A
Business Intelligence Platform
to Support
Fact-Based Decision-Making
for Public Transit

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Poll

How many of you have…

- heard of Business Intelligence (BI) tools?
- used BI tools?
- extensive experience with BI tools?
- come to the wrong room but feel too embarrassed to leave?

Outline

- What does "fact-based decision-making" really mean?
- Why fact-based decision-making? Why BI?
- Pilot Project:
  - Background
  - Data Preparation
  - Business Intelligence Tools (MicroStrategy)
  - Lessons

What does "fact-based decision-making" really mean?

1. fact, n.

   Something that has really occurred or is actually the case… as opposed to what is merely inferred…

2. decision, n.

   The final and definite result of examining a question; a conclusion, judgement…

1 + 2 = A judgement based on truths known by actual observation, as opposed to what is merely inferred

Source: Oxford English Dictionary, 2014

not

Why fact-based decision-making?

Why Business Intelligence Tools?

- Visualisations
- Aggregation is automated
  - ↳ instantaneous data slicing
- Live updating of results
  - ↳ empowers near real-time monitoring
- Consistency from one report to the next

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Background

- London [Ontario] Transit Commission, IBI Group, U of T (c/o NSERC)
- Trapeze previously providing basic diagnostic tools as part of CAD/AVL & APC software
- Pilot to produce Key Performance Indicators (KPIs)
  - Percent Seated Capacity
  - Schedule Adherence
  - Overload Events
  - Percent Scheduled Revenue Service Hours
  - Running Time Adequacy

- SQL
- Databases, tables, and columns, oh my!
  - **data dictionary**
- Data joining
- Data cleaning
  - Over[illegible]vents

