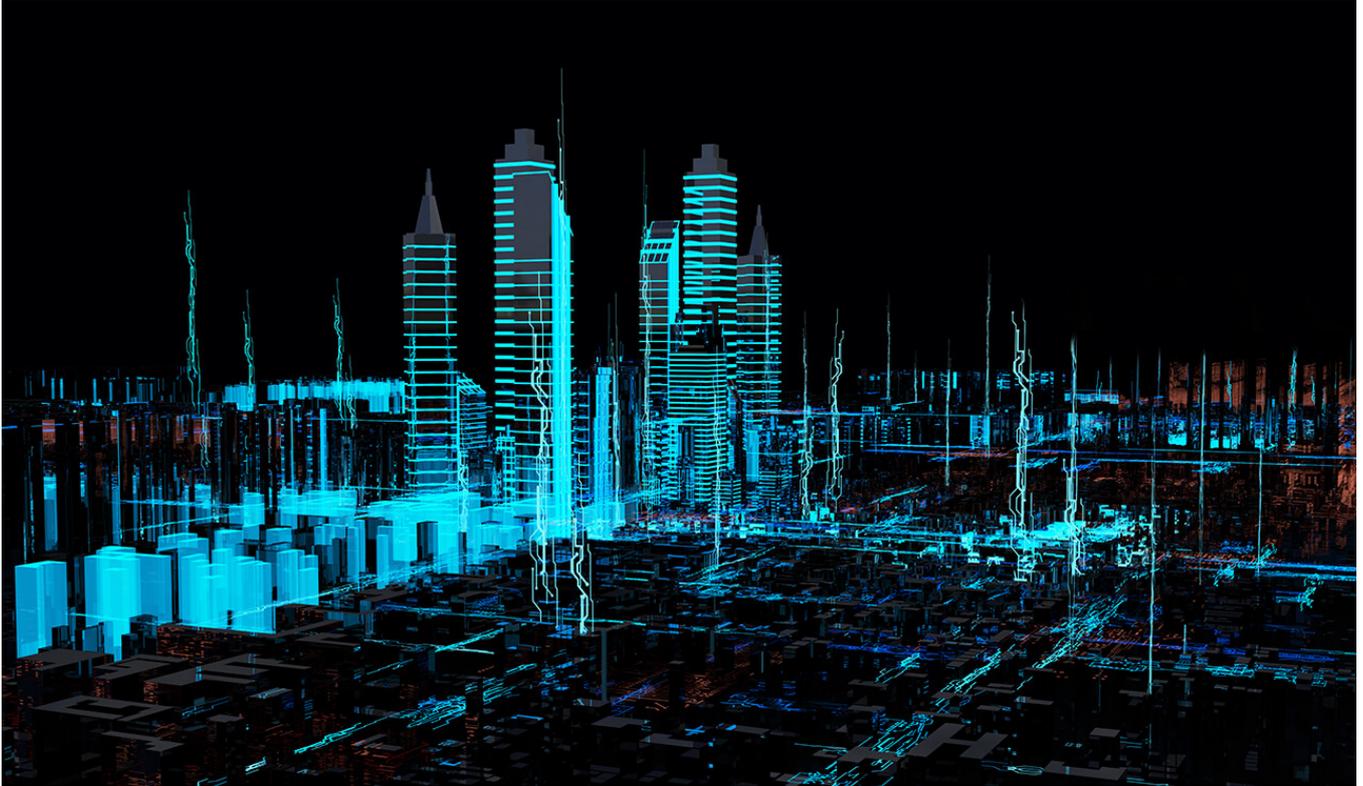


Digital twins make urban planning a lot less messy



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Spotted: Digital twin technology has been around for decades, but now urban planners, engineers and others are using the technology to problem solve city development projects before tearing up streets. Digital twins (in this context, virtual replicas of physical cities) work like sophisticated 3-D maps, but ones hooked up to real time data collected from the real world. Thanks to the Internet of Things (IoT), and falling technology costs, simulated cities can tap into huge amounts of data on things like traffic, people's movements, power systems, streetlights and the weather. Computers can use this data to build more realistic twins and then play out various what-if scenarios such as how a new streetlight would affect commuters.

A digital twin of Singapore serves as a perfect example. With software made by French firm [Dassault Systemes](#), a virtual Singapore uses real-time data such as traffic, demographic and climate information in a platform used by urban planners to test innovations. Several other companies are also working on digital twin simulation software, including [Cityzenith](#), [Siemens](#), [Microsoft](#) and [GE](#).

Takeaway: Digital twins of cities help planners, designers and engineers innovate and experiment with ways to improve peoples' lives without severely disrupting them. This kind of technology is particularly important as cities expand. Already more than [half of the world's population lives in urban areas](#), according to the United Nations. By 2050 that percentage is expected to reach 66 percent, putting enormous pressure on infrastructure like housing and sanitation, water and electricity. Any tools that guide planners toward cost-efficient sustainable solutions are welcome.

Historically, [urban mega projects](#) have run billions of dollars, affected millions of people and taken decades to complete, according to [Bent Flyvbjerg of Oxford University](#). Meanwhile, the vast majority of these projects are late, dramatically over budget, and fail to deliver what taxpayers were promised. Digital twins offer a glimmer of hope that things could be different.

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