

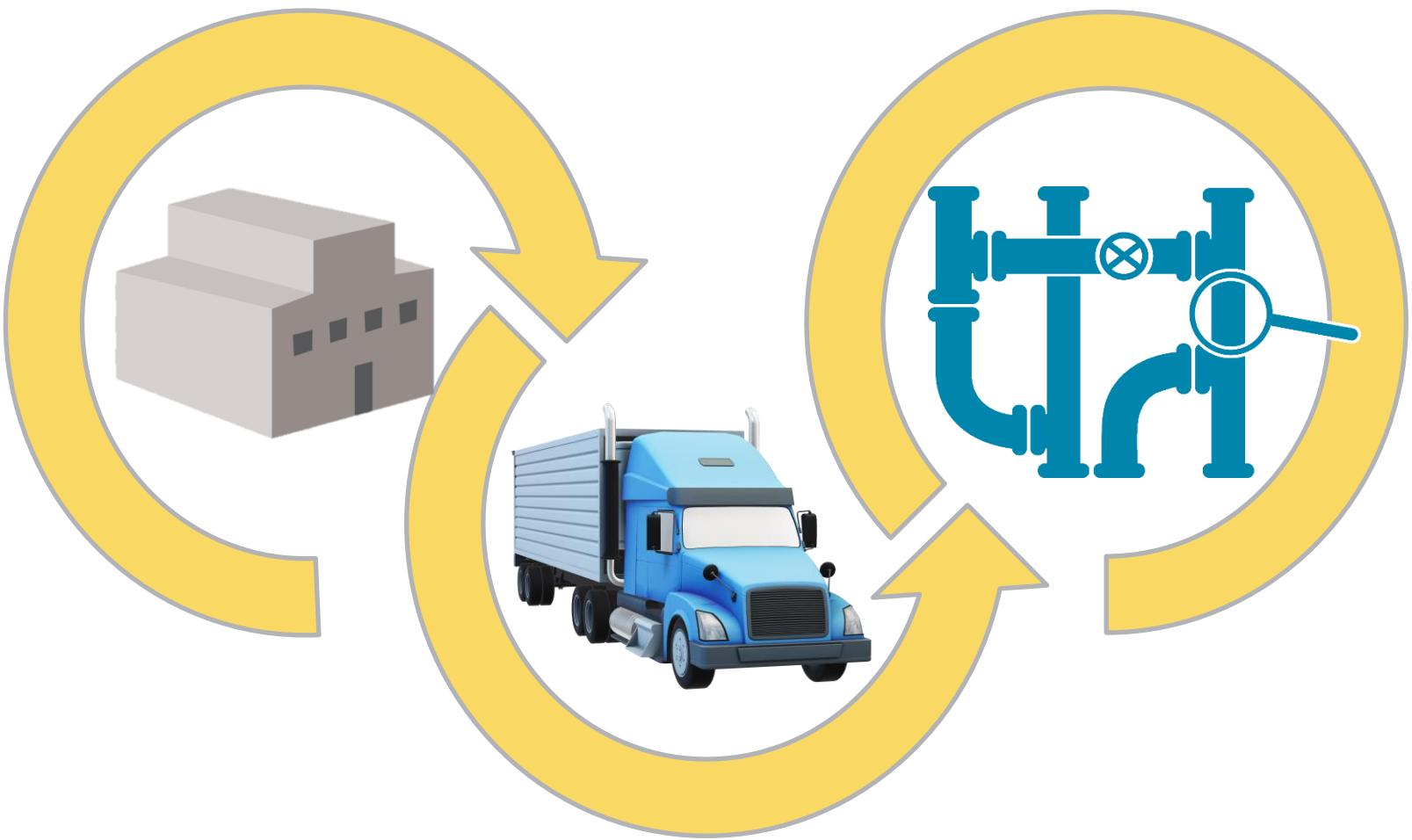
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 Sponsor: Xylem

# Optimizing the Logistics Network for Pipeline Inspection

May 2021 Poster Session

## Motivation / Background

Part of Xylem’s business is to provide services to utilities to determine the pipeline condition. Given the volume of different tools and equipment, Xylem has a complex logistics network we’ll look to optimize.



## Key Question

What is the optimal flow of products on Xylem’s network to minimize logistic costs?

