Making Transportation Analysis Count

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How Can Transportation Analysts Help Get Stuff Done?

- **Advancing decisions for**
  - **Projects**
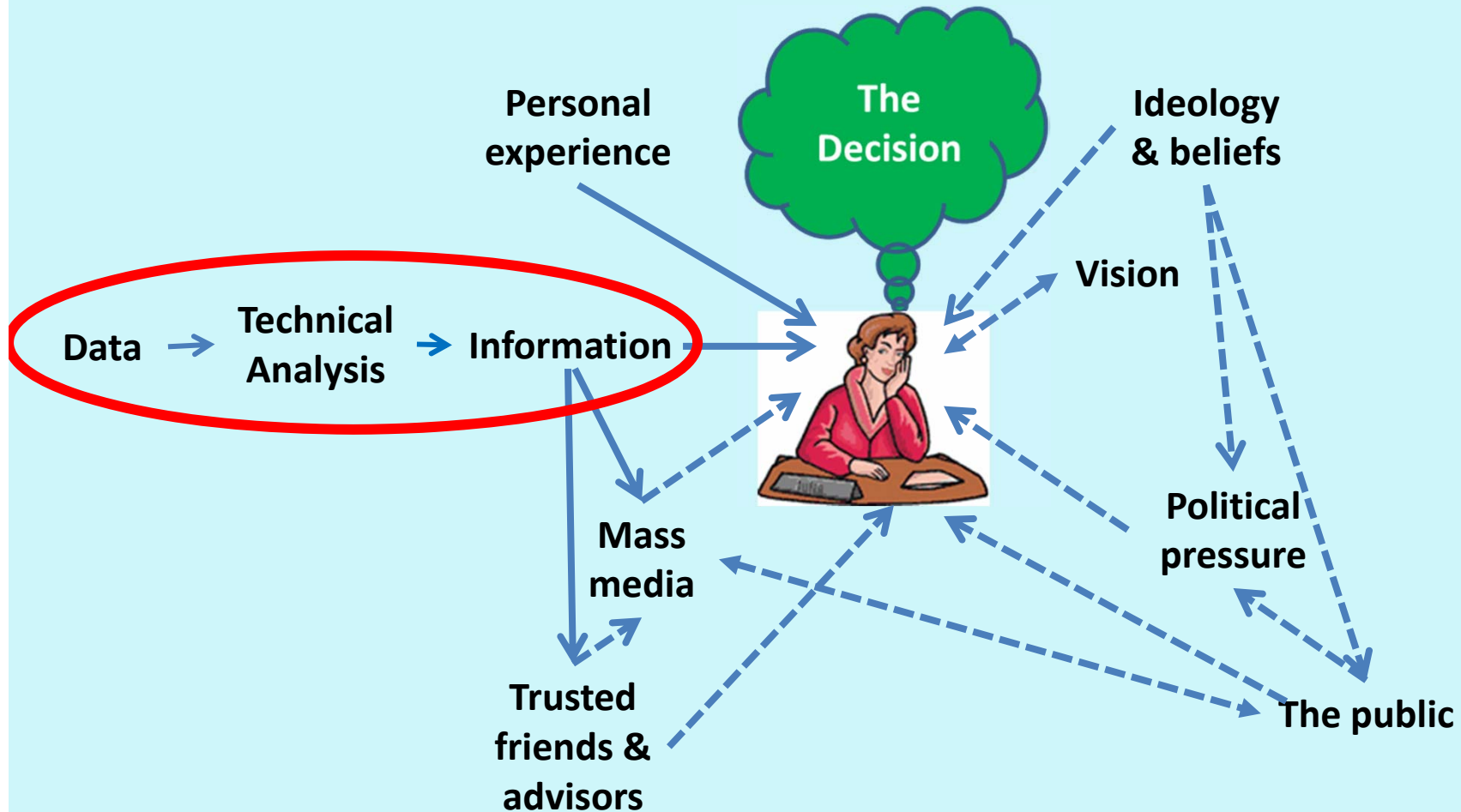 - **Services**
  - **Policies**
  - **Finance**
  - **Funding**

- **And how does he know?**
  - **Literature**
  - **Observation**
  - **Interactions with leadership**

