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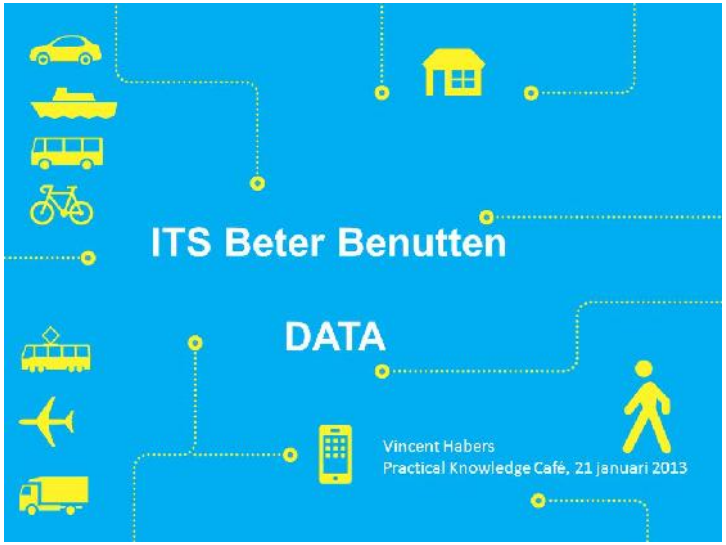
Process and quality indicators for delivery of public data

Overview

- Beter Benutten (“Optimising Use”)
- Call for Innovation Partnerships Talking Traffic
- 7 Data Items
  - Description
  - Qualitative Indicators (process)
  - Quantitative Indicators (content)
- 3 Examples
- Lessons Learned and What’s Next…

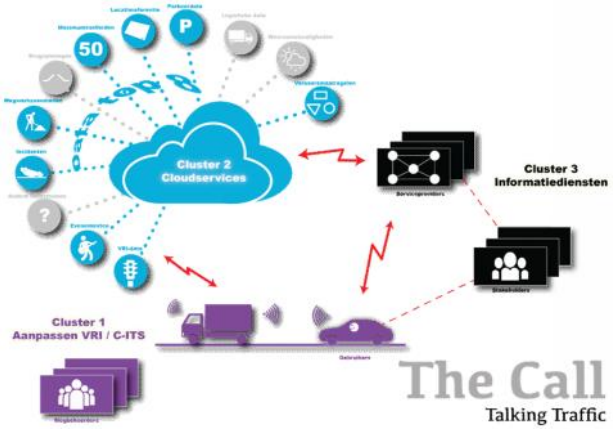
Beter Benutten (“Optimizing Use”)

- Collaboration between the Dutch government, Regions and Businesses
- Several projects:
  - Combining real-time road and public transport information
  - Rewards for avoiding rush hour
  - Promote cycling (bike-highways)
  - Bridges
  - In-car information / apps (BiC III, Spookfiles)
  - Lots and lots of information / data
- Goals:
  - decrease congestion with 20% (2011 - 2014)
  - 10% shorter journey times, up to 2017



Call for Innovation Partnerships Talking Traffic

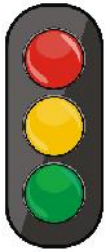
- Participants are divided over 3 clusters…
  - Road Side Equipment (TLC / C-ITS)
  - Cloud services & data enrichment
  - Information Services (websites, apps)
- … to deploy (C-ITS like) services over 13 regions (12 + RWS)
  - Bike priority
  - GLOSA, RWW, Speed Advice
  - Parking information
  - Temporary Measurements (road works, events, etc.)
- Two way SLAs
- 7 Data Items…

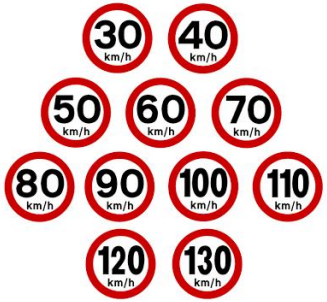


7 Data Items

- Actual Road Works
- Maximum Speed Limits
- Residual Time of Incidents
- Traffic Measures in Control Scenarios
- Parking
- Events (concerts, festival, parades, etc.)
- Traffic Light Control Data

- Items are checked:
  - Qualitatively (process)
  - Quantitatively (content) Quantitatively

