World Bank Group Report Launch:
Financial Protection of Critical Infrastructure Services

IGNITE PRESENTATIONS

Singapore Disaster REsilience Assessment, Modelling, and INnovation (DREAMIN') project
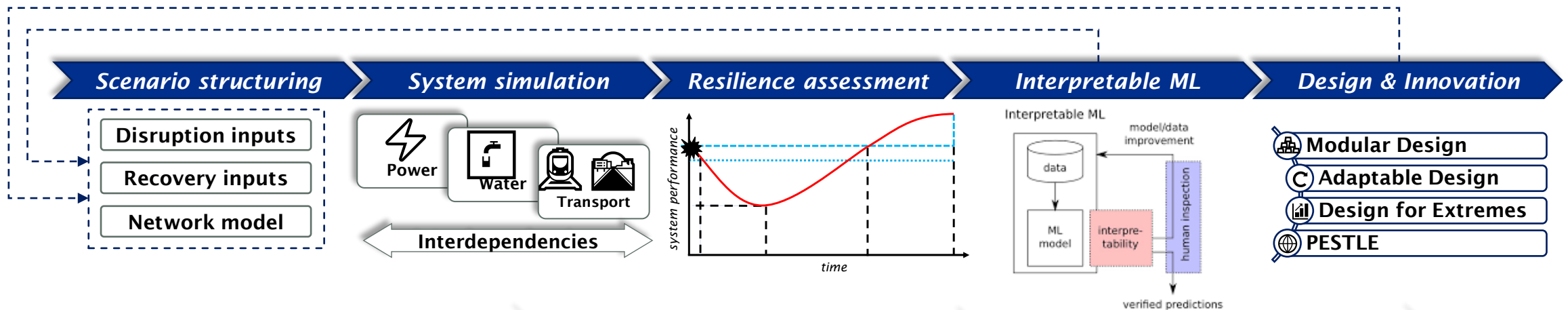
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DREAMIN' SG - Disaster REsilience Assessment, Modelling, & INnovation Singapore

- **Goal**: To develop a *predictive tool of resilience* using system modelling and Machine Learning (ML)

- **Overview of methods:**

| Scenario structuring | System simulation | Resilience assessment | Interpretable ML | Design & Innovation |

- **Expected outcomes**:

(1) Simulation platform for the interdependent infrastructure

to be used to evaluate infrastructure risks and test recovery strategies

(2) Resilience prediction and analysis model

to be used to predict the resilience output given scenario inputs

(3) Novel system concepts

including solution directions to increase and maintain resilience

- **Future research:** To develop a framework and associated tools to quantify the *indirect economic losses due to infrastructure disruptions*

A recent example

Power outages, water shortages as Texas shivers

'Emergency': How a winter storm and power outages plunged Texas into crisis

Texas winter storm blackouts hit chip production

Transport Network

Power Grid

Water Distribution System

Figure courtesy of Hans R Heinimann