What Moves Decisions?
It's Not Only Data & Analysis

Personal experience

The Decision

Ideology & beliefs

Data → Technical Analysis → Information

Vision

Mass media

Political pressure

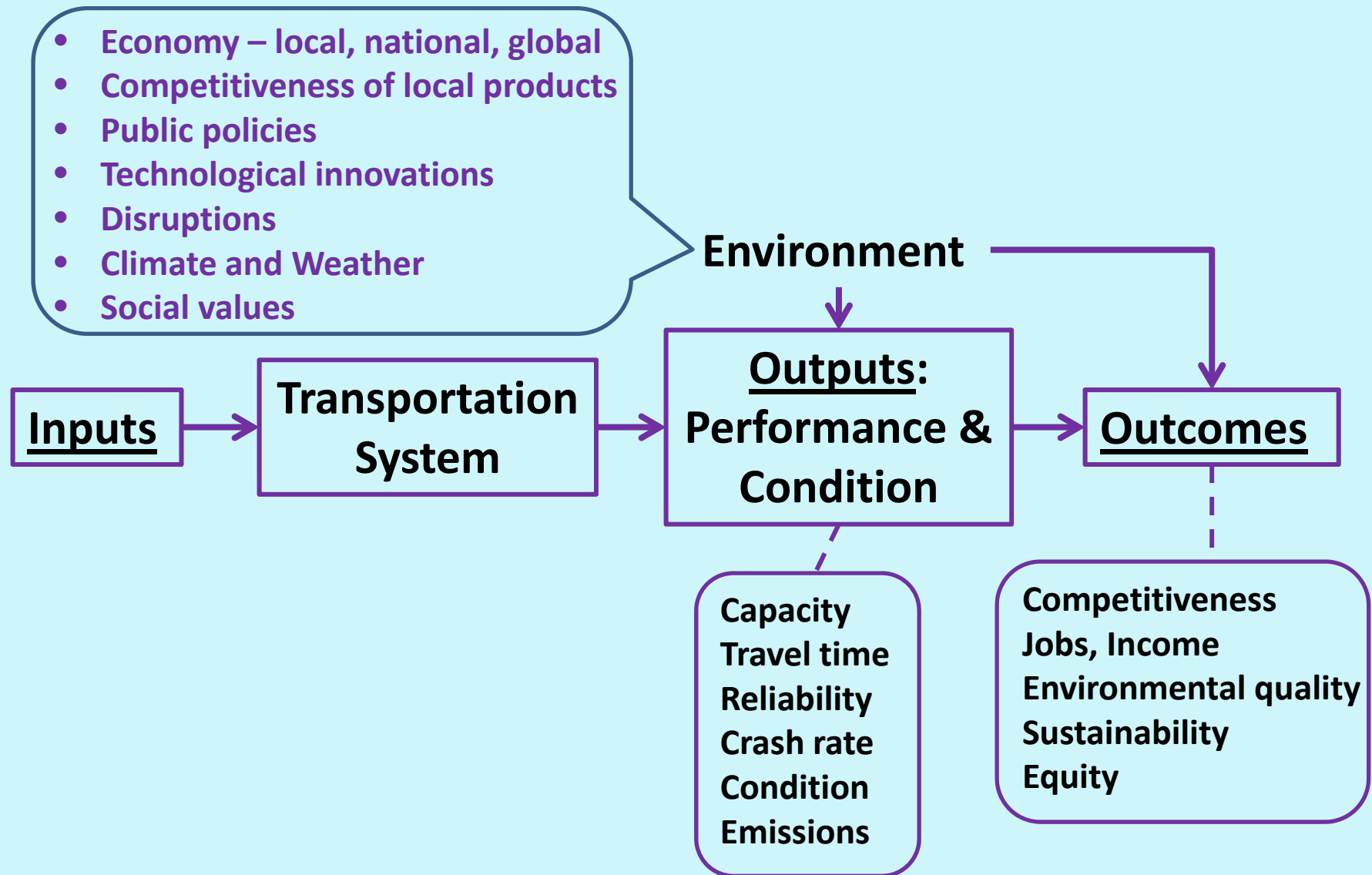Trusted friends & advisors

The public

For Decision makers, It's About Outcomes

- **What transportation can do for us?**
  - Support economic activity
    - "Create" jobs
    - Enhance competitiveness
  - Expand access to opportunities
  - Improve quality of life
  - Assure safety and security
- **Outcomes are the new performance measures**

