



INTERVIEW

IN CONVERSATION WITH
JUDITH RODIN

Cities That Bend, Not Break

Dr Judith Rodin, a champion of resilience and impact investing, shares the ins and outs of adapting to social, political and economic disruptions. The former president of The Rockefeller Foundation shows how a systems approach can make all the difference when dealing with crises like the COVID-19 pandemic.



| Image: Judith Rodin



The COVID-19 pandemic has necessitated 24/7 cleaning operations on New York City's subway networks—the most aggressive in the history of the Metropolitan Transportation Authority.

Image: Marc A. Hermann / MTA New York City Transit / Flickr

|| Nations devote only a fraction of the resources spent on national security to prevent or prepare for health shocks, including pandemics.

||

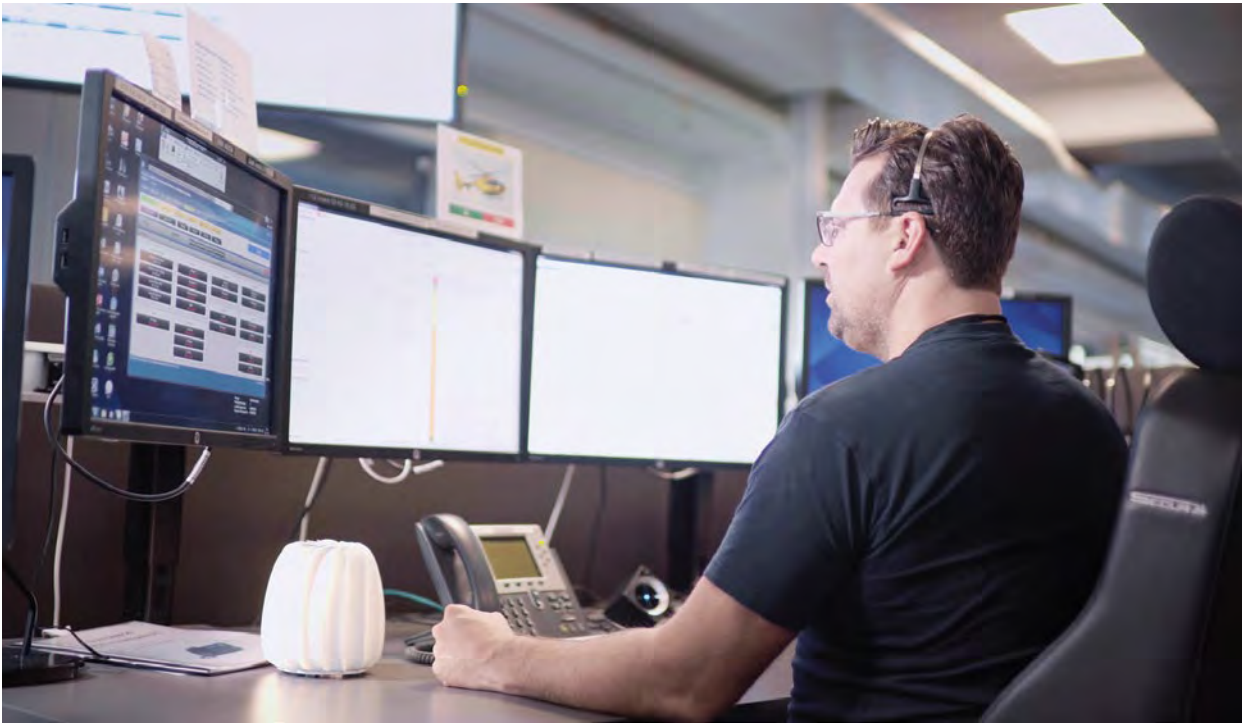
Your book, “The Resilience Dividend”, discusses how cities can build resilience to withstand the disruptions of climate change, urbanisation and globalisation. This was written in 2014. Since that time, have you observed any new or emergent disruptions to cities?

The most significant shocks since 2014 have been due to the surge in conflict-related immigration and its numerous consequences, and to pandemics, particularly those that are zoonotic, meaning animal-to-human transmission.

I will focus on the latter because we are living through one of epic proportions with COVID-19. A range of factors, including increasing population, economic globalisation, environmental degradation and increasing human interaction across the globe, are contributing to the changing dynamics of all diseases, but especially infectious diseases.