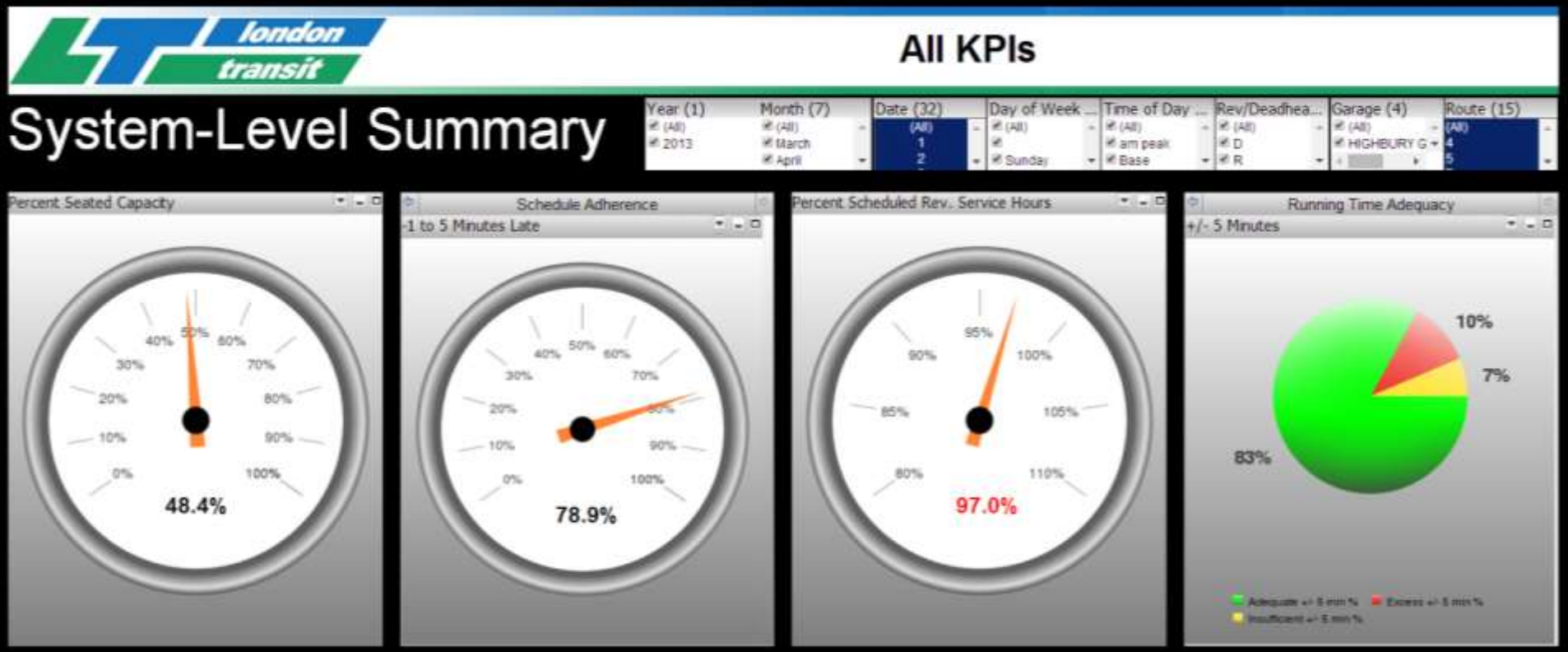
→ 50-80% of total time

- Sample output → Excel → BI tools

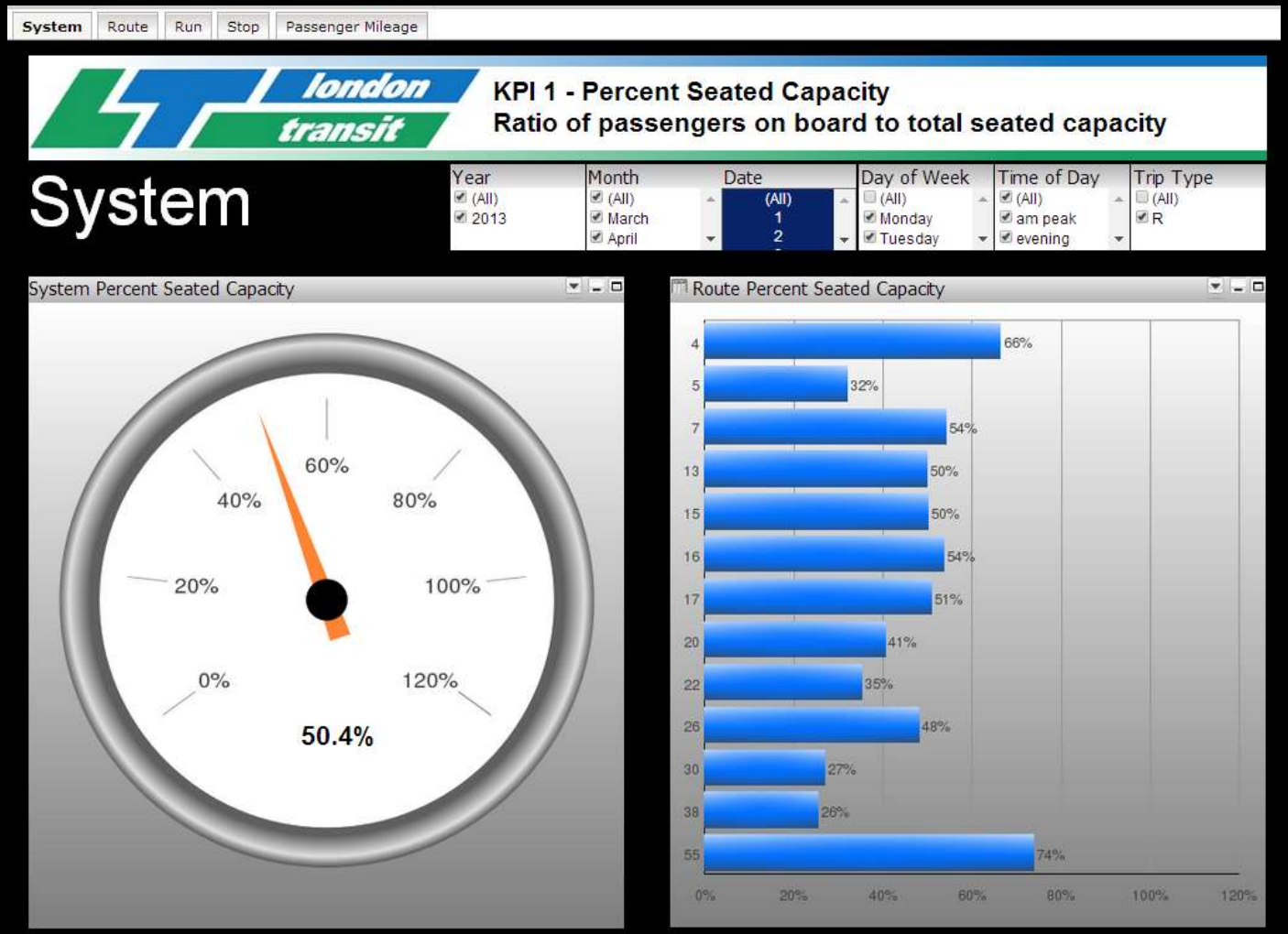
- Microstrategy
- Cloud-based (Analytics Express)
- Demo (screenshots)