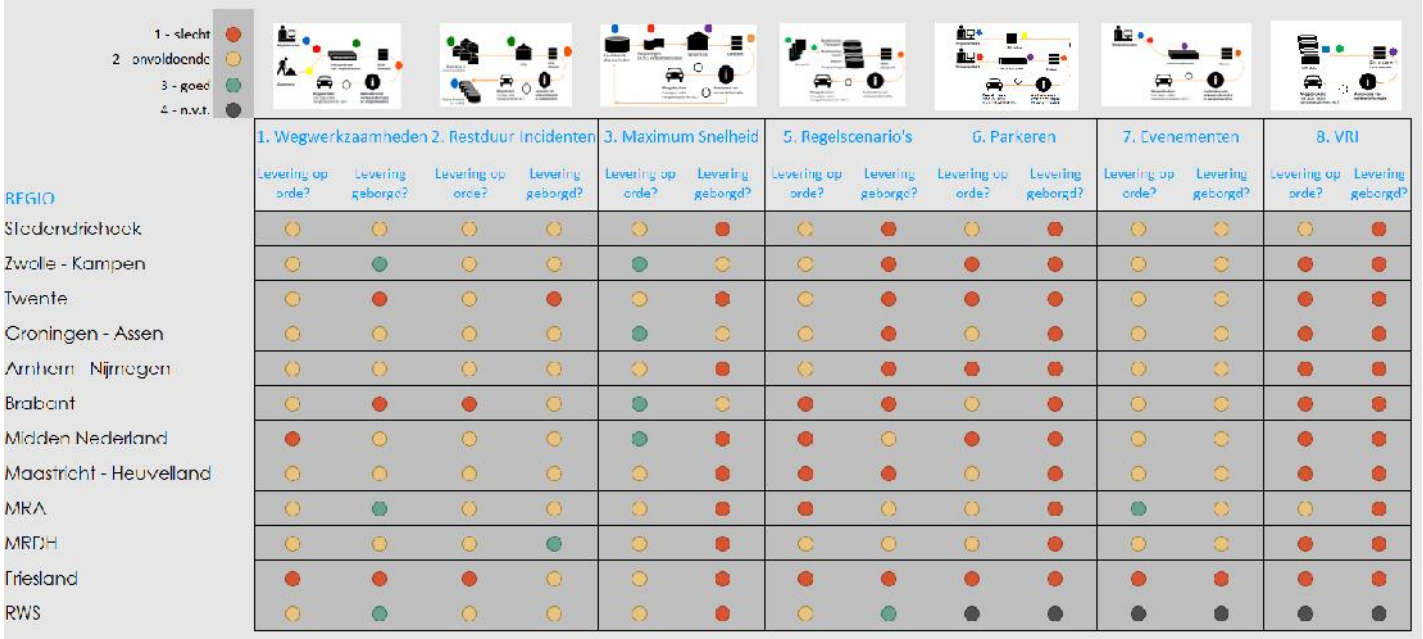




Qualitative Indicators

- Identify involved parties (roles) for each data item for each Region
- Qualitatively score each role per data item per region
- Determine averages over all roles per data item, per region

