"Every smart-cities conference gets things backwards"

Renowned as the creator of the folding car and the micro-unit apartment, MIT professor Kent Larson's bold designs seek not only to revolutionize transportation and urban living, but radically **challenge our accepted ideas of how we plan our cities and organize our businesses**. And ultimately, Larson believes, thinking seriously about these issues should lead us to re-evaluate the role and relevance of ICT-based development itself.

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What are the key concepts for thinking about the future of transportation?

I see three ideas becoming more and more important – shared use, autonomy and electrification. More specifically, the combination of these concepts has huge potential to change the way we look at transport, both as a service and a business. I'm not a believer in Google's self-driving cars, which are just traditional automobiles converted to autonomy for highway use. As a concept it doesn't go far enough, and neither does the idea that simply running a car on electricity – rather than an internal-combustion engine – can somehow solve the fundamental problem of how people will get around quickly and effectively in the high-density urban environments in which most of us now live.

Instead, it's much more useful and exciting to combine these three ideas and create lightweight, electric vehicles that come to you when you need them, drive you wherever you want to go, and then move onto the next user, all while charging themselves inductively along the way. This is a simple but incredibly powerful idea. Compared to today's status quo, each vehicle can be highly utilized and won't sit idle taking up valuable space for 22 hours of the day. Users also won't have to deal with parking or maintenance or insurance. So you have a very strong value proposition both for the people who live in a city and for the city itself.

You have designed a range of folding cars. Where do they come into the picture?

In today's urban environments, it borders on insanity to devote so much space to storing vehicles – especially if they are largely unused. I designed the folding car to equal the width of a conventional car – you go nose-in to the curb and the car folds to occupy a parallel parking space perpendicular to the orientation of the regular car. So you can get three-and-a-half vehicles in a standard parking space. Given that an underground parking spot in Boston can cost around USD 100,000 a year, the financial arguments alone are pretty unassailable, even before considering how much space this approach frees up.

Even if transforming personal transportation is technically possible, are the real obstacles in fact cultural?

It's very true that, for many people, owning or driving their own car is an idea that's hard to give up. But the millennial generation looks at things quite differently, and young people today are fast moving away from individual ownership not only of cars, but of things like books, CDs and even houses. At this point it's still a relatively small percentage of the population as a whole, but there's a definite trend towards thinking of concepts such as personal mobility in terms of services you share with others, rather than something you own. This is a complex

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phenomenon with many contributing factors, but we could say that technical possibility is, in fact, changing our cultural preconceptions and expectations. When technology makes it easier and more convenient to share something, then it's natural that more people do so.

What other concepts are we starting to see as services for the first time?

One of the most fascinating concepts is space. Just like transportation, I am convinced that we will increasingly view space itself as a service that we share with others, especially in the business world. Historically, space sharing has always been a solution for small start-ups that can't afford long-term office rents, but larger companies are now discovering that space as a service not only reduces costs, but gives them greater flexibility and even helps them work better.

Instead of paying a fixed rent on a building that can become too big or too small for their needs almost overnight, many companies would love to be able to call up the equivalent of a telecom operator and say: "I need space for 50 more people next month." And when you have shared labs and cafes and meeting facilities, resources are more fully utilized, and people have new opportunities for creative encounters that encourage innovation. A truly creative company is always a community, and sharing space is a great way to tap into the benefits of community working and living.

One area of my current research is micro-units, which make city housing affordable for young people. The idea is to break down the boundary between residential and commercial property by integrating these units into a building with time-shifted shared spaces. During the day these spaces are meeting rooms or catering kitchens, and in the evenings the residents can use them for something else. So you can have a big dinner party even if you live in a micro-unit.

It's still at an early stage. But I think the message is that, however you look at it, the office parks to which you commute every day, work nine to five and then leave empty for the rest of the time will soon go the same way as the dinosaurs.

Are there socio-political consequences when we share transport, space and other things on a greater scale than ever before?