Yet, nations devote only a fraction of the resources spent on national security to prevent or prepare for health shocks, including pandemics. And, as we know, prevention and adequate preparation, as we are seeing in country-by-country differences in the epidemiology and rate of spread of the COVID-19 outbreak, are essential to being more resilient. Not only have we seen the impact of this on human health, but there is also the immense damage that pandemics and our efforts to respond to them can cause to economies at the macro level and to individuals' livelihoods and economic security.

This pandemic is still very much in flux and no country or city appeared adequately prepared in advance, but those that responded early and aggressively and were most nimble and adaptive will surely, when we have the benefit of hindsight, be those that come out of this with the outbreak under better control.



Copenhagen emergency dispatchers have help from Corti, a plug-and-play artificial intelligence (AI) assistant (housed in the glowing orb) that uses speech recognition and machine learning to analyse emergency calls, and to diagnose cardiac arrest situations more quickly.
Image: Corti

8

||
Cities that responded earliest to the COVID-19 outbreak used strategies from their already-developed resilience plans.
 ||

You have argued that disruptions are inevitable, while disasters are not. Which cities are at the forefront of adapting to disruptions?

Many cities around the world are innovating to prevent and prepare for disruption in their efforts to avoid shocks, and, happily, they are sharing their ideas and successes. In relation to the COVID-19 outbreak, there were cities who responded earliest; in the US for example, San Francisco, who used strategies from their already-developed resilience plan, such as having integrated data sets. This allowed quick decision making, well-rehearsed action plans among first responders and a mandate to focus early on the most vulnerable populations. Los Angeles has launched a cross-sector virtual laboratory to promote innovation in cybersecurity, a particularly critical issue even as an acceleration of cybercrime activities has been observed during the COVID-19 outbreak.

Other non-COVID-19 examples include Cool Neighborhoods NYC, where the city combines physical infrastructure such as green infrastructure and cool roofs with efforts to promote communication and social cohesion, such as a buddy system to check on vulnerable residents. Together these approaches will protect New Yorkers from the potentially catastrophic effects of extreme heat.

Surat is dynamically mapping climate trends and integrating them with multi-hazard planning through Geographic Information System analysis. Adding the use of machine learning to integrate more sources of data will, here and elsewhere, dramatically increase their capability for robust planning and responding in real-time to emergencies. These are only a few of the hundreds of activities we are seeing worldwide.

Technology on its own is not a panacea. How can cities apply technology effectively to build resilience?

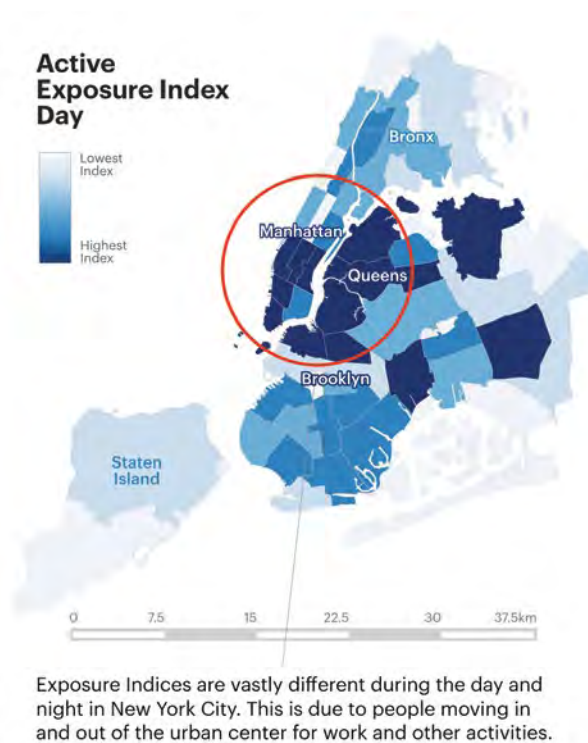
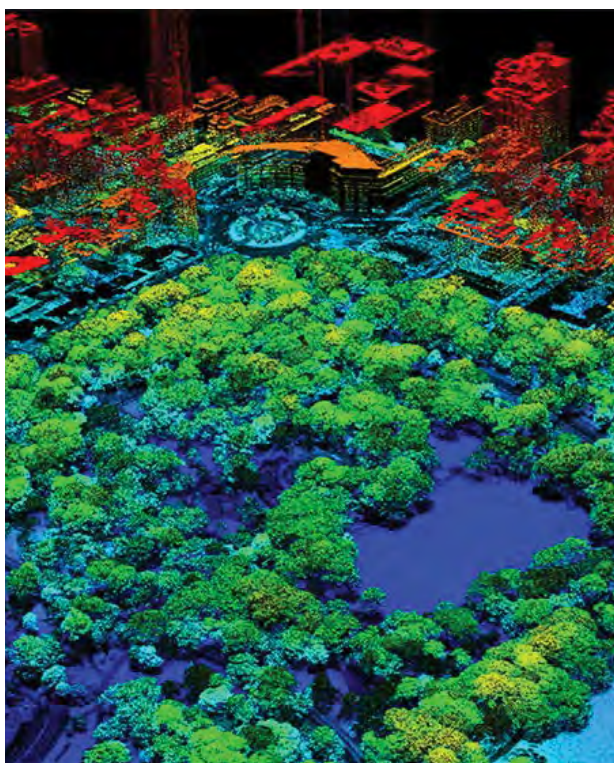
Building resilience through technology requires strategic investments in digital security, including developing a standardised and synchronised system and a risk management framework that addresses vulnerabilities and impacts holistically and dynamically to enable both planning and real-time decision making.

