which are more mixed use, there may be more resilience in that regard.

In contrast to the at-risk industries, we also see certain assets, such as public spaces, which are more in demand, and I think, particularly for the Melburnians in the room, you'll know that there's been a lot of time and attention in public spaces over the last six months, and so that really shows up some of the, perhaps, fractures in our planning and our policies around public spaces. There are some neighbourhoods which have very good access and service to green space and others which don't.

So just to give you two quick key insights that came out of this data report - this is a free data report that you're very welcome to download from our website if it's something that's of interest to you - is nature is really the new attraction. With the activity centres and places like Preston Market really being less active during this time, it's nature, and I say nature specifically not green space and not all public space, because places like ovals and playgrounds and plazas and streets, which all make up part of our public space network, actually have had a lower data footprint over this time, while nature - people are really seeking out green space, and that's across all the cities but particularly exaggerated in Melbourne where there's actually, as of the September figures - this is May - a 238% increase in engagement with nature. Here it's 112. But what this tells us is that people - what neighbourhoods are really needing to be resilient in crisis is treed space, is green space, is space to get out, and it really highlights some different inequalities that exist in our cities around access to those particular types of public spaces.

It also has a big flow-on effect for things like property pricing and things like land use, and I know there's been big conversations. New South Wales has committed to making 50% of its golf courses back over to public space, and there's similar conversations in Victoria, as they're thinking about well what would it look like to reposition our cities to provide more natural space, as part of our - not just nice to have but part of our resilience strategy.

This study we did for the New South Wales government comparing a bunch of different neighbourhoods around their engagement with nature over the COVID period, and certainly what we could see is similarly - and it will be difficult to see on the screen there - but that nature across Wagga Wagga and Burwood and other suburbs of Sydney was certainly increased significantly during the COVID period, but this is one of the most dominant topics and themes.

The second insight I want to just touch on is hospitality and we've seen that there's been a huge increase in home cooking while a decrease in other food and drink, and again, anecdotally, we know these things to be true, but what happens when we quantify them is that we can see the extent of that change at a local level and what that means for particular industries, and when we're really looking at hospitality, what we can see is that some places - and I'm just comparing here just two examples - Station Street, Fairfield, if you know it, in Melbourne, and Lygon Street, but Fairfield is actually much more mixed use than Lygon Street, has higher diversity, which is one of the sort of social life characteristics we look at. And again this will be very small but, when we are looking at the diversity of place types, what we want to see is, if we have more diversity in terms of the industries, facilities, opportunities that that neighbourhood creates, it does offer more things to more people and can weather the storms more easily.

So just to close, I just want to go through actually, a case study of the New South Wales bushfires of how we've used this data in a case study applied with our customers in Sydney, and we've really been framing this around what we understand. This is only 12 months ago, which is just shocking to remember given everything else that's happened in 2020, but when it comes to - one of the things that I think is really interesting when we look at what the impact - one of the lessons that we can look at is what happened after Black Saturday 10 years ago, when we're thinking about bushfire recovery after the 2019/2020 fires.

And we had the opportunity in our last business to work on some projects after the Black Saturday bushfires, and there was a big approach, as there is now after the bushfires and as there is after COVID, around building back better. But is better always the most appropriate? And this example here is what happened in Daylesford, which had a very dramatic fire after Black Saturday, and there was a lot of investment put into new facilities such as this netball court, but seven years later when we were working

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with the council there, they were mostly playing in the dark without the lights on because the electricity was expensive. Everyone had to take their shoes off because they couldn't afford to buffer the floor that was required, and this very new, fancy centre, which seemed like a great asset, actually was too expensive to run, and the outdoor asphalt courts that were there previously were actually just fine.

And so sometimes understanding that local context can actually really help us tailor the response that's needed. And we compare that to somewhere like Kinglake, which had a very, very strong community response, community-led response, to Black Saturday, has also really helped with a really different and, I think, stronger recovery approach often with lower cost community-led initiatives.

When we're thinking about this for Sydney, and I'm going back to Piermont, just circling back - this is the last thing I will share today before we can jump into some discussion - the first thing is to establish a baseline. So we actually want to know what the place looked like before the fires, in this case, so that we can see what's actually changed, and again, like some of the case studies, we can see that it's dominant in hospitality and destinations.

We can then use comparison, either over time or compared to other neighbourhoods, to diagnose the issues in context. And so we were looking at a lot of different suburbs and neighbourhoods in Sydney and what we found is that the impact on outdoor dining in public spaces in Piermont was really extreme, as opposed to Bankstown where it actually had very different impacts, where it was other things like fitness and community facilities that were more impacted there.

And so when we're thinking about okay, well who's impacted by this hospitality and by dining and particular areas of Sydney that have now become - wasn't previously vulnerable but now very vulnerable because of this disaster - there are a range of business owners and others who use parks and public spaces that need to be brought into this conversation and then working with different partners, looking at ways that that could be alleviated, both through waiving outdoor permits but increasing cost and providing indoor spaces instead of outdoors to operate during that period, and then finally we can look at how we track that again over time. So we made some change - like, did waiving the outdoor permits, did making indoor facilities available actually shift the behaviour in life, so in

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that place, and what can we learn from that around understanding how to prioritise our budget investment and project decisions.

So they're two examples of how this kind of data has been used but certainly, as we think about what's not just a new normal but what a new local looks like, that we are seeing that cities are becoming both simultaneously more local and more digital and that does actually create a different world than we were previously in, and I would love to discuss some of those things with you and please feel free to reach out to us also at Neighbourlytics.

Thank you.

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