Industrialization of the Chemical Supply Chain: Current Status and Future Trends

Agenda:

- Background: The „Industrialization of Services“
  - A focus on „Chemical“ and the „Chemical Supply Chain“: Facts from a recent study
  - Into some detail: Industrialization developments in the European Land Transport Industry
  - Beyond transport: Is there such a thing as „Supply Chain Industrialization“?
  - What