DELPHI

Data e-Platform to Leverage Multilevel Personal Health Information

Problem

- Health data are multi-layered:
  An individual's health is affected by many factors across different layers

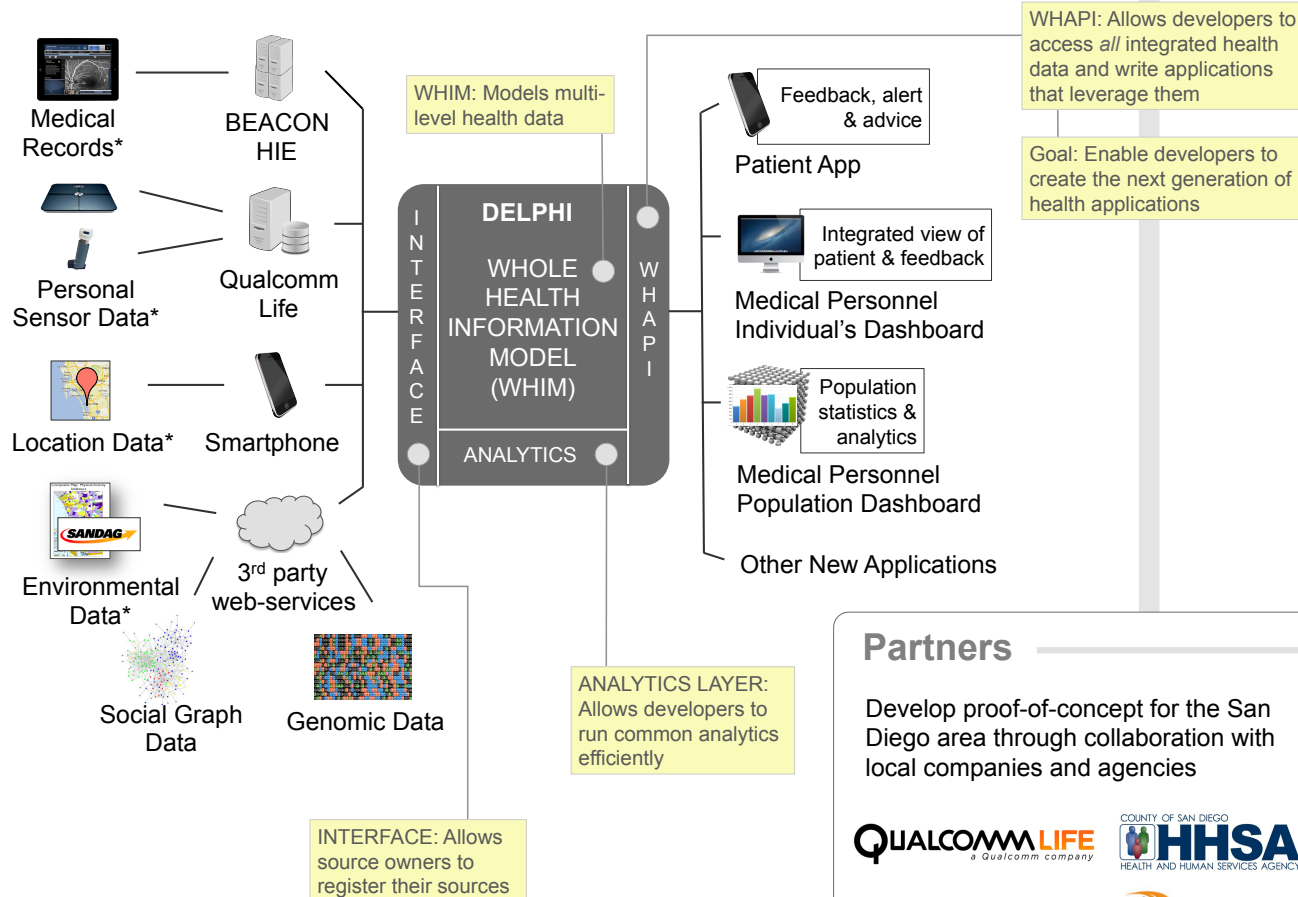| Behavioral & Social Factors	Physical activity Sleep Social Networks Stress Diet
Personal Medical Factors	Medical Records Genomic Pharmaceutical BMI
Environmental Factors	Food & Grocery Pollutants Transportation Crime & Incivilities

- "Health is place"

- Successful interventions require reasoning across layers
  e.g., diabetes, obesity

- Goal: Create a 360-degree view of an individual's health by integrating data from all layers

Technical Challenges

- Data Integration across different data types (spatio-temporal, genomic, alphanumeric, unstructured)
- Efficient analytics for such data

Solution

DELPHI: A platform for the integration of multilevel health data

WHIM: Models multi-level health data

WHAPI: Allows developers to access *all* integrated health data and write applications that leverage them

Goal: Enable developers to create the next generation of health applications

ANALYTICS LAYER: Allows developers to run common analytics efficiently

INTERFACE: Allows source owners to register their sources

* Sources for asthma use case

Partners

Develop proof-of-concept for the San Diego area through collaboration with local companies and agencies

QUALCOMM LIFE · a Qualcomm company
COUNTY OF SAN DIEGO HHSA · HEALTH AND HUMAN SERVICES AGENCY
SANDAG
CONNECT · Accelerating Innovation in San Diego
SAN DIEGO BEACON e HEALTH COMMUNITY

Investigators: Kevin Patrick | Chaitan Baru | Ted Chan | Sanjoy Dasgupta | Claudiu Farcas | Bill Griswold | Jeannie Huang | Yannis Katsis | Lucila Ohno-Machado | Yannis Papakonstantinou | Fredric Raab