Transportation, Outputs and Outcomes

- **Economy – local, national, global**
- **Competitiveness of local products**
- **Public policies**
- **Technological innovations**
- **Disruptions**
- **Climate and Weather**
- **Social values**

Environment

Inputs → **Transportation System** → **Outputs: Performance & Condition** → **Outcomes**

Capacity
Travel time
Reliability
Crash rate
Condition
Emissions

Competitiveness
Jobs, Income
Environmental quality
Sustainability
Equity

Uncertainty of Outcomes: Job Creation

- **Dependence on project, design, & external factors**

- **Uncertainty and variability are high**

- **Incentives for grand claims**
  - **Gullibility vs. credibility**
  - **Who does verification?**

Job Type	Jobs/$billion
Direct	7,250
Indirect	18,080
Subtotal	25,330
Induced	13,308
Total	28,638

Illinois Governor: Thousands of jobs created building new Mississippi River bridge

(KMOV) – Illinois Governor Pat Quinn says more than 3,400 jobs were created in building the newly-named Stan Musial Veterans Memorial Bridge, which will connect Illinois and Missouri over the Mississippi River. (July 15, 2013)

Brooklyn Bridge Rehab Creates Jobs, But You'll Never Know How Many (WNYC New York: June 02, 2010)

Wednesday's official groundbreaking of the Brooklyn Bridge rehab brought out some big political names... What it did *not* bring was clarity on the job creation issue.

Because New York received federal stimulus dollars to complete the bridge work … the city must follow certain reporting guidelines, like the amount of money spent, the progress of the work and the expected number of jobs that the project will generate, although pinning down actual job creation numbers is notoriously difficult. (Last December, the Obama administration changed the job reporting requirement to evaluate "full-time equivalent" positions paid for out of stimulus funding--regardless of whether the job was newly created or existing.

New York City's stimulus website estimates that the Brooklyn Bridge rehab will create and/or retain 834 full-time equivalent positions…Earlier in press conference, the vice president said that the federal stimulus dollars would create 150 jobs. But … New York City's own data said the bridge work had created 0.13 positions... According to the commissioner (Sadik-Khan)… "I think we have 44 people on-site right now, and we expect that number to grow…"

… "Yes, these are jobs, these are real jobs," Vice President Biden said… "…But…What we're doing here…and what we're doing on those other bridges across the country--they are worthwhile in and of themselves…"

Measuring the Outcomes
CTA Flyover Proposal
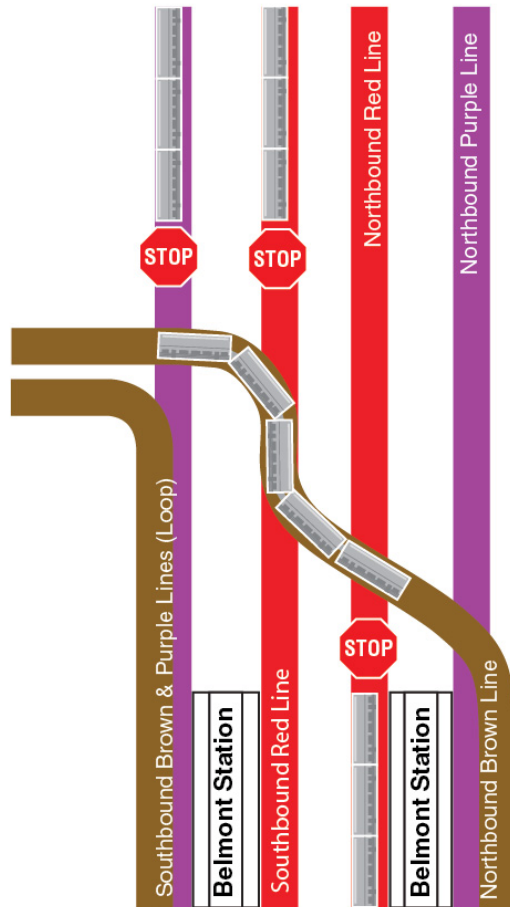
Delay/passenger
Range: 30-240 sec
Mean: 84 sec

Increased train throughput

↓

Increased accessibility

↓

Increased development

↓

Increased opportunity

Will this happen?
What is it worth?