Disclaimer: this demo relies on an interim, incomplete sample data set intended for illustrative purposes only.

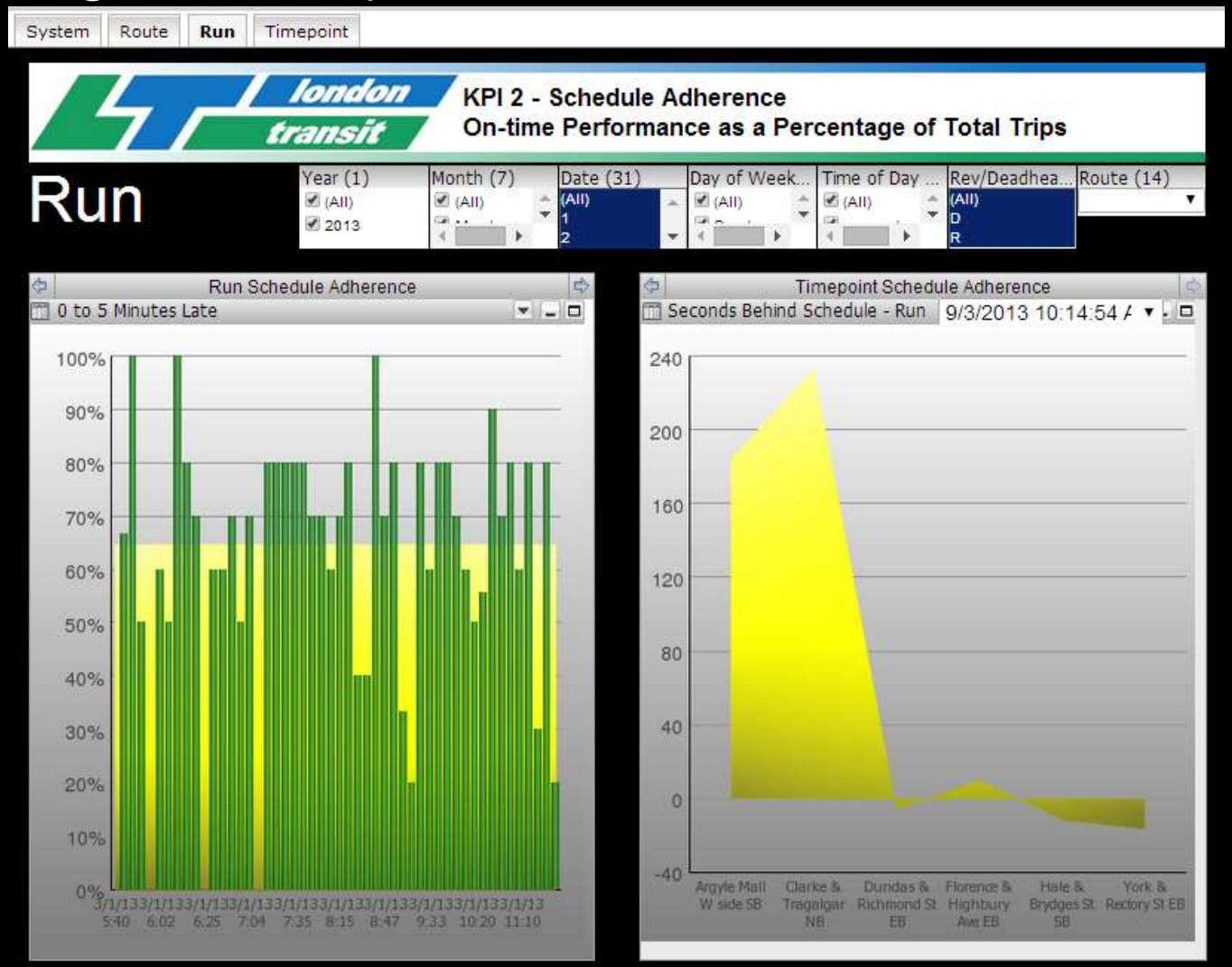
Summary: System level view of all KPIs.