Machine learning, for instance, enables the integration and interpretation of massive amounts of data that the government can use, including to target and predict vulnerability from scarce or unevenly distributed resources.

In transportation, sensors can be used in roadways, streetlights and transit to monitor and inform about the availability of parking places. In buildings, automation and optimisation of energy usage can be applied to ventilation and lighting, as well as for fire detection and intelligent extinguishing and controlling access.

Through smart technology adoption, economic resilience grows as people attend job training or retraining for jobs such as software development or information security, which are typically high paying jobs.

Social resilience grows as citizens more readily connect to government initiatives and programmes, offer input to government planning, and connect to one another, often through public Wi-Fi.



Digital mapping by Spatial Analysis Laboratory shows canopy tree coverage in New York's Central Park and Columbus Circle, while research by MIT using cellular network data reveals where and when New Yorkers are most at risk of exposure to air pollution.
Image: University of Vermont Spatial Analysis Laboratory; MIT Sensable City Lab.



Problems on the ground do not sit in isolated packages. They are deeply interconnected and it often takes stress or shock to reveal the full extent of the interconnection.



How does a systems approach help cities develop resilience?

Problems on the ground do not sit in isolated packages. They exist in an interacting system of variables that can impact their occurrence in calm times and, to a magnified extent, when shocks occur. In other words, they are typically deeply interconnected, although it often takes stress or shock to reveal the full extent of the interconnection.

Think of New Orleans after Hurricane Katrina. The hurricane itself caused massive flooding and high winds. But these shocks attacked vulnerabilities in the dykes and exposed the impact of years of massive watershed erosion on the riverbanks. The flooding, in turn, washed over the lowest lying areas where the poorest and most vulnerable people lived, exposing social and economic inequities that had been decades in the making. Systemic racism determined who received help the quickest and where they were sent. These are just a few of the factors that interacted in the overall system that caused that particular catastrophe.

A city's resilience serves to safeguard its residents' health, livelihoods and overall quality of life. How might individuals and communities get more involved in building resilience?

Social resilience focuses on basic needs like livelihoods and on the actions needed to protect and strengthen communities. And, while physical and ecological resilience are essential, cities cannot become fully resilient without focusing on the social fabric that knits us together or tears us apart.

For example, a public transportation system can be a key feature of community resilience if it intentionally connects diverse communities, enhancing social cohesion and easing travel for poor and vulnerable populations.

Such was the case in Medellín, Colombia, which had confronted decades of drug trafficking, crime, and homicide. Medellín underwent an incredible revitalisation by building transit systems that link the poorest and most vulnerable communities to the economic and social core of the city using a “gondola” system and hillside escalators.

Communities also need to develop ways to become nimbler and more adaptive. For example, San Francisco is developing networks that link their sharing economy companies to local communities throughout the city. The goal is to help communities more easily access what these companies are based on—the excess supply of goods, services, and space.

Airbnb could identify neighbours who have extra shelter to displaced residents who need it. Yerdle could help receive and redistribute donated items. Task Rabbit could call up volunteers willing to assist in clearing debris or restoration and rebuilding efforts. With these online networks in communities in place, the transition from everyday business to post-disruption operation can be seamless, enabling a much more nimble and flexible response.