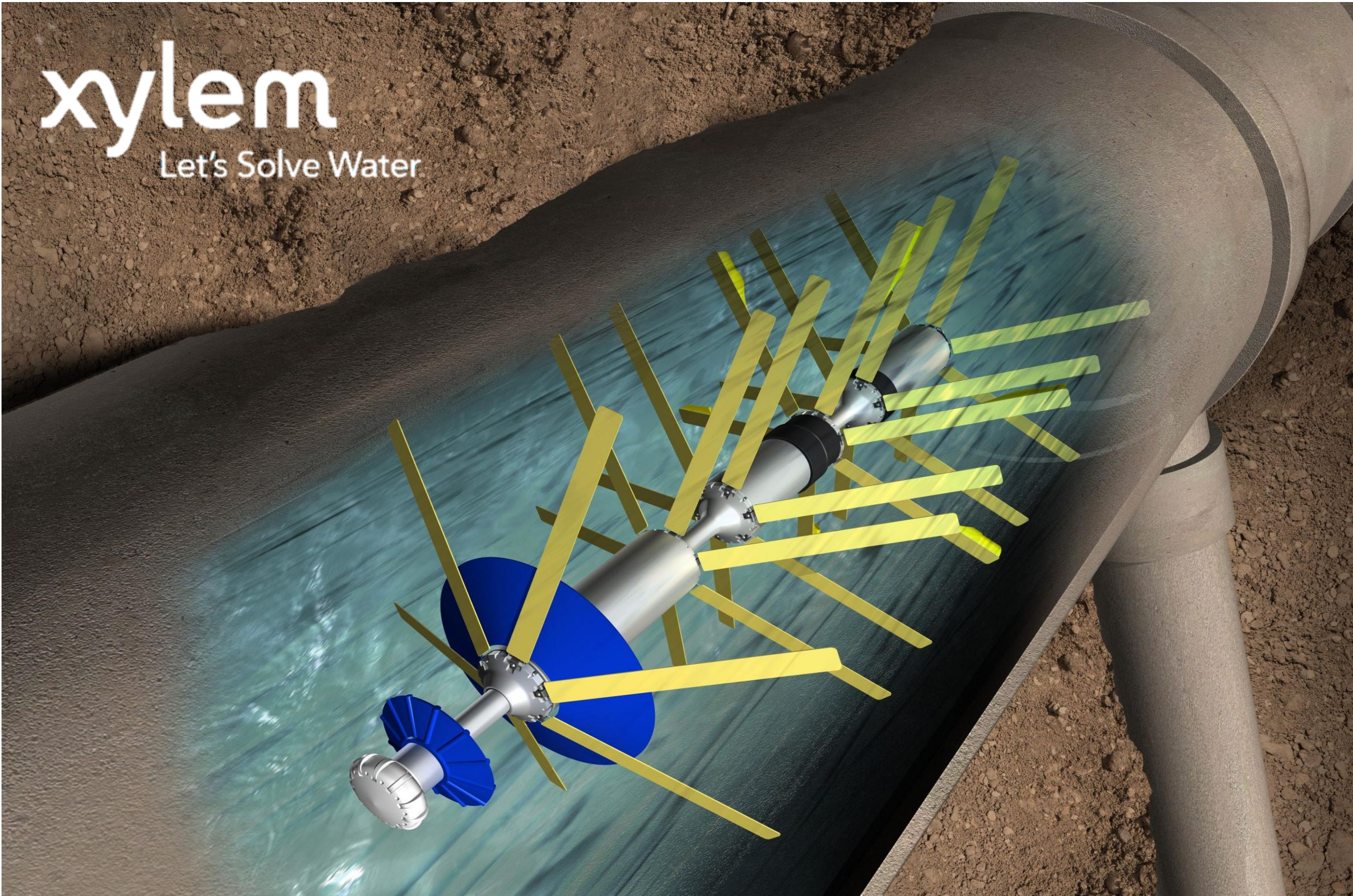
## Relevant Literature

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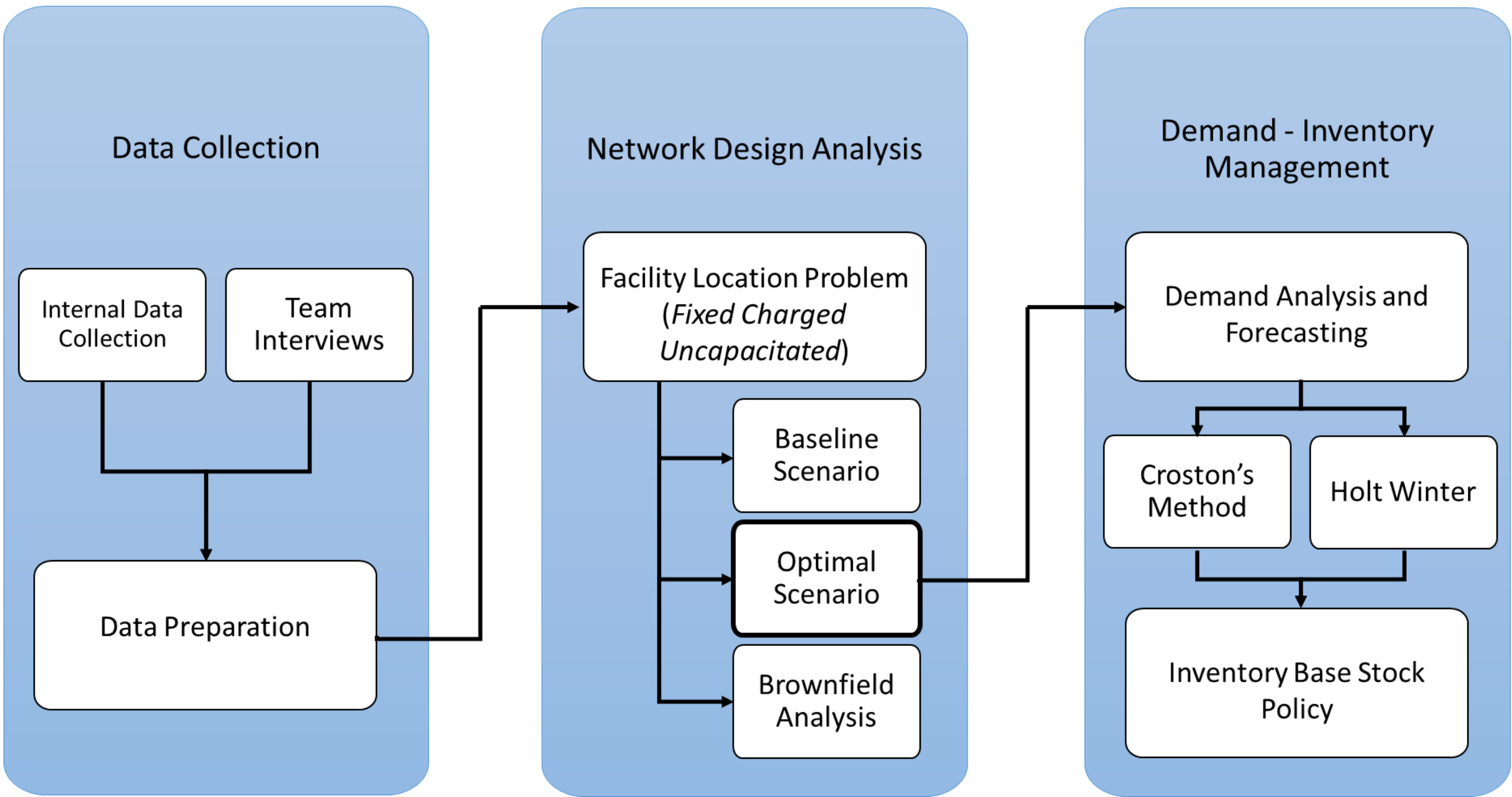
Manzini, R., & Bindi, F. (2009). *Strategic design and operational management optimization of a multi stage physical distribution system*. *Transportation Research Part E: Logistics and Transportation Review*, 45(6), 915–936.