There will be implications – and I expect them to be positive. Data shows that diverse cities are the most innovative and that cultures that accept di-

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versity are more open to new ideas and ultimately more successful. There's a real value in mixing things up, and moving towards a sharing society, rather than an ownership society, will only enhance this.

On one hand, your work is about small apartments that function as if they were twice as big, and on the other hand, it is about large cities that function as if they were half as big. The common thread seems to be that space is very much a question of perception.
That's completely right – space is definitely what you make it. For example, high density in a city or a workplace is not necessarily correlated with poor quality of life or work. People in dense cities often have higher incomes; there are more organizations focused on science and technology and the arts; and the city has much lower energy and water consumption per capita. Similarly, density in an office building has a lot of positive aspects – people have more conversations, and they can easily exchange ideas. Most people feel more comfortable in a crowded, noisy restaurant than an empty one because there's more energy there, and that's true in many office environments too.

But if you do density badly, you end up with increased noise, congestion and pollution. Singapore and Hong Kong manage density pretty well, but Bangalore does it poorly. And just about everyone has experienced a workplace where the environment itself has actually made it harder to do their job. That's why a lot of my research looks at ways to foster the positive aspects of density without the negative ones.

In an internet age in which people are increasingly brought together digitally, how long will the city remain relevant?
If you can work as effectively on top of a mountain as in an office cubicle, then you should do so. But the reality is that humans are social animals, and we like being around other people. Urban environments are exciting places, and if we can do them well, without the negatives, then I firmly believe that cities will be the place of choice for many people for a long time to come.

ICT is clearly a disruptive force, but it isn't the only one. Do you see design and architecture as equally radical in their own way?
I think people in our time tend to overstate how disruptive ICT is. It is disruptive, but there have been many periods in history when things have changed as much, or even more, than today. Go back 100 years, when we were figuring out the possibilities of electricity and transitioning from horses to motorized vehicles – now that was a disruptive time. And I do believe that when it comes to cities, it's far more important to get questions of urban design, architecture and mobility right than ICT. If you don't get those basics correct, then it's very difficult for any other technology to truly improve, optimize and advance people's lives.

Just about every smart-city conference gets things backwards. I've attended so many of these events, and there's always this assumption that so-called smart-city technology can make a fundamental difference. I've come to realize that it actually delivers incremental changes, if any changes at all. The real disruption will only come when we start designing our cities around people, rather than around cars like we have done for far too long.

So are we making things too complicated?
Yes, I think so. I was recently in Rio de Janeiro, where the city authorities are working very hard to optimize various aspects of urban living. For example, they have built a control center that can monitor traffic patterns and fix jams before they get too big. The problem with this approach is that they are focusing on improving traffic flow by a few percentage points rather than looking at how to get rid of private car ownership. A truly disruptive strategy would look at creating fundamental shifts such as walkable cities, co-working facilities integrated with housing, and real diversity of people and enterprises. These ideas offer the possibility of profoundly changing people's lives for the better. ●

NICHOLAS SMITH

Background Check

▶ **KENT LARSON** directs the Changing Places research group at the MIT Media Lab, Cambridge, Massachusetts, US. He is also director of the MIT House_n Research Consortium and the MIT Living Labs initiative in the School of Architecture and Planning.

▶ **LARSON HAS PRACTICED** architecture in New York City since 1981 – in partnership with Peter L. Gluck from 1981 to 1995, and as Kent Larson Architects, PC since 1995. His firm has been selected as one of Architectural Digest's 100 Architects for Residential Design.

▶ **LARSON'S WORK HAS BEEN** published in Architectural Record, Progressive Architecture, Global Architecture, The New York Times, A+U, and Architectural Digest. His book *Louis I. Kahn: Unbuilt Masterworks* was selected as one of the Ten Best Books in Architecture in 2000 by the New York Times Review of Books.

▶ **FURTHER READING**
Kent Larson, TEDxBoston, September 2012, *From folding cars to robotic walls: 5 innovations to make future cities far more livable*

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