



DISTRIBUTED DATA-SHARING for FAST RESPONSE and DECISION SUPPORT

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ASEAN EAGER, FY2020**

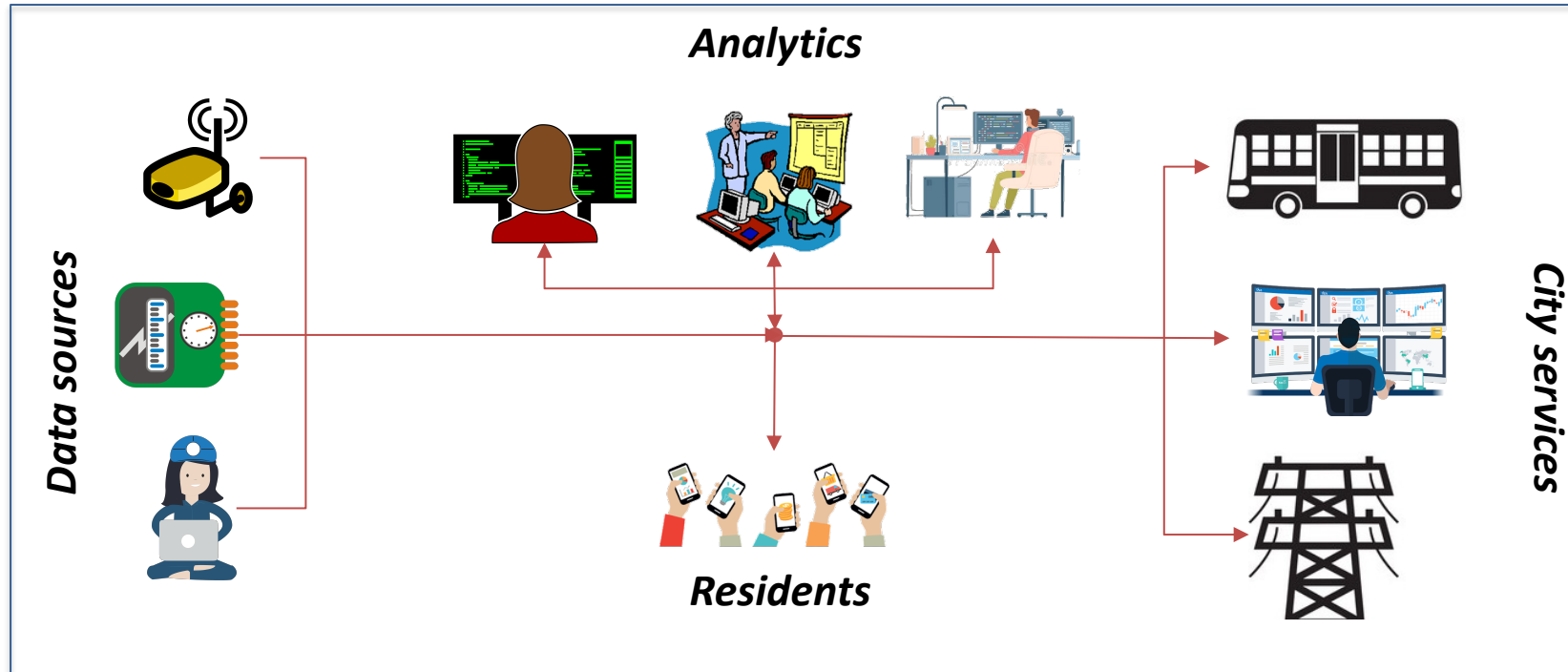
Principal Research Investigators (Name, Institution)

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Community Partners (Name, Institution)

- Khoi Dao, VNU Univ. of Natural Sciences
- Phung Nguyen, HCM City Dept. of Science and Technology
- Ly Le, VNU International University

Project Overview



- A distributed (peer-to-peer) data network infrastructure for multiple stakeholders to securely collect and collaborate on data.
- System brings data and expertise together for timely emergency alert and response.

- Pilot in Ho Chi Minh City, Vietnam, to address urban flooding.
- Information provided is slated to support city resources and services planning, and underpins a Flood Watch app for residents.

Project Overview

Use-Inspired Research

ASEAN metropolises, e.g., HCMC, suffer from lack of urban planning and streamlined city governance. These issues exacerbate disruptions from extreme events such as weather and emergencies. Timely, coordinated, and competent data sharing and analytics can alleviate infrastructure and organizational challenges.