Farahani, R. Z., Rashidi Bajgan, H., Fahimnia, B., & Kaviani, M. (2015). *Location-inventory problem in supply chains: A modelling review*. *International Journal of Production Research*

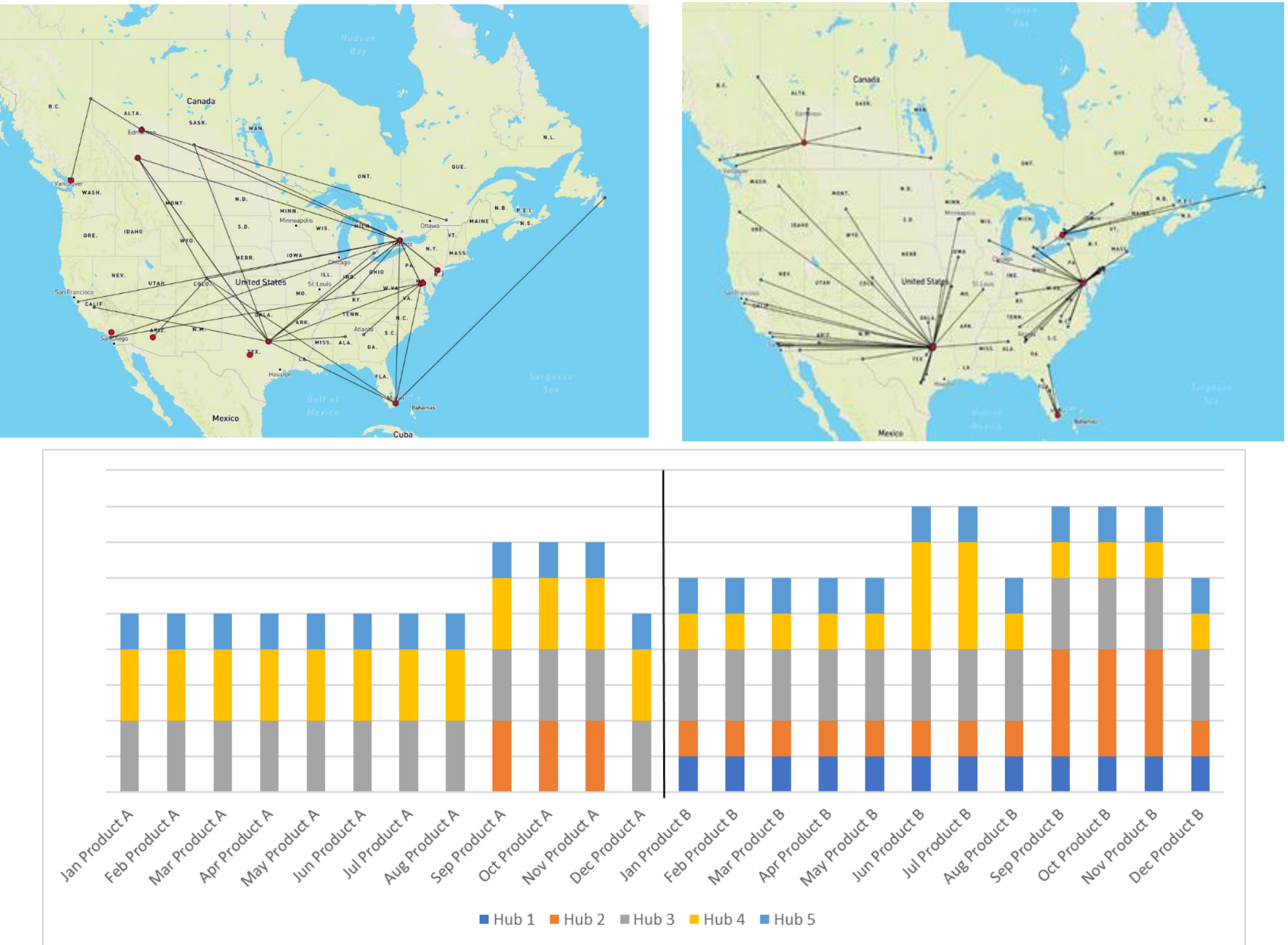
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## Methodology



## Results



- Optimizing the network and creating a baseline inventory policy could reduce the number of inefficient shipments. Additionally, the proposed optimized network can lead to a 30% total mileage reduction of shipments, by reducing cross-border shipments and streamlining the operations.

## Conclusion

- Valuable insights into cost saving opportunities and inefficiencies in a network are easy to spot when the network is mapped out and evaluated.
- Baseline inventory models can identify cost savings when there is not enough data to create an accurate demand forecast.