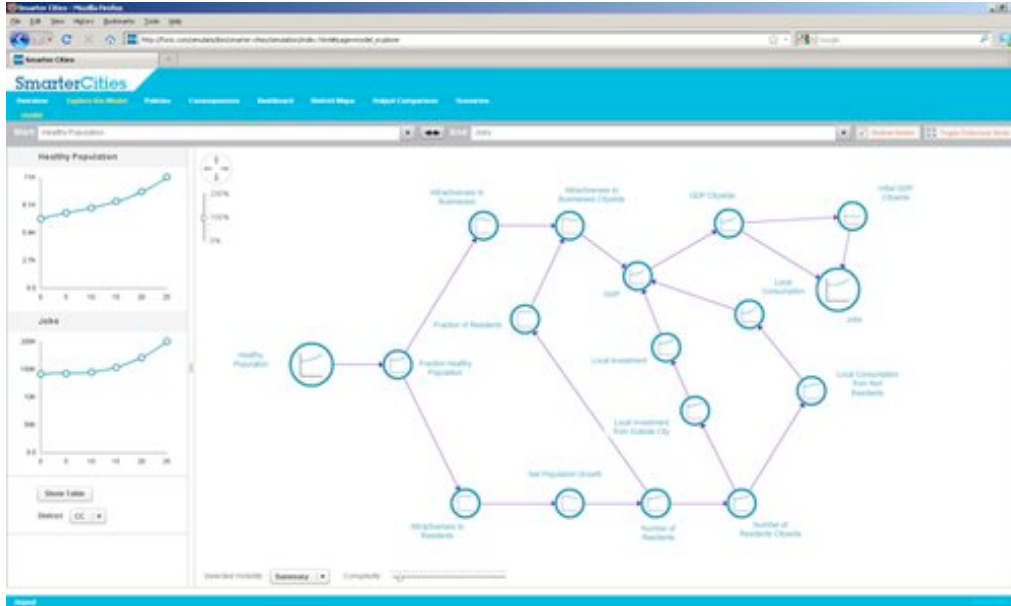


Portland Architecture

Apps and evolution: assessing how the city works



Screen shot of Portland Smarter Cities app (courtesy IBM)

BY BRIAN LIBBY

In Wednesday's *New York Times*, Mark Oppenheimer reviews a new book about applying evolutionary biology thinking and techniques to a small city: Binghamton, New York.

In "The Neighborhood Project," author and evolutionary biologist David Sloan Wilson describes his efforts and those of colleagues at Binghamton University to use evolutionary theory, along with data collection, to improve the quality of life in this economically challenged area. "The Project's activities included surveys of students, old people and members of religious groups; attempts to empower neighborhood activists; and competitions to design new parks for vacant lots," Oppenheimer reports.

For example, schoolchildren were given a Development Assessment Profile, which measures sociability, citizenship skills and the conditions that promote them. The project then connected the most trusting, socially-inclined students with a map of the city to see which neighborhoods, as Oppenheimer adds, "seemed to be breeding the most social capital."

"If every neighborhood had exactly the same mix" of "knives and solid citizens," Mr. Wilson writes, "then the map of the city would look like a flat plain. Instead, it looked like the Himalayas."

Most of the tools we use to measure societal behavior are relatively crude and are oriented towards crime or income levels. In addition, many of the conclusions we draw about which neighborhoods are safe, are entertaining or possess other qualities are based on stereotypes. Yet some obvious indicators were surprisingly accurate.

For example, Wilson and his team canvassed Binghamton neighborhoods on Halloween and Christmas to see which ones had the most most decorative lights. "On a clear night," Wilson writes, "I could probably measure it from an aerial photograph: the more nurturing neighborhoods actually glowed more brightly during the holiday season."

The central idea here, the one that makes this relevant for Portland as much as Binghamton, is that any habitat, be it of animals or humans, can survive and flourish when one sees its framework and interrelationships. Wilson, Oppenheimer writes, intends for his data to help the city address issues from prenatal and early-childhood care to high school graduation

rates to stress-related diseases and more.

