

Identifying Collaborative Shipping Opportunities



**Jeroen
Beliën**



**Stefan
Creemers**



**Robert
Boute**



**Gert
Woumans**



A meeting of friends: Jeroen

Reality



Role Today

Owner of Spalding


SPALDING

Production of
basket balls



A meeting of friends: Stefan

Reality



Role Today

Owner of Asics



Production of
running shoes



A meeting of friends

Role Today

Owner of Spalding


SPALDING

Production of
basket balls



Reality



Reality



Role Today

Owner of Asics


asics

Production of
running shoes



Horizontal Cooperation

- **What** = cooperation where companies bundle their orders/join shipments
- **Why** = to reduce transport costs, CO2 emissions, and congestion
- **How** = by using the available space in truck hauls of one company to ship items of another company
- Vertical cooperation = cooperation with companies at different level of the supply chain (e.g., supplier & buyers)
- Horizontal cooperation = cooperation with companies at the same level of the supply chain

Examples of Horizontal Cooperation



Tupperware

P&G



Nestlé

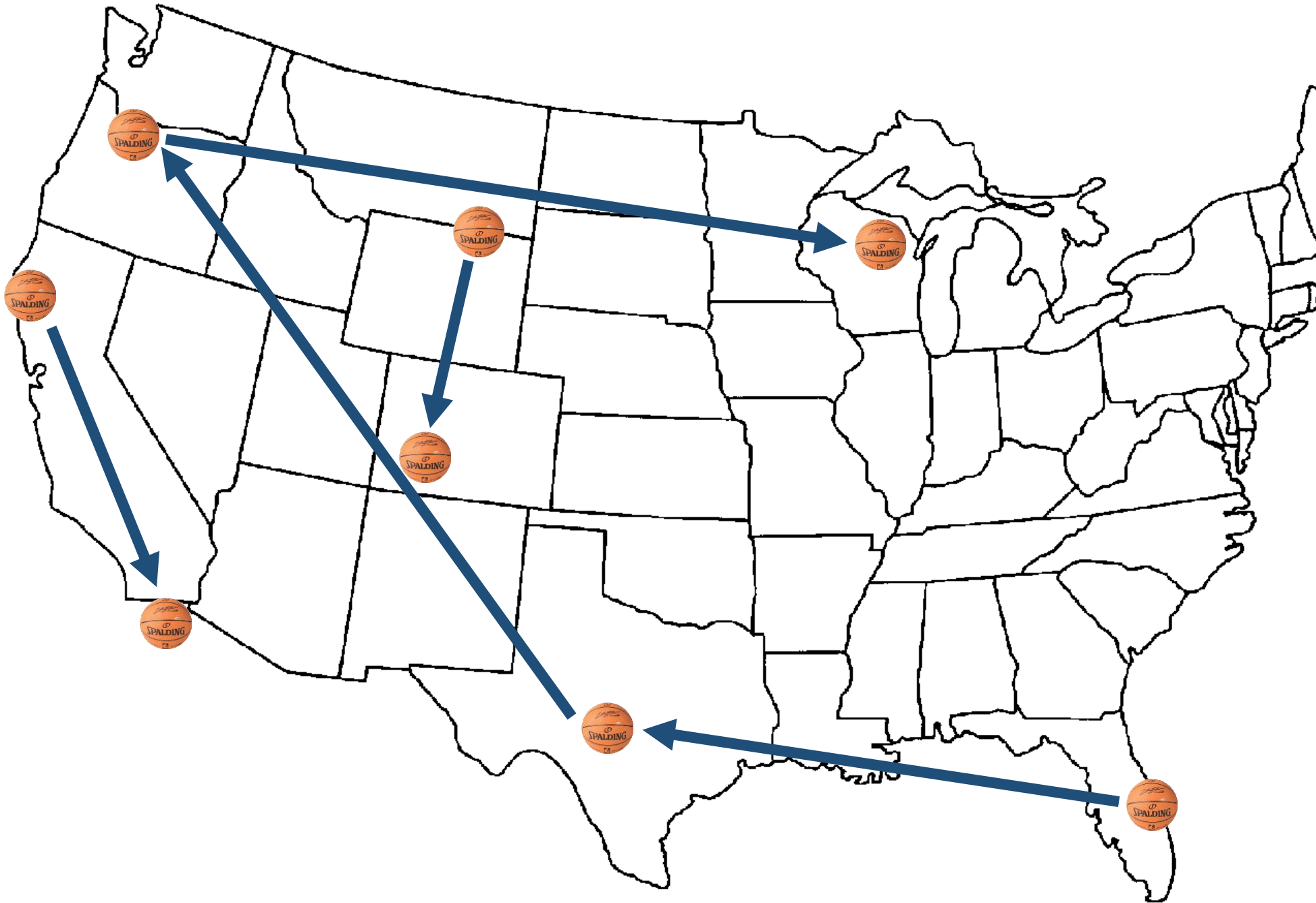


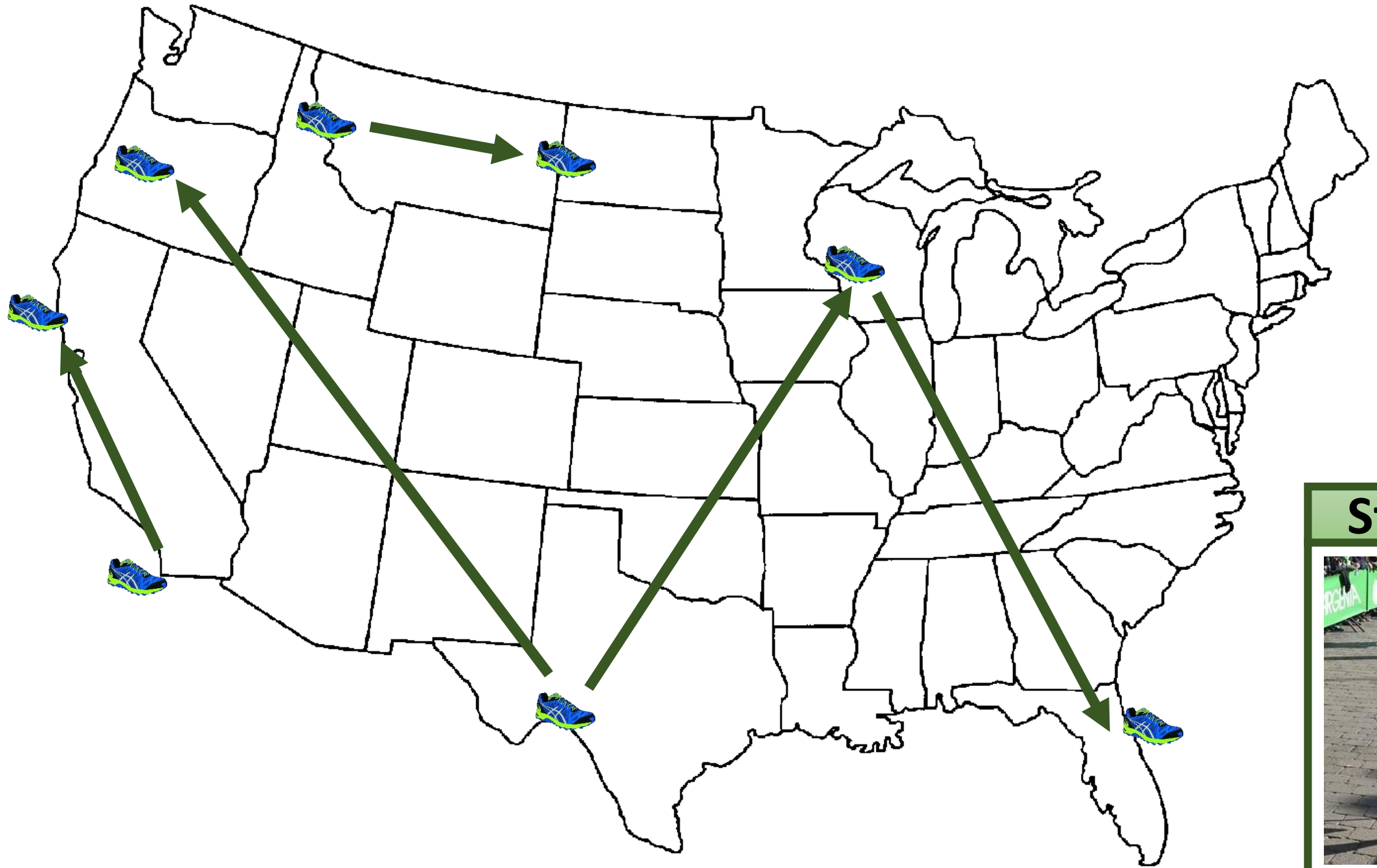
pepsi



Baxter

Jeroen



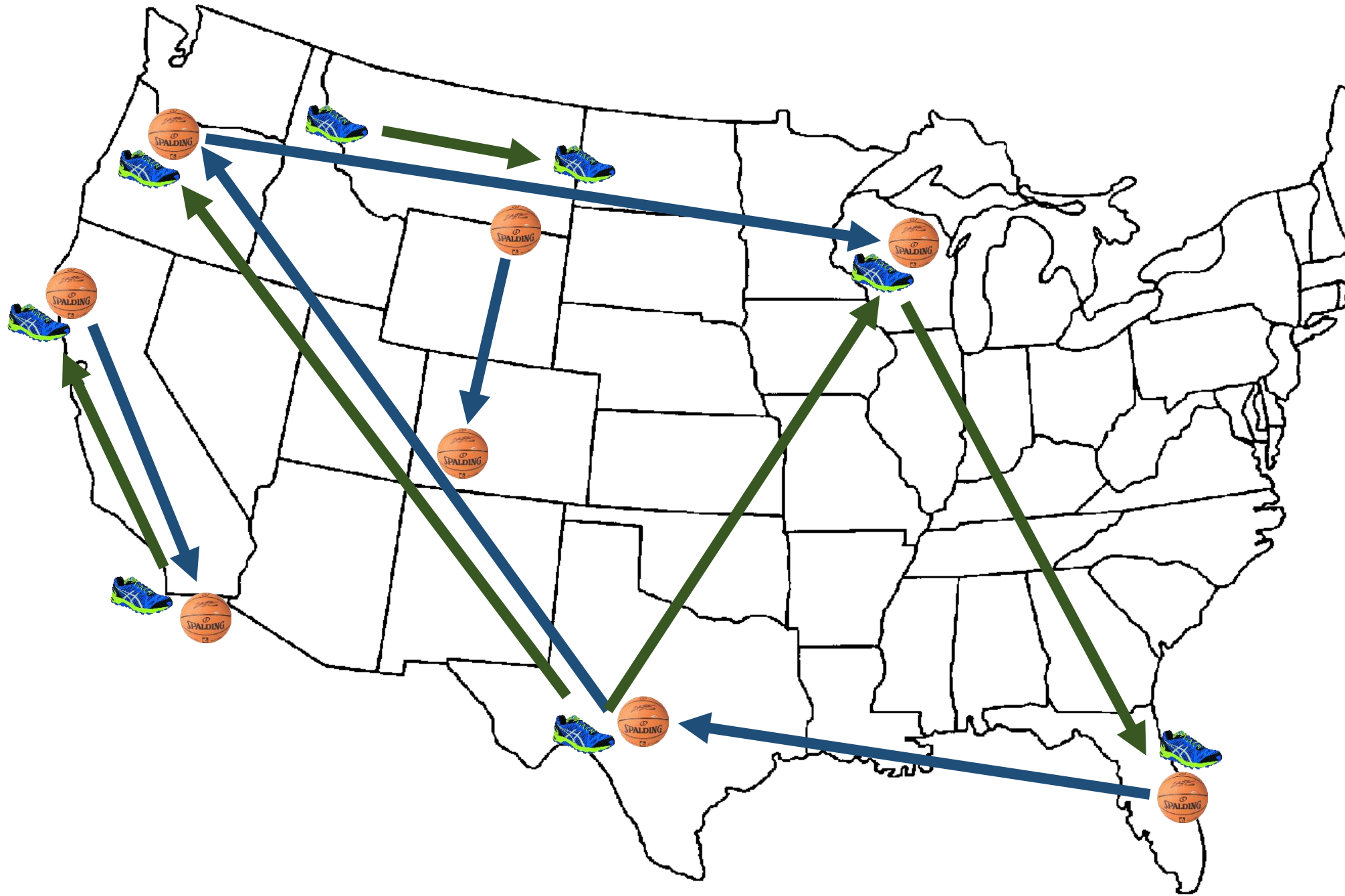


Stefan

Jeroen



Stefan



Jeroen



Stefan

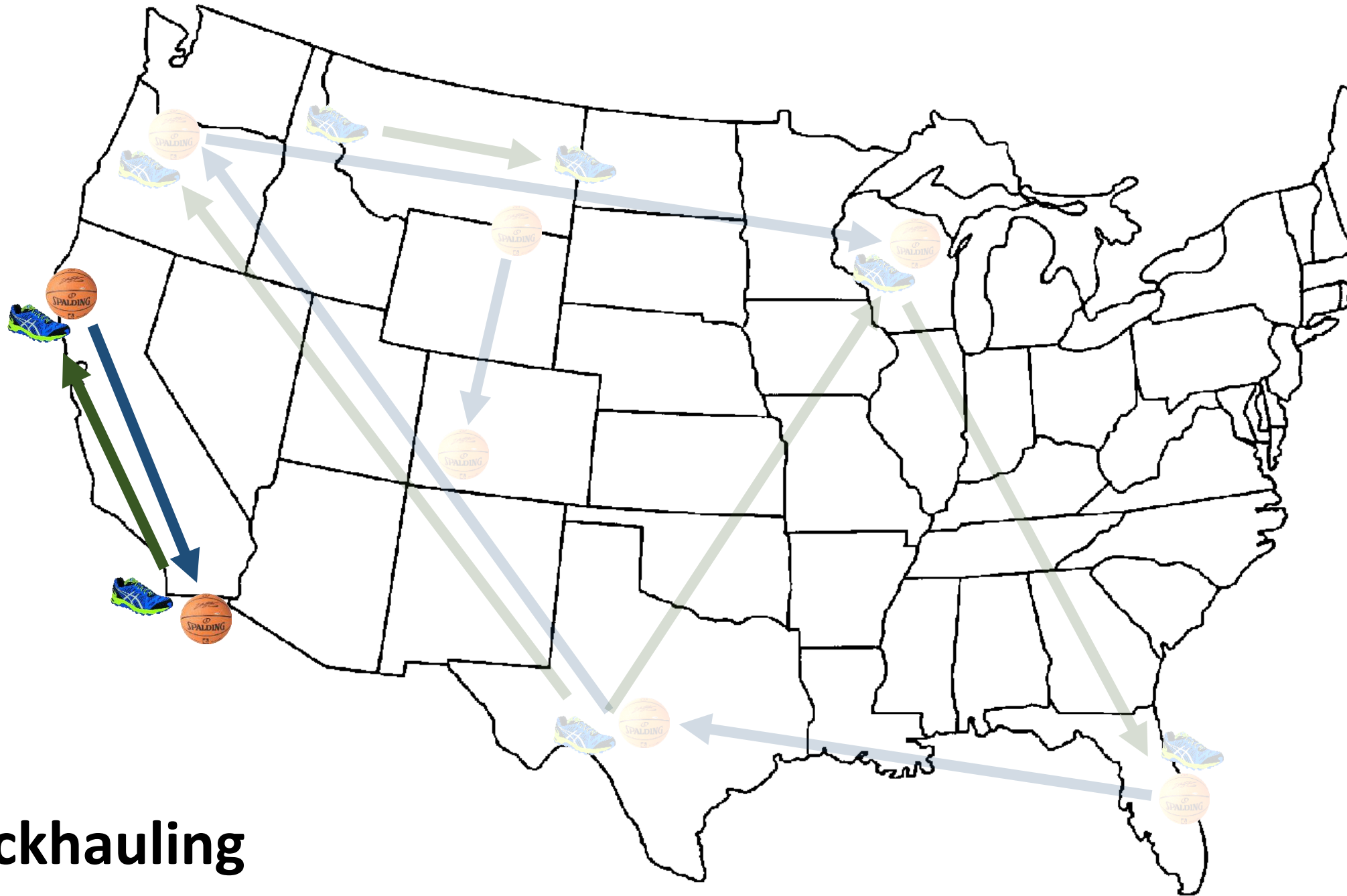


Bundling

Jeroen



Stefan

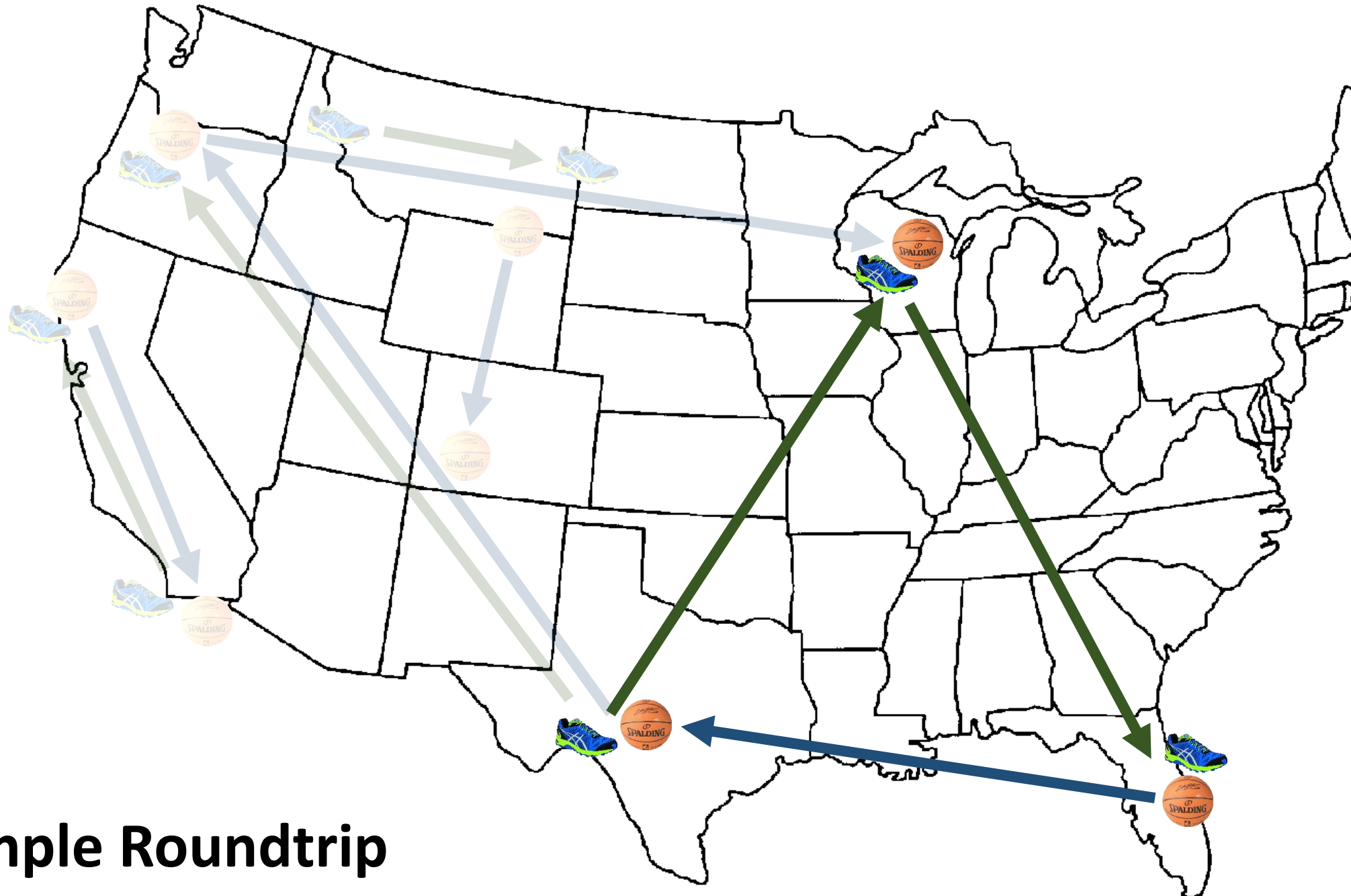


Backhauling

Jeroen



