Center for Accelerating Innovation

On-Ramp to Innovation
every day counts

U.S. Department of Transportation
Federal Highway Administration

Road Weather Management   Incident Management   Real Time Monitoring   Traveler Information   Traffic Signal Management

Source: Pixabay

Introduction to Crowdsourcing and Improved Transportation Operations

What Exactly is Crowdsourcing?

Crowdsourcing is the practice of addressing a need or problem by enlisting the services of a large number of people via technologies. Crowdsourcing:

- ✓ Addresses a need or problem outside of an organization's resources or means by distributing the workload across a large group of people.

- ✓ Leverages the collective wisdom and unique insights of a crowd.

- ✓ Uses technology and new forms of communication and interaction to document, share, and reflect on the world.
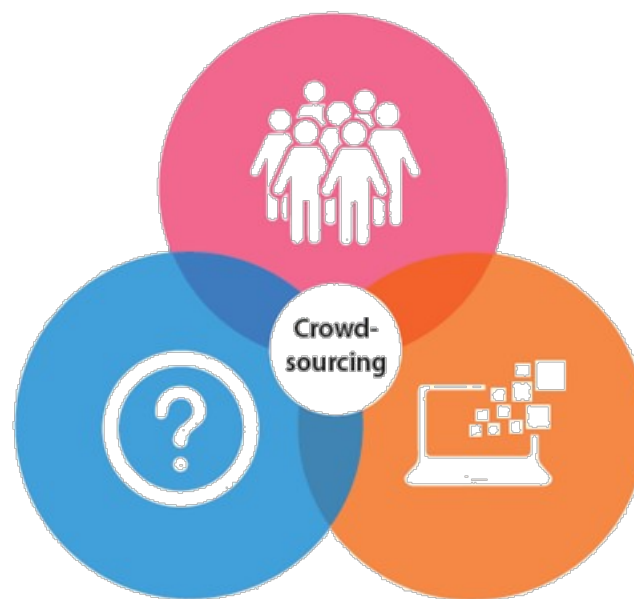
Crowdsourcing Examples

Source: K W Reinsch

1906: UK Weight Judging Competition

- British scientist held competition @ Fat Stock & Poultry Exhibition.
- 787 took part in steer weight-guessing contest.
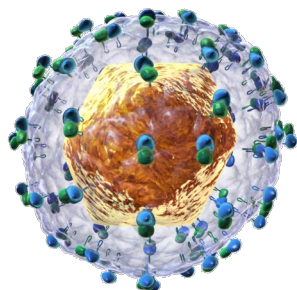- Average 2 lbs. off; best guess 10 lbs. off.

Source: Pixabay

1995: Amazon Reviews

- Customers offer reviews & comment/vote on others' reviews.
- Rating, based on machine learning, and affect product visibility.
- Reports of review tampering surfaced in 2004.

Crowdsourcing Examples

Source: Bruce Blaus

2000: Folding@home, Stanford University

- Volunteers allow use of their computers' idle processing power to simulate protein folding and drug design.

- 2M sign-ups = 5th most powerful computer in the world.

- Enables research into Alzheimer's, Cancer, & more.

2008: Lego Ideas

- Users post their ideas for potential Lego products.

- If an idea generates 10,000 views within a year, it qualifies for review by Lego.

- A user with a successful idea launch is entitled to 1% of the product's revenues.

Source: Unsplash

Crowdsourcing is Everywhere

- Airbnb
- Best Buy
- Citizenscience.gov (GSA)
- Department of Defense
- EUcrowd (EU)
- Facebook
- Federal Bureau of Investigation
- General Electric
- Google
- Harley Davidson
- Kraft Foods

- Lego
- Mattel
- McDonalds
- Microsoft
- NASA
- Netflix
- New York City Simplicity
- Paypal
- Procter and Gamble
- Sony
- Starbucks
- Wikipedia

Crowdsourcing for Transportation Operations

- Most common applications of crowdsourced data are for **Traveler Information** and **Incident Management**.
- Agencies are now expanding its use across application areas ranging from maintenance to performance management.

Traveler Information

Incident Management

Traffic Signal Management

Freeway Management

Road Weather Management

Maintenance Management

Sources of Crowdsourced Transportation Data

- Data extracted from social media platforms.

- Data acquired from third-party crowdsourced data.

- Data collected from specially developed mobile apps.

Data is sourced whenever and wherever people travel.

Source: Pixabay

Every Day Counts (EDC-5) Crowdsourcing for Operations Agency Support

The National Team will be helping 30+ States and local agencies with:

- Understanding operational gaps or needs

- Identifying the right application & data

- Fostering executive & technical buy-in

- Developing technical/programmatic skills

- Defining data management processes

- Navigating funding and procurement

- Assessing architecture approaches

National Team Expertise

- Traffic Incident Management

- Transportation Systems Management & Operations

- Active Transportation and Demand Management

- 5 State DOT & Local Experts in Crowdsourcing

- Data Scientists

For more information on the EDC-5 Crowdsourcing for Operations Program, contact

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For more information on the EDC Program

www.fhwa.dot.gov/innovation/everydaycounts/

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