Reading the article, it reminded me of a similar, if more technical than social, framework study currently underway in a partnership between the City of Portland and IBM. The tech company often known as "Big Blue" is fashioning what it calls an "app" but is actually a complex interactive model and simulation containing 3,000 equations to measure and identify relationships among the city's economy, housing, education, public safety, transportation, healthcare, utilities and government services. "The resulting computer simulation," IBM explains on its website, "allowed Portland's leaders to see how city systems work together, and in turn identify opportunities to become a smarter city." The model was built to support the development of metrics for the Portland Plan, the City's roadmap for the next 25 years.

Today our society has become more sophisticated than ever at turning what seem to be elusive, ephemeral bits of social data and arranging them into equations that determine what advertisements to place on our Facebook pages and Google searches. Just a tree's leaf reveals a pattern of veins identical to the pattern of branches emanating from the tree itself (otherwise known as fractal geometry), contemporary technology is awakening us to some of the interconnections amongst different segments of communities, professions, governments and cultures that we always intuitively knew existed but never could completely quantify. That a progressive city like Portland would be the first to sign up for IBM's Smarter Cities initiative is no surprise.

Even so, we must be mindful not to place too much importance on the results. As any pollster knows, answers often vary according to questions and assumptions. As Greg Lindsay writes in a recent *Fast Company* article about the IBM-Portland collaboration, not every problem or issue can be measured. For example, the program finds Corvallis to be one of the most innovative cities in America. But that's probably because Hewlett Packard's Advanced Products Division is based there, and produces many patents. In the IBM algorithm, patents equal innovation. But is this city of 55,000 people and almost as many fast-food franchises, one centered around a university that US News & World Report has routinely ranked in the lower tiers of America's higher education system, really innovative in the broader sense?

"West's conclusions are only as good as the data and the models (patents equal innovation) he has to work with," Lindsay writes. Even so, he adds, "This problem--if you can't measure it, you can't manage it--combined with the impulse to improve cities by models, is driving both IBM's 'smarter city' strategy and the nascent 'urban systems' movement, which seek to apply complexity science to cities."

Luckily the city is modest in its goals, seeking not so much one chart highlighting every connection perfectly, but to "shine a light on the biggest drivers of change," said Joe Zehnder, the city's chief planner, in Lindsay's article. The biggest area of application is sustainability, because of the city's commitment to a 40 percent decrease in carbon emissions by 2030. This necessitates fewer people in cars, and more walking and biking. This, however - as common sense tells us and the IBM program makes more definitive - can lead to falling obesity rates and, in turn, better overall health. Even so, Zehnder cautions, "the whole act of choosing variables is a political one, a value-laden one."

What we're ultimately talking about, be it in IBM's data or amongst the populace, is a kind of awareness. And to assist that effort, the nonprofit Dill Pickle Club may be as useful as Big Blue. Starting this Saturday and continuing through November are six hours examining public policy in the City of Portland, in order to foster civic engagement in a fun, interactive learning environment while providing a behind-the-scenes exploration of the vital functions that enable our city to operate.

The first such tour, slated for tomorrow (September 3) is called "Where Does Water Come From?" and is a daylong tour of the city's water supply including everything from the Bull Run watershed to the Bull Run vodka distillery. Upcoming tours include "How Is Justice Served?" on October 7, "How Is The City Planned?" on September 18, "How Is News Made" on October 28, "Where Does The Garbage Go?" on November 4, and "How Does The River Work?" on November 19. In each case, a variety of experts will be along for the ride to answer questions and explain what they do. It's not going to give any one visitor a comprehensive sense of the overall urban system and ecology in Portland, yet each person will have an arguably

more nuanced, human sense than Big Blue, for all the impressiveness of its algorithms, can still provide. After all, that's how we've evolved.

Posted by Brian Libby on September 02, 2011 | [Permalink](#)


TrackBack

TrackBack URL for this entry:

<http://www.typepad.com/services/trackback/6a00d8341c86d053ef01539140c681970b>

Listed below are links to weblogs that reference [Apps and evolution: assessing how the city works](#):

Comments

 You can follow this conversation by subscribing to the [comment feed](#) for this post.

Verify your Comment

Previewing your Comment

Posted by: |

This is only a preview. Your comment has not yet been posted.



Your comment could not be posted. Error type:

Your comment has been posted. [Post another comment](#)

The letters and numbers you entered did not match the image. Please try again.

As a final step before posting your comment, enter the letters and numbers you see in the image below. This prevents automated programs from posting comments.

Having trouble reading this image? [View an alternate.](#)