Red-Purple bypass project

The CTA has identified 16 buildings in the Lakeview neighborhood it says may be torn down as part of a $320 million project to build a flyover bypass and untangle trains on the Red, Purple and Brown lines.

TARGETED PROPERTIES

Buildings
- 3240 N. Wilton Ave.
- 3242 N. Wilton Ave.
- 3244 N. Wilton Ave.
- 3246 N. Wilton Ave.
- 3252 N. Wilton Ave.
- 3328 N. Clark St. (rear building only)
- 3334-3344 N. Clark St.
- 3346-3348 N. Clark St.
- 3366 N. Clark St.
- 947 W. Roscoe St.
- 3406 N. Sheffield Ave.
- 3401-3407 N. Clark St.
- 3413 N. Clark St.
- 3415-3419 N. Clark St.
- 3421 N. Clark St.
- 947-949 W. Newport Ave.

Other properties
- Air rights of buildings at 3324 and 3326 N. Clark St.
- Two parking lots at 3368 and 3427 N. Clark St.
- Vacant lot at 3330 N. Clark St.

SOURCES: Chicago Transit Authority, Tribune reporting   TRIBUNE

Estimating Economic Development Outcomes

- **Indicators of impact**
  - Δ Connectivity
  - Δ Capacity

- **Predictive models**
  - EDRG: Tredis, REMI: TranSight

- **Case studies**
  - SHRP2: T-PICs
  - Value of stories

DriveBC.ca   May 18, 2014 2:52:05 PM

http://www.tpics.us/Default.aspx   http://www.remi.com/products/transight   http://www.tredis.com/

Making the Case to Stakeholders
What's in it for me?

http://www.transportationissuesdaily.com/the-transportation-crisis-facing-washingtons-next-governor-2/washington-state-i-90-snoqualmie-pass-image-i90wildlifebridge-org/

Making the Case for Projects & Policies

We need to learn to <u>make the case</u> – to craft and sell the VALUE PROPOSITION for transportation investments, actions, & policies.

1. *The value proposition is based on an analysis of the benefits, costs and thus net value that an organization can deliver to its customers, i.e., value = benefits – cost.[1]*

This definition fits traditional transactions…

2. *A value proposition is a <u>promise</u> of value to be delivered and a <u>belief</u> from the customer that value will be experienced. [2]*

1. Kaplan, Robert S., and David P. Norton, *Strategy maps: converting intangible assets into tangible outcomes*, Harvard Business School Publishing Company, 2004.

2. http://en.wikipedia.org/wiki/Value_proposition.

Dimensions of that Value Proposition

- **How does it connect to things important to the stakeholders?**
  - **What is the transaction?**
- **Different VPs for different groups**
  - **My problem**
  - **Your action**
 - **Our cost**
 - **Value produced for me**