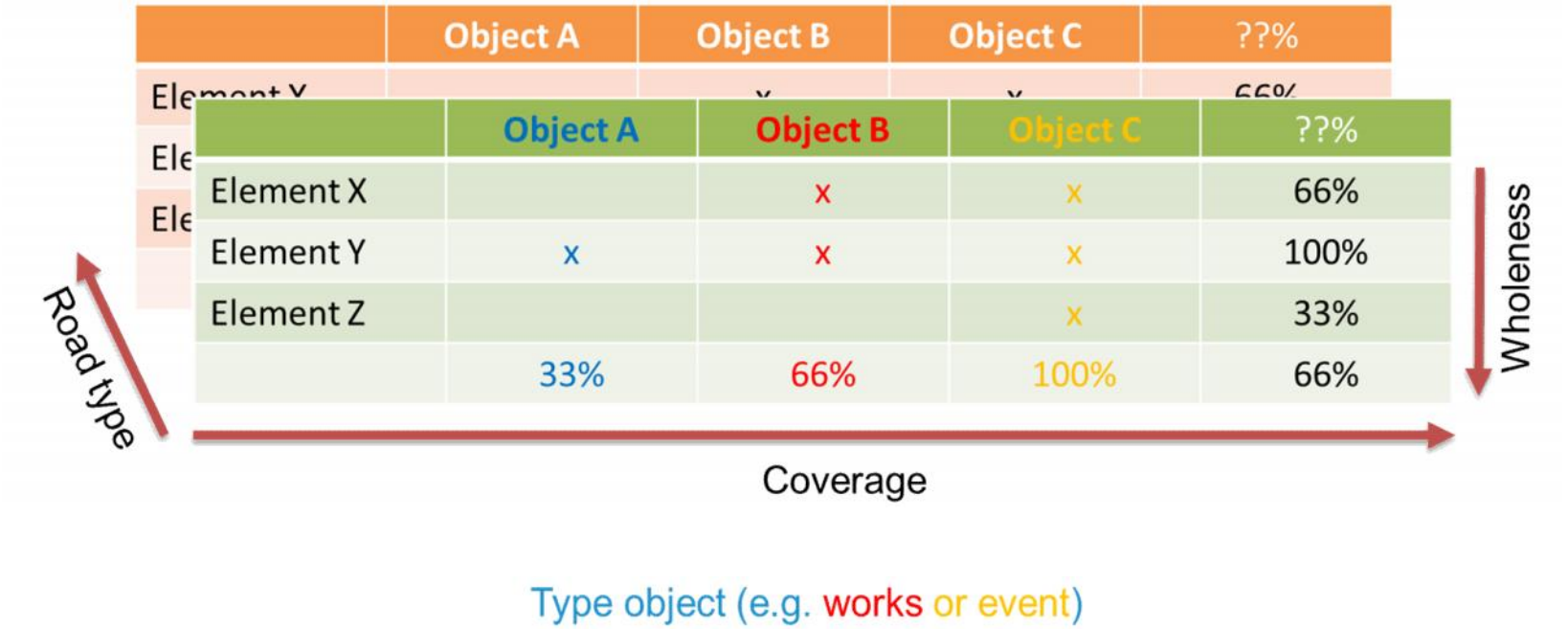
- Do this for:
  - Actions (is it done?)
  - Procedures (should it be done?)



- Acts as a management board for quality management

Quantitative Indicators

- Timeliness
- Coverage (all items)
- Wholeness (per item)
- Accuracy / Reliability
- Continuity (availability & updates)
- Authorisation: checked



Example 1: Actual Road Works

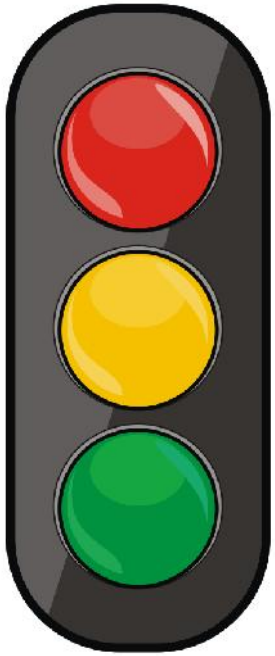
- Timeliness
  - Δt publishing – start road works
  - Δt actual report - publishing
  - Published vs. Reported vs. Signed off
- Coverage
  - % of road authorities
  - KM road relative to total [%]
  - # works [% publ./report/indirect]
- Wholeness
  - Completeness of elements [%]
- Reliability
  - Correctness of elements (ex-post)
- Continuity
  - Availability: downtime [%]

Example 2: Maximum Speed Limits

- Timeliness
  - Authorisation: checked [Y/N]
  - Latency: dT introduction-feed [min]
- Coverage
  - KM road relative to total [%]
- Wholeness
  - n/a, identical to coverage
- Reliability
  - Authorisation: checked [Y/N]
  - Accuracy: Freq./Too late [%]
- Continuity
  - Availability: downtime [%]
  - Up-to-date: average latency

Example 3: Traffic Light Control Data

- Timeliness
  - Δt timestamp data generation & clock time when available in feed
- Coverage
  - Number of intersection [%1, %2]
- Wholeness
  - Completeness detectors, SG, other [%]
- Reliability
  - Authorisation config: checked [Y/N]
  - Calculated values [P, ∂]
- Continuity
  - Availability: downtime [%]
  - Presence of data [%]
  - Update frequency [tenth seconds, μ, ∂]



Lessons Learned

- Roughly data is: available or not available, right or wrong
- Subtlety is hard due to lack of reference system, therefore not measurable
- Authorisation and/or publication of data is a measure of integrity (like assuming data is right), but mistakes can be made…
- Procedures are an important measure of integrity: periodic checks
- Interpretation indicators: not checked ≠ not current, no changes ≠ incorrect
- Data quality cannot always be determined afterwards, apart from its availability
- Ex-post analysis requires thorough logging
- A lot depends on “trust” of data, sources and processes…

Open questions

- What requirements are sufficient?
- What are the utmost/best quality levels?
- And how to quantify these?