Stefan

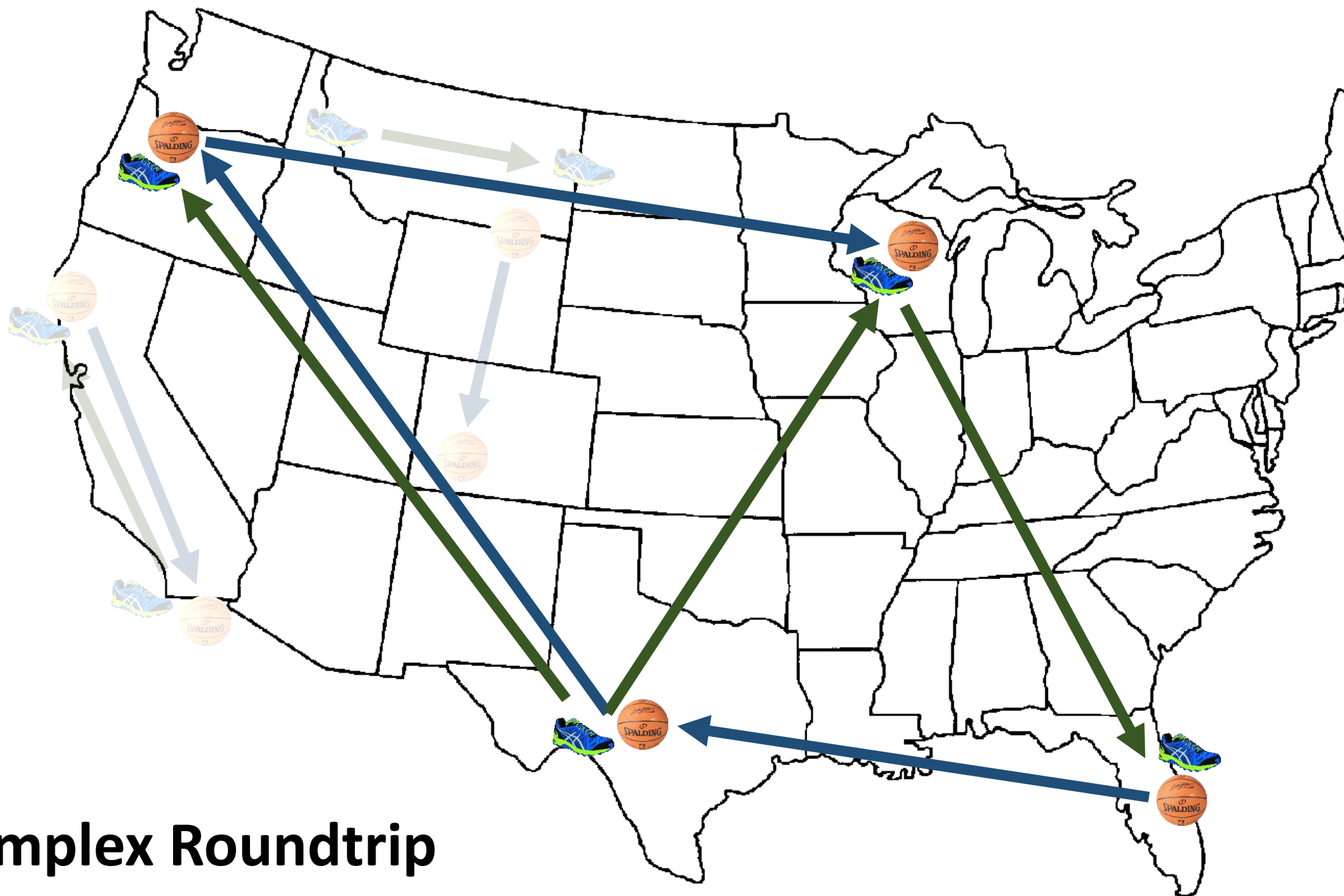


Simple Roundtrip

Jeroen



Stefan

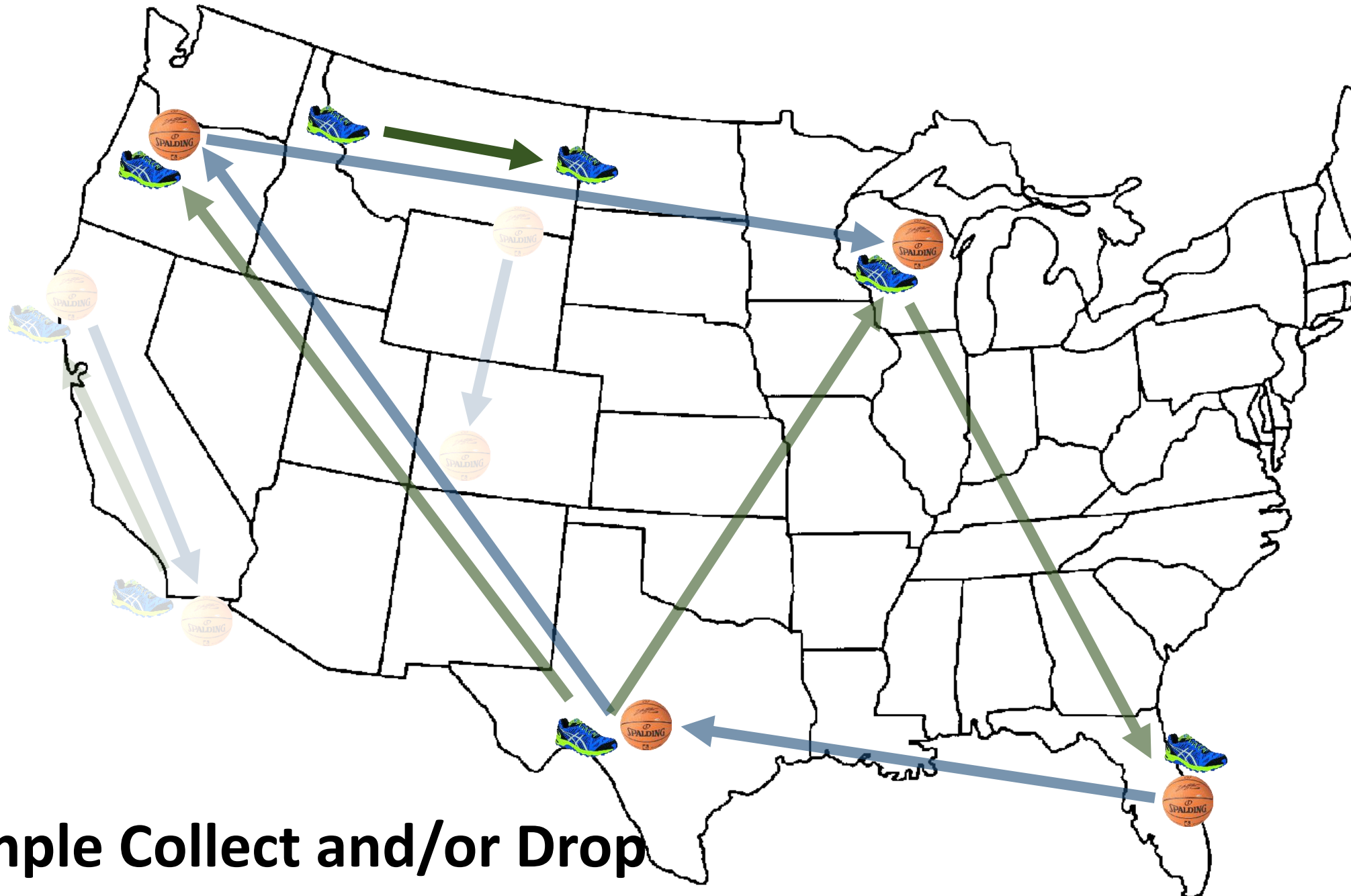


Complex Roundtrip

Jeroen



Stefan

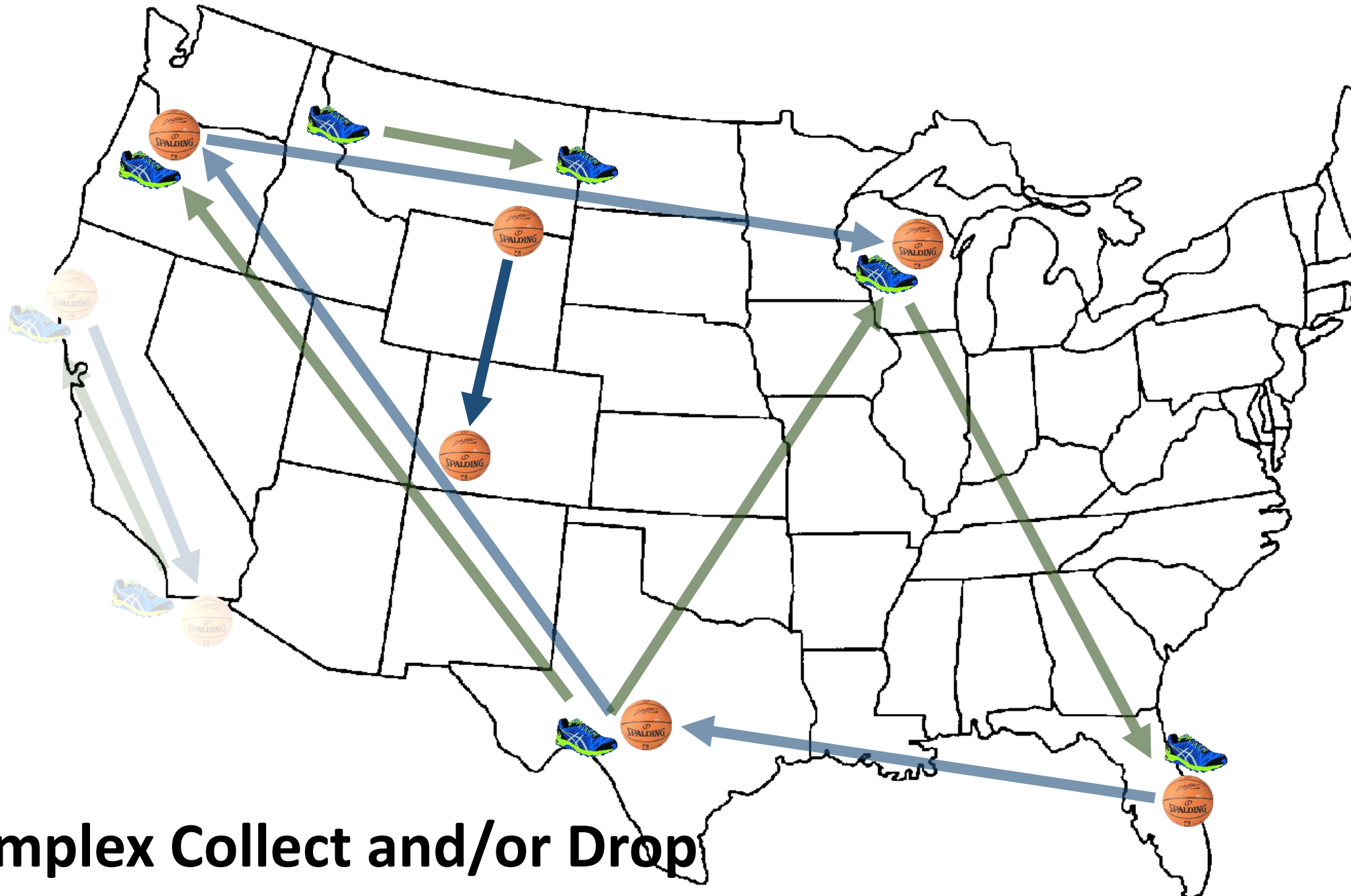


Simple Collect and/or Drop

Jeroen



Stefan

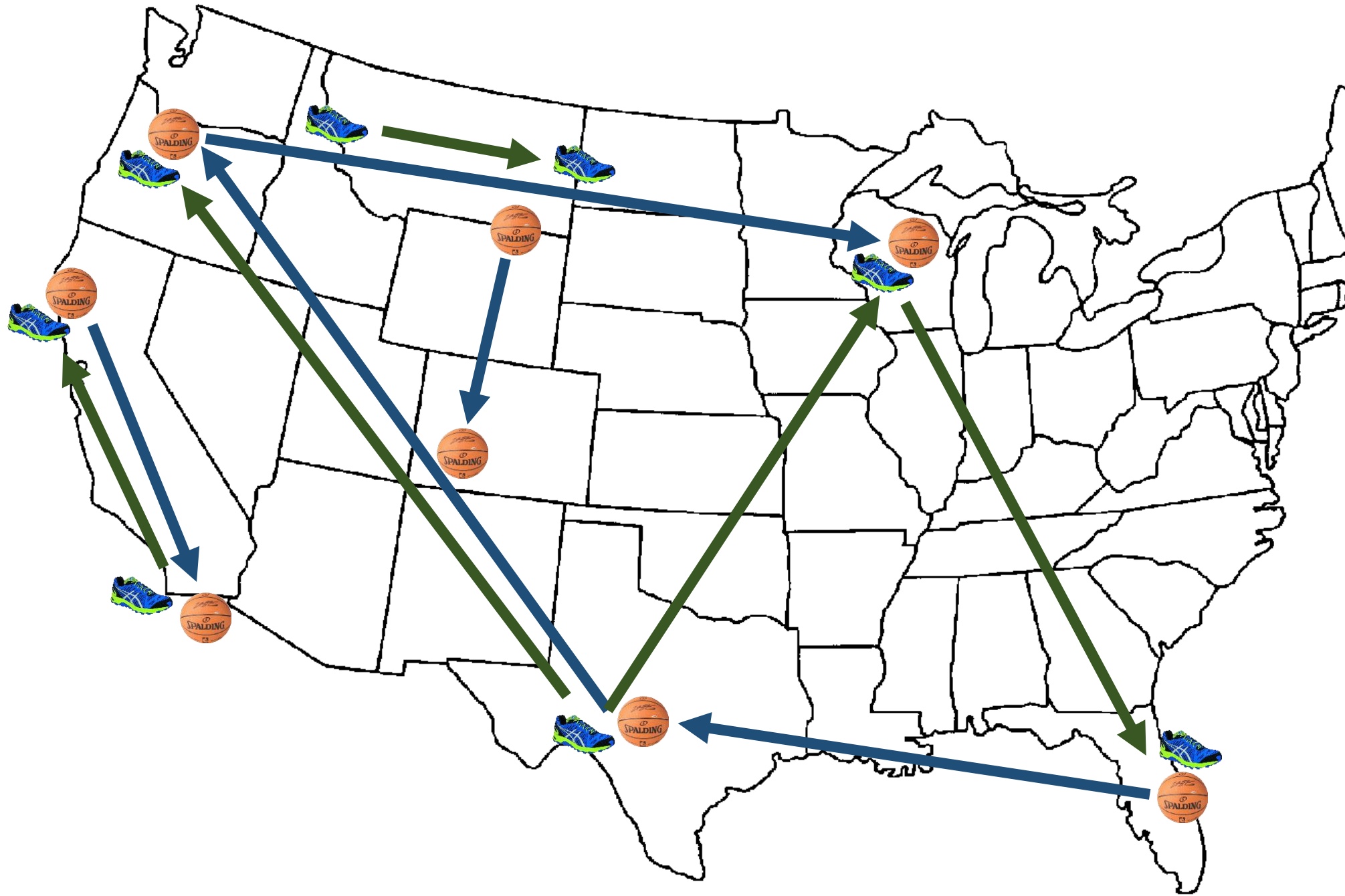


Complex Collect and/or Drop

Jeroen



Stefan



What is a **good** opportunity?

- Total Distance/volume/tkm
- Shared distance/volume/tkm
- Ratio of shared distance/volume/tkm
- Closed distance/volume/tkm



BBaRT: Bundling, Backhauling, and Roundtrip Tool

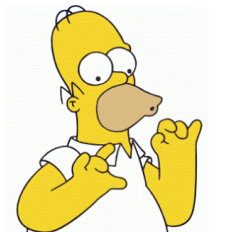
- **What** = tool that identifies bundling, backhauling, roundtrip, and collect and/or drop opportunities in a large database of transport lanes
- **Why** = impossible to analyze a database of 100,000 transport lanes manually (or even using Excel)
- **How** = clever combination of a bounding-box approach, sorting, and efficient search algorithms
- Collect and/or drop opportunities are found by rotating the system of coordinates
- Implementation of the opportunity itself is done at a later stage, we only care about identifying the best opportunities



Interfaces



Creemers Stefan, Woumans Gert, Boute Robert, & Beliën Jeroen (to appear). [Tri-Vizor](#) uses an efficient algorithm to identify collaborative shipping opportunities. *Interfaces*.



TRI = VIZOR

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