© AP Photo/Rogelio V. Solis

Transactions and Disconnects

- **Transactions = exchange**
  - Beneficiary pays (MFT, Priced facilities)
- *Disconnects*
  - Some who "pay" do not benefit directly
- **Internalizing externalities (beneficiaries paying more) cannot address all disconnects**
  - Non-compensatory cases
- **Resolution?**
  - Relocation, redesign, mitigation, project termination?
- <u>**Reconstructing the value proposition**</u>
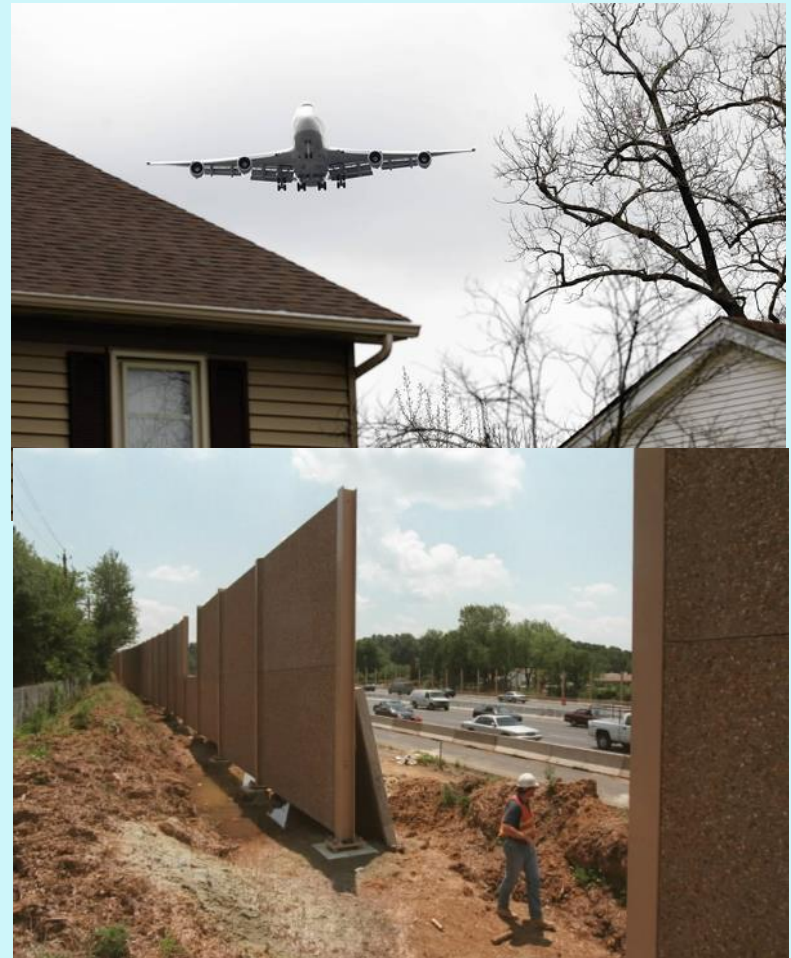
Benefit-Cost Analysis & the Value Proposition

- **B-C analysis: back-office tool?**
  - **Screening, ranking**
  - **Not build/no build??**
- **Speaks to aggregate value proposition**
  - **Fails to reveal "what's in it for me…"**
- **Narratives work better**
  - **The elevator speech**

Costs
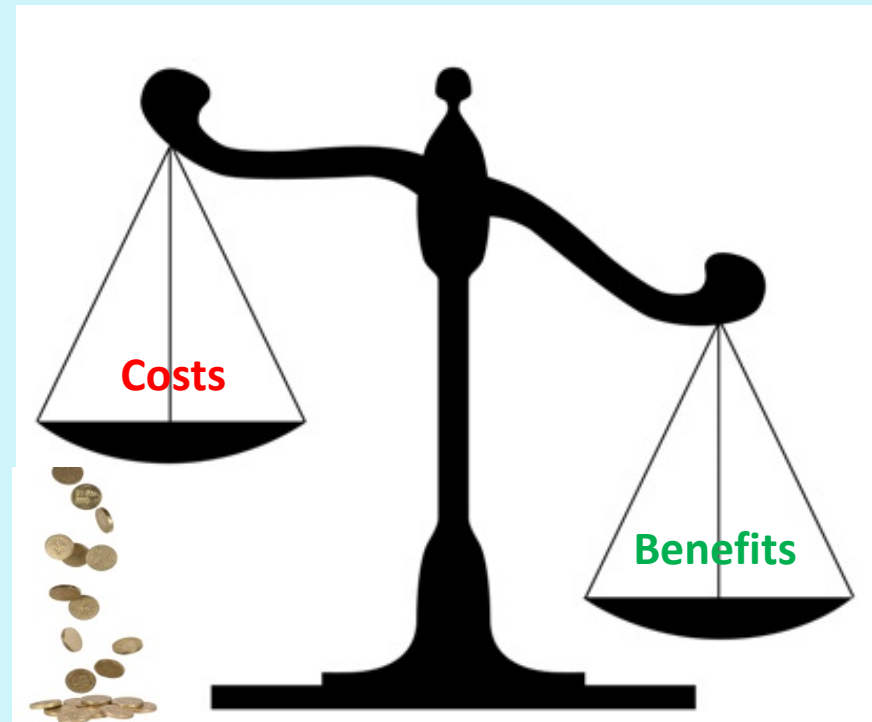
Benefits

The New Value Proposition
Clarifying the promise...To promote the belief

- **Specific benefits → specific stakeholders**
  - Multi-dimensional: numbers + scenarios, vignettes, stories, cases – SHRP2 – T-PICS,[1] NCHRP-95
  - Make it real for stakeholders
- **Connect projects to performance, outcomes**
  - How will this change performance for these travelers, carriers, customers?
- **Be realistic about outcome estimates**
  - What's certain, likely, possible...
- **Address negatives in specific terms**
 - Link to mitigation/compensation actions