What's Next…

- Much organization needed
- Bring data in order
- Keep data in order
- Quality control remains very hard
- Should private parties provide the data instead of public parties because they can do better?

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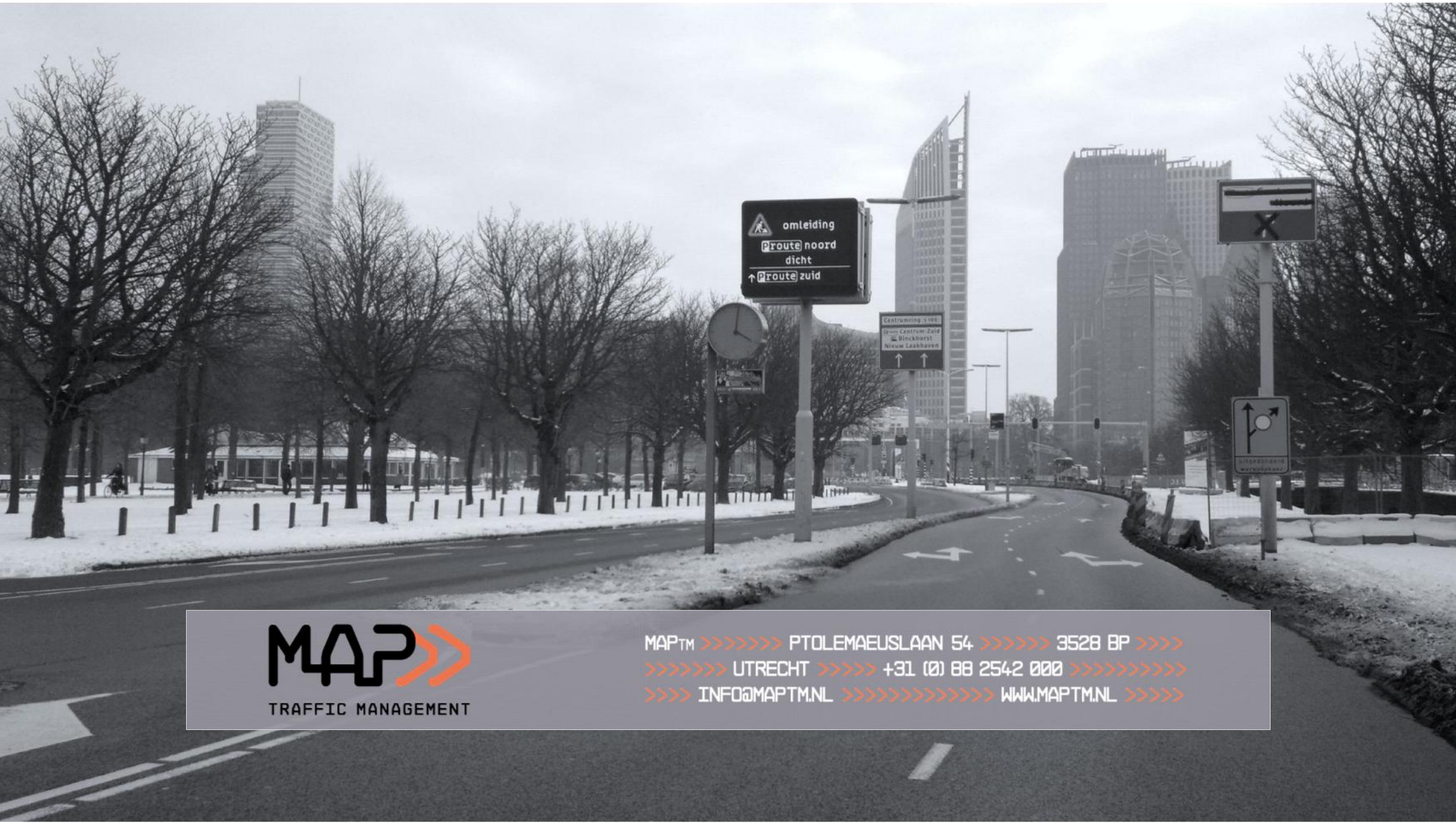

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