

## Softening the Effects of Future Shocks

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Rather than live dangerously and react only after disaster strikes, Singapore believes problems of the future ought to be tackled now.

The effects of future shocks can be mitigated by building expertise to prepare and plan for trouble well before it comes.

The civil service made a head start on dealing with complex issues more than 20 years ago by setting up the Scenario Planning Office. Its officers planned for the unthinkable problems that could affect Singapore.

In 2010, the Government formed a Strategic Futures Network involving deputy secretaries from all ministries, as part of efforts to anticipate and deal with unexpected problems.

Government units now tackle everything from climate change to population issues in a coordinated way. No fewer than four research centres have been created as well.

The newest is the Complexity Institute set up by Nanyang Technological University this year.

The institute is headed by Professor Steve Lansing, an anthropologist, and Professor Peter Sloot, a computer scientist.

It will work with sociologists, computation scientists and psychologists, among others, in other universities and research bodies in Singapore. It will do inter-disciplinary work in complexity science to look for hidden connections between seemingly unrelated problems. Researchers will identify and aim to understand underlying factors that drive many of the world's issues on urbanisation, energy shortage, terrorism and the impact of technology on society.

Failure on the part of governments and people to see connections between problems can lead to decision-making that creates even bigger problems.

Dutch-born physicist Jan Wouter Vasbinder, who helped set up the institute, says a complex system contains many individual parts, and when these parts interact, new phenomena emerge.

You see this happening in traffic jams, food crises or a stock market crash. For example, the 2000 stock market crash that resulted in Wall Street losing US\$8 trillion of wealth is said by market experts to have been caused by corporate corruption and the dot.com bubble bursting, among other factors. Or take the insecticide DDT, which was effective in the war against malaria but proved lethal to the environment. Solving one problem led to the creation of a new one.

Mr Vasbinder, whose expertise is in helping organisations develop their strategies for the future, says complex problems cannot be solved but they can be dealt with.

"A top-down approach is often not the best way because that tends to overlook the hidden connections between parts of the system," he says.

He sees complexity science at work all the time, even in the political arena. He thinks Singapore voters have begun sending signals to the Government that change and new pathways are needed.

The fall in support for the ruling People's Action Party in the 2011 General Election, the angry reactions to policies allowing more foreigners into Singapore and expressions of frustration with public transport congestion and train breakdowns were symptoms of complex problems, he said. They show how individual, separate issues can interact and lead to unexpected outcomes.

Knowing that, policymakers who gain a better understanding of what problems are about can craft policies that not only address the issues but also take into account people's concerns.

The creation of the Complexity Institute complements the setting up of the Social Lab last year at the Institute of Policy Studies to study how social perceptions, attitudes and behaviours will evolve in future.

Research on demographic trends and the way society adapts to changes will shed light on changing social attitudes, says Dr Tan Ern Ser, a sociologist who heads the lab. His eight-person team will conduct a long-term longitudinal study of 5,000 households to track changes in the lives of the same people over time.

The two research centres are the most recent efforts by Singapore to tackle complexity and stay focused on the future.

In 2004, the Government set up the Risk Assessment and Horizon Scanning programme as part of the National Security Coordination Secretariat at the Prime Minister's Office (PMO).

And in 2009, the Centre for Strategic Futures (CSF) was started at the Public Service Division of the PMO. Its researchers analyse problems to detect future trends in governance, food sources and economic survival, among others.

To study problems, researchers seek a diversity of ideas during discussions.

"People who think about the future tend to congregate with others who do the same. Failure in foresight is usually because of insufficient diversity," the centre said last year in its publication for a foresight conference.

Writing in The Straits Times last month, former civil service chief and senior adviser to the CSF Peter Ho said tackling the problems of complexity calls for breaking down organisational silos so common in bureaucracies.

A "whole of government approach" has become a government priority in tackling large multi-faceted issues, he wrote.

Coordinating bodies have been set up to deal with cross-cutting strategic issues, such as the National Security Coordination Secretariat, the National Climate Change Secretariat and the National Population and Talent Division. Mr Ho said the Our Singapore Conversation series

of more than 600 dialogues involving nearly 50,000 participants could be thought of as a "whole of nation" approach to surfacing insights from citizens for the Government.

And that, too, is tackling complexity head-on.