[1] Transportation Project Impact Case Studies

Promise & Belief

Promising Specifics
Makes the Value Proposition Real

- **Local option taxes – commitment to pay for named projects**
  - Tied to projects, performance outputs
  - Link to outcomes implicit

- **V.P. based on transaction**
  - Promise → belief

- **Los Angeles County Measure R**

- **Auditable promise**
  - Link between Bs & Cs is short

- **Implications for system planning?**
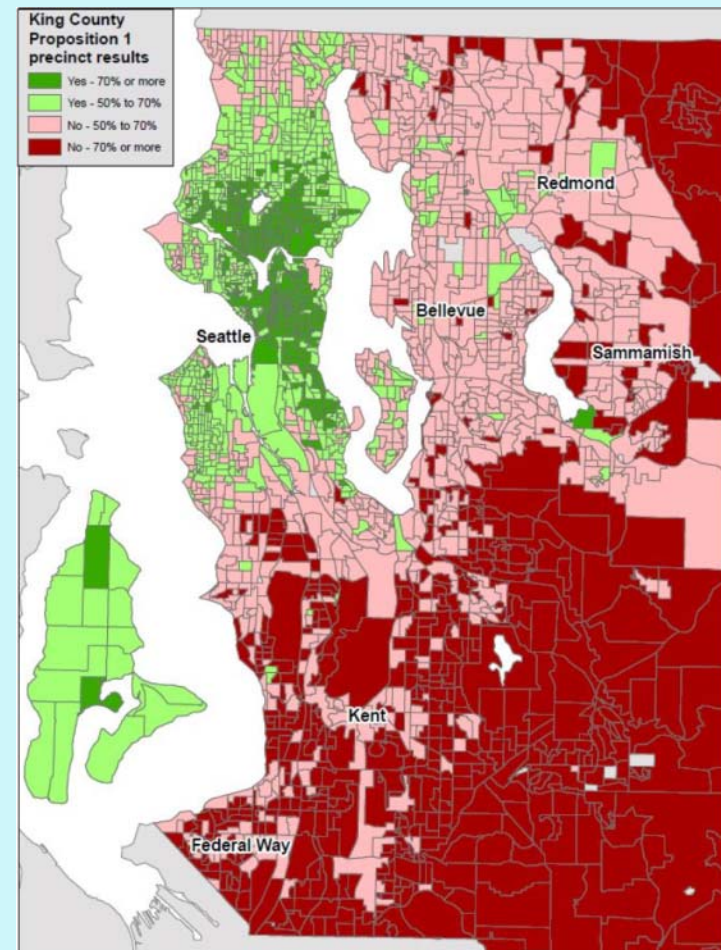 - Purposeful ordering, packaging, plan components