Non-governmental organisations (NGOs) and volunteers played a crucial role in rebuilding homes and communities in New Orleans after Hurricane Katrina.
Image: Corporation for National and Community Service Photo



Installation of affordable solar solutions for residents in upstate New York in progress.
Image: Stephen Yang / The Solutions Project / Flickr

||

In 2019, 477 investors holding US\$34 trillion in assets demanded action to meet the goals of the Paris Agreement on climate change.

||

Financing is often a big barrier for cities' resilience efforts. What approaches to financing resilience have you seen that really worked?

Innovation is flourishing, creating new tools using private capital to meet social and environmental goals, while generating competitive financial returns for investors. Most people in the field call this “sustainable and impact investing”, a broad tent of strategies that ranges from investing in established companies that are working to address the impact of their operations to those that have been set up with the explicit purpose of solving a social or environmental problem.

Groups of investors with considerable financial clout, for instance, are emerging on the impact landscape. In 2019, 477 investors holding US\$34 trillion (S\$47.2 trillion) in assets demanded action to meet the goals of the Paris Agreement on climate change, with some of them emerging as vocal leaders, particularly in Europe and Japan.

In Europe, a coalition of investors, including those managing more than €550 billion (S\$865.04 billion) in Dutch pension assets, has committed to use the United Nations’ Sustainable Development Goals (SDGs) as the framework for a growing amount of their investments.

Meanwhile, problem solvers, like non-governmental organisations (NGOs), are becoming increasingly financially savvy. In July 2019, for example, The Nature Conservancy acquired 253,000 acres (1,023.85 km²) of working forest land in the Central Appalachian coalfields of Kentucky, Tennessee, and Virginia, using a US\$130 million (S\$180.48 million) investment fund. It is based on a new financial model.



Green Bonds are helping to support efforts to expand the success of TransMilenio, a bus rapid transit system, for cleaner urban transit in Colombia.
Image: momentcaptured1 / Flickr



Women training for solar engineering near Jaipur, India.
 Image: UN Women / Gaganjit Singh / Flickr

On this land, The Nature Conservancy will implement preservation activities, sustainable timber management and economic development initiatives that enable communities living there to move away from mining to other sources of income. Investors will be repaid from the revenue generated through sales of carbon offsets and certified sustainable timber, as well as the sale of the land at the end of the investment period.

At a local city level, new types of municipal bonds have demonstrated the ability for fixed-income instruments to raise funds to drive economic and sustainable development. In 2017, for example, the Massachusetts Bay Transit Authority announced that it would issue about US\$574 million (S\$796.83 million) in tax-exempt sustainability bonds designed to finance the provision of essential services and affordable infrastructure, health and safety improvements, and other projects with measurable socio-economic benefits.

Meanwhile, development bank bonds—high-grade debt issued by the World Bank Group and other development banks and dedicated to social and environmental impact—have shown how impact investment can work in emerging markets. In February 2020, for example, the World Bank Group's International Bank for Reconstruction and Development (IBRD), which issues bonds so it can lend to middle-income and low-income countries, raised £1.75 billion (S\$3.07 billion) from more than 100 international investors. It was the largest sterling-denominated bond issued by a supranational.

The bank will use the funds to support its sustainable development activities, ranging from improving global healthcare, nutrition, childhood development and education to empowering society's most vulnerable groups, including women and poor in rural areas.



Crews work to restore the beach at Coney Island in New York City and replace sand loss caused by Hurricane Sandy.
Image: US Army Corps of Engineers / Flickr



Safe, but together—circles drawn on the lawn of Domino Park, New York, to encourage social distancing as the city reopens amidst the COVID-19 pandemic.
Image: @amanda.dombrowski



A city is an entity that is flexible. It bends rather than breaks. And its adaptive capacities are exactly what we must develop, whether as individual citizens, governments or community institutions.



Building resilience requires planning over the medium- and long-term. How does the need for consistent, long-term governance square with city mayors' often short-term political lifespans?

In The Rockefeller Foundation's work at "100 Resilient Cities", we have seen very little loss of momentum when a new mayor, even from another party, takes over. This was evidenced earliest in Medellín but it has been pretty consistent globally. We believe it is the result of the large scale, deliberate engagement of all sectors—government, business, community leaders, civil society, academia and the media—early in the resilience planning process and during the development of a city resilience strategy. The amount of shared ownership and commitment puts pressure on a city to continue the work. Certainly the existence of a chief resilience officer also helps in the likelihood of continuity as does participation in various global networks of cities all committed to some aspects of resilience-building.

A city is an entity that is flexible. It bends rather than breaks. And its adaptive capacities are exactly what we must develop, whether as individual citizens, governments or community institutions. 