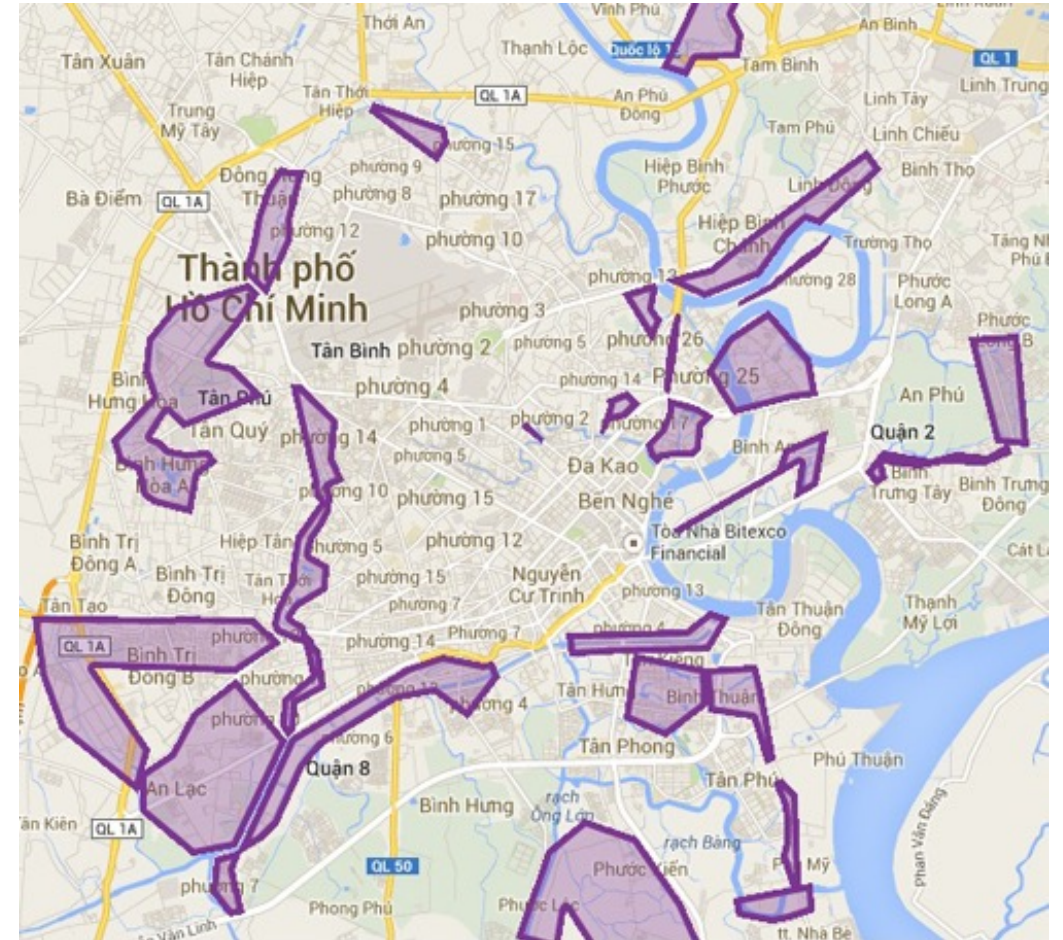
Issues faced by HCMC exist in the US, only at a more exaggerated scale and scope, which provides opportunities for use-inspired research

Fundamental Research Contributions

- Technical:
 - Approaches for data network reliability and security in ad-hoc/dynamic infrastructure
 - Identity and access management in the context of weak level-of-assurance
- Social: Technology uptake and scaling in government agencies and among residents

Project Update

- Software stack installation and testing
- Training on grid computing and networking
- Develop taxonomy of local network topology/architecture
- Identify stakeholders and key data sources
- Design hybrid data architecture based on local network and stakeholders
- Gather design specs for the resident *Flood Watch* mobile application



Project Evolution

We learned that while our partner is the Department of Science and Technology, which is tasked with leading HCMC's smart city effort, new solutions must go through independent demonstration and evaluation processes in order to be adopted by different city agencies. Therefore, we are planning a demonstration workshop in the Summer of 2021 to demonstrate the utility of our approach to the different city groups.

We also learned that a *simplified* mobile application informing residents of the status of a disruptive event (e.g., flooding, power outages) is desirable. We are in the process of developing this application.

Anticipated outcomes & success measures for next year

- **Smart City data infrastructure workshop (Summer 2021):** *This workshop describes a distributed infrastructure for secured data sharing. We will also demonstrate utility of this data infrastructure for various city services.*
- **HCMC Flood Watch mobile application:** This simplified mobile app allows residents to access the most up-to-date flooding information via a visual map interface.