Measure R Projects Interactive

Wikipedia commons
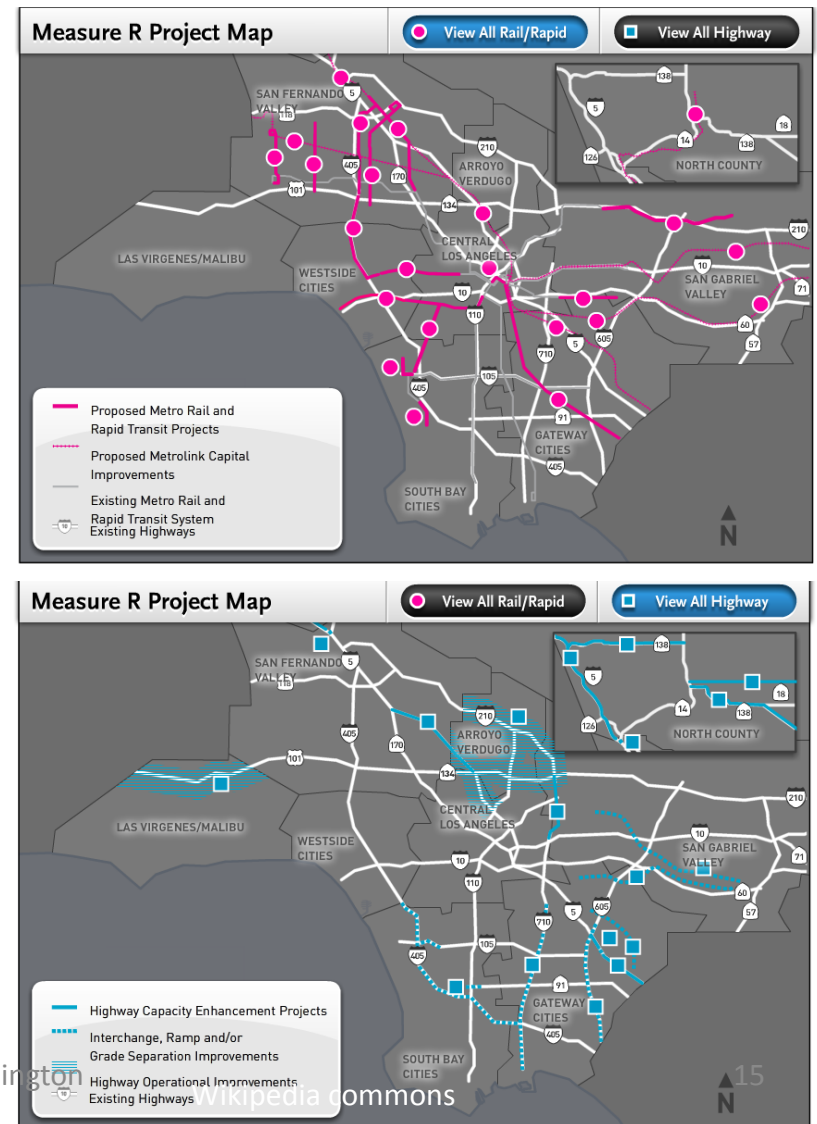
King County Proposition 1

CAUTION

- **What happened here?**
- **Who benefits? Who pays?**
- **Value proposition f{equity}**
- **Incremental value?**
  - Pay more for what?
    - Building vs maintaining
  - Agency credibility is important
    - Trust must be earned
- **Reconstructing the V.P.?**
  - Make it a transaction

King County
Proposition 1
precinct results

- Yes - 70% or more
- Yes - 50% to 70%
- No - 50% to 70%
- No - 70% or more

http://blogs.seattletimes.com/politicsnorthwest/2014/05/15/map-only-seattle-lake-forest-park-favored-prop-1-tax-increase/

Value Proposition for Freight

- **The invisibility problem**
- **Value Proposition for subsidizing container port?**
- **Address in terms of its role in local economy**
  - **Supply chain connections:**
    - **What businesses are affected?**
    - **How much employment?**
    - **What shipment volume?**
    - **What shipment value?**
    - **What options?**
  - **Quantitative & descriptive**
- **Example:**
  - **Road with AADT = 5**
    - **What role does it play – what's in those trucks?**

Promise and Belief

- **Understanding issues, context**
  - **Situational awareness**
  - **How do stakeholders see needs?**
  - **Meeting them on their grounds**
- **Addressing "what's in it for me?"**
- **Credibility**
  - **Openness, communication**
  - **Recognized track record**
  - **(The vaccination example)**
- **Realistic promises**
  - **Data and information vs blowing smoke**

Customers and Collaborations

- **"Some of my engineers still see the customer as the enemy…"** (State DOT Secretary)
- **Collaboration**
  - **Early engagement – SHRP2 "Plan Works"**
- **Who is the community?**
  - **What do they want, need?**
  - **Marketing includes project design (Kotler)**

http://www.fhwa.dot.gov/goshrp2/Solutions/All/C01/PlanWorks_Better_Planning_Better_Projects

Useful Forms of Information

- **Objective measures**
  - **Predictions**
    - **Accuracy, trust, understanding**
- **Narratives**
  - **Data-derived, well-sourced**
- **"Public opinion in this country is everything." (A. Lincoln)**
  - **Getting balanced opinion**
  - **Educating the public**
    - **Transportation finance**
  - **Role of social media**

- **Examples – show & tell**
- **Case studies (Before-after)**

Learning from Experience: Post-Project Evaluation

- **What really happened? What was the result?**

- **Don't leave these questions to TV reporters!**

- **Bootstrapping models, strengthening belief**
  - Delivery + demonstration → belief