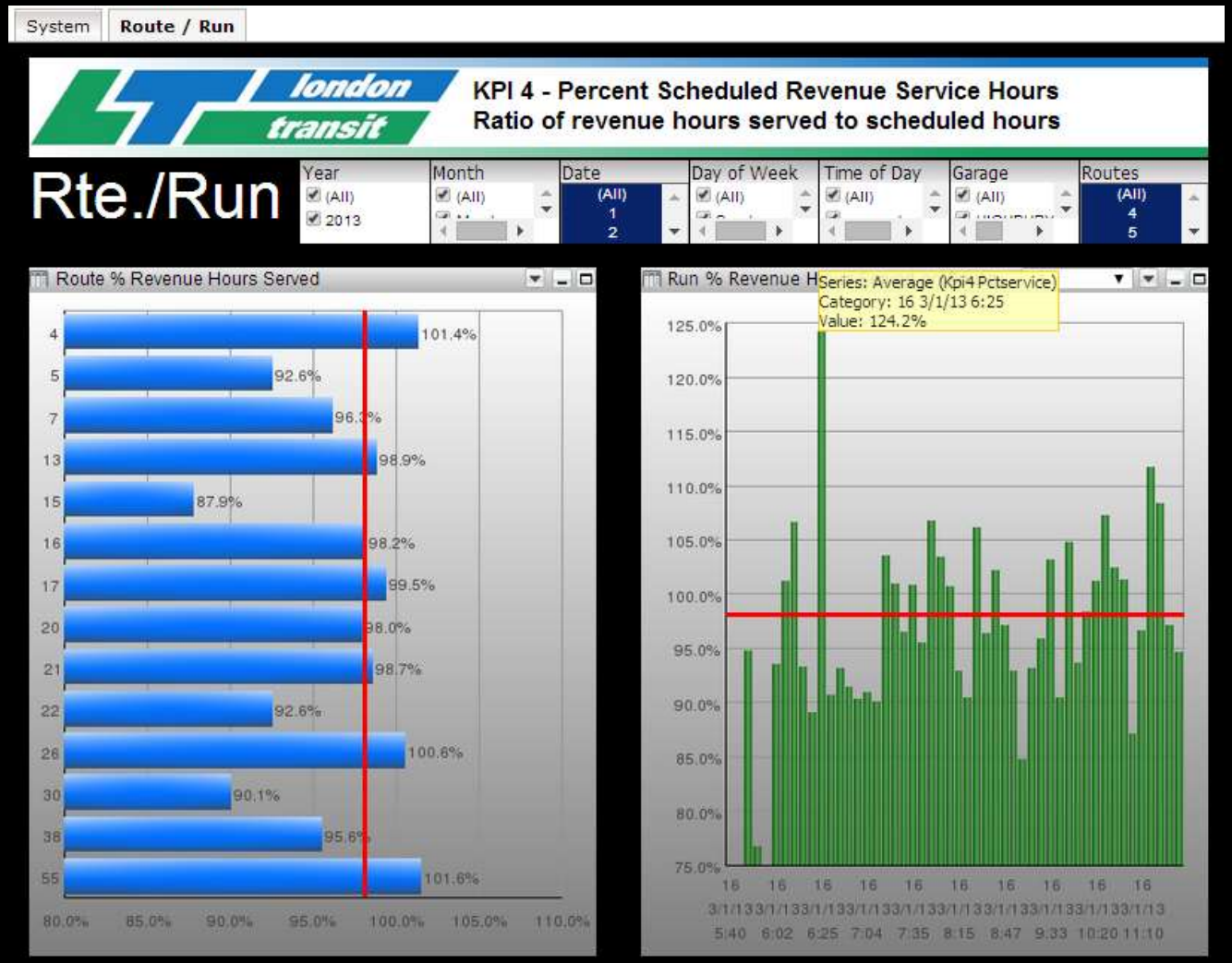
Percent Seated Capacity: Ratio of passengers on board to total seated capacity.



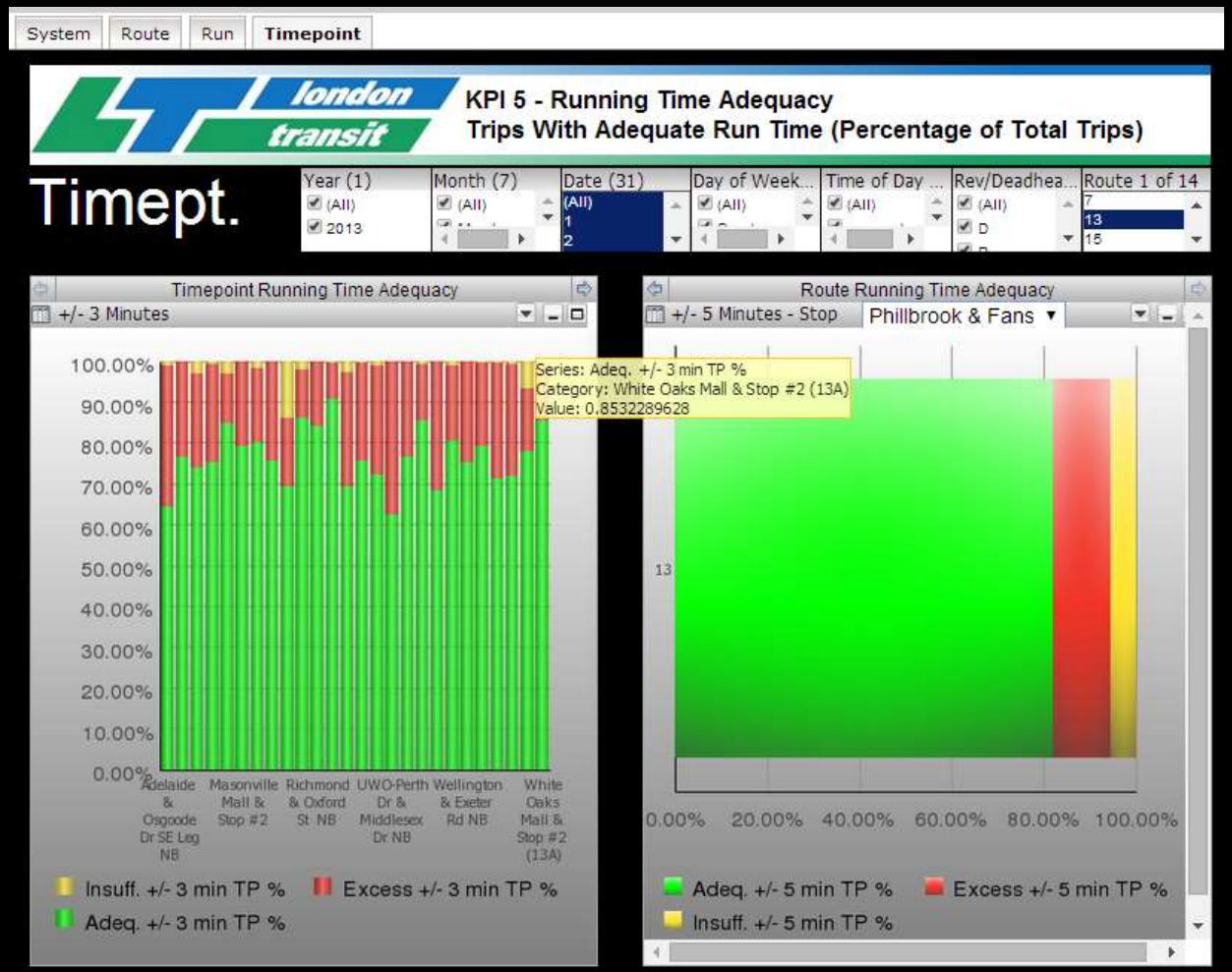
Schedule Adherence: On-time performance as a percentage of total trips.



Percent Scheduled Revenue Service Hours: Ratio of revenue hours served to scheduled revenue hours.



Running Time Adequacy: Percentage of timepoints/trips with insufficient, excess, or sufficient run time.



Lessons

- Acquire data dictionaries / schematics ASAP
- Data
- Allow
- Thorc
- Maint
  result

References

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