Three Languages for Urban Mobility

Addressing the 21st Century Urban Mobility System with Information Systems Techniques

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The Problem

'Wicked problems (Head, 2008):

- Complex – beyond one discipline
- Open-ended - difficult to define
- Intractable - "Standard solutions" don't work'

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Why Information Systems?

Can we say that the Urban Mobility System essentially *is* an information system?

If so, we can address it with the vocabulary, techniques and perspectives of complex information systems.

What works in Information Systems?

- Manageable development approaches (Agile)
- Data management approaches
- Stakeholder-centric thinking
- Requirements management
- Design science for complexity
- Object-orientation
- Patterns thinking

But also,

- Management Science - decision sciences
- Data Science techniques and tools:
- Unstructured data mining (text)
- Machine learning
- Asymptotically efficient processing of 'big data'

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Conclusions

These techniques are being applied in different pieces and parts. There is an emergence..

But there does not seem to be a holistic, integrated, data-driven, analytics-oriented approach to decision-support for the UMS in a large city, that accommodates bi-directional information flow and addresses the system at three levels: individual traveler, system operator, and infrastructure planner.

This is my dissertation 'pitch.'

Thank you!

"MAY I STAND ON YOUR SHOULDERS NOW?"