- **Banking your own case studies**

- **Commit to post-project audits, natural experiments, learning**
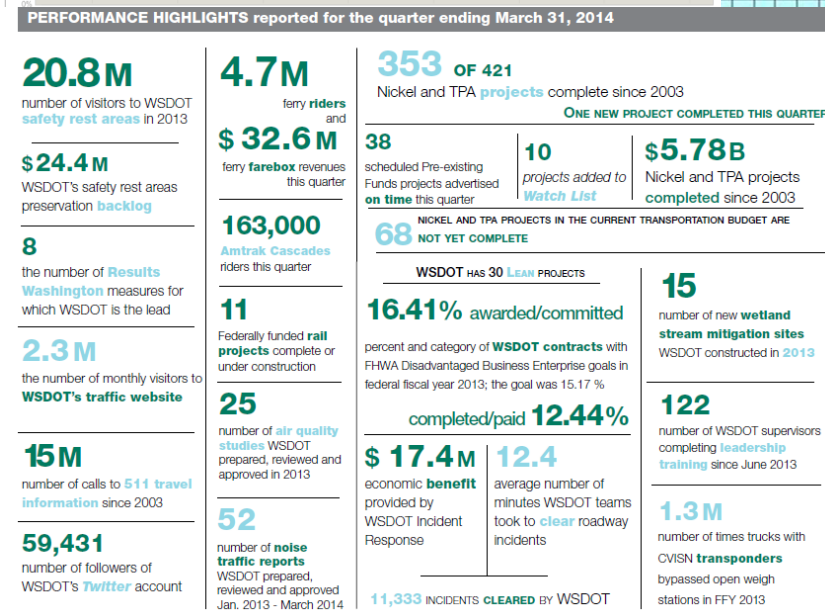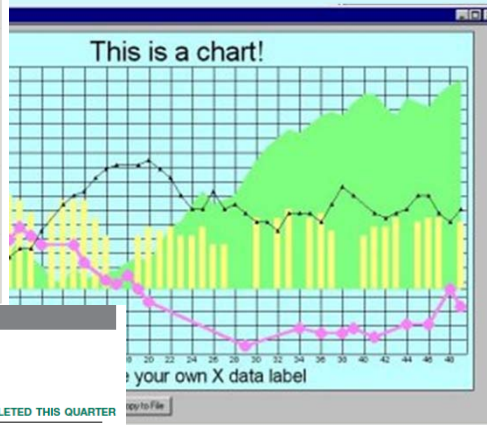
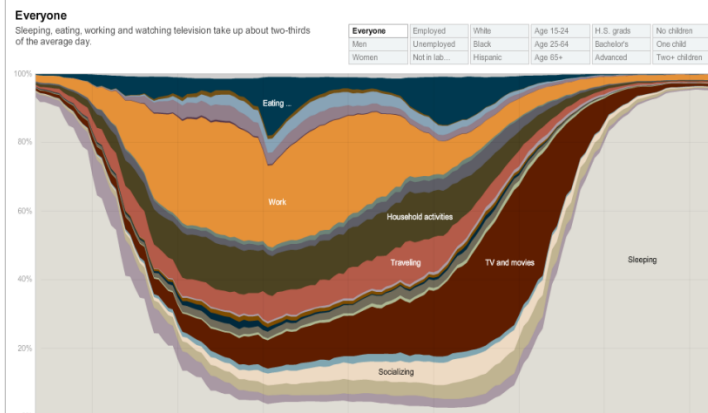 - e.g.: storm disruptions, SMD, TIGER grants, EU...

Delivery Mode Is Important

- **Technical reports**

- **Briefings (FtF)**

- **Web products**

- **Narratives (stories)**

- **Visualization**
  - **Pictures, graphs, animations, videos**

Essentials of Communication

- **Timeliness**
  - Decisions move at their own pace
  - Don't let the perfect drive out the good
  - Have the data in hand

- **Brevity**
  - *Minimizing the bull*
  - Message essentials
  - It's not easy being brief

- **Clarity**
  - Customers must understand
  - Who are the customers?

1945

Road to Success

- **CEOs say they need…**
  - **Communication skills**
  - **Situational awareness**
  - **Collaboration**
  - **Creativity**

- **Engineering plus…**
  - **Data analysis**
  - **Writing, speaking**
  - **Visualization**
  - **Social media**

- **Meet customer on her own grounds**