Sustainability and efficiency; conflicting objectives in Logistics? Some practical insights

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My logistic experience of today

Waste of time, longer and polluting (and more stressful)
Some ideas for improvement

- Local Traffic Control
- Bundling
- Variable pricing of parking space
- Real time route guidance

Algorithms required!
Sustainability; the practical way?

Kilometers

CO₂ emissions

Sustainability
Or is there more to it?

Source: www.greenbiz.com
Case: Sustainable supply chain design
Which one is best?

Cheap, sustainable and slow

Fast, expensive and polluting

How to decide on alternatives?
Some Figures

Emmision per Metric Ton/KM

CO₂ Emissions

- B747 Cargo
- Truck/Lorry
- Train
- Ship

X 12,5
Conflicts of Interest

Sales

“Sustainable? Why bother, we need the revenue”

Supply chain design

“You can’t sell that, it’s impossible and will destroy our carbon footprint”

Operations

Customer

“We have a Sustainable image! (but want it cheap)”
Let’s have a look at the facts

Scenario’s

Input

Volume

Supply Chain structure

Cost parameters, service requirements

Output

Judge and select preferred scenario

Yearly cost
Different aggregation levels.
For each link in the SC.
Score on evaluation criteria
A picture...
Sustainable supply chain design

Air
Service
Cost
\( \text{CO}_2 \)

Sea
Service
Cost
\( \text{CO}_2 \)

Efficiency
Sustainability

1
2
3
4
5
6

1. Air Service
2. Air Cost
3. Sea Service
4. Sea Cost
5. Air \( \text{CO}_2 \)
6. Sea \( \text{CO}_2 \)
Joint decision making

Customer retention
1. Optimised performance
2. Increased agility
3. Attain sustainability objectives
1. Increased exit barriers
2. Smarter offering
3. Increased revenues

Increased revenues
1. Cost reduction
2. Agile and sustainable supply chain design
3. Improved service capabilities

Sales

Supply chain design

Operations

Customer
Modelling & Sustainability

Business analysis
Key performance indicators

Modelling
What-if analysis

Optimisation of integrated supply chain
Innovation

Sustainable & Efficient Operations!
About John Poppelaars

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“Improve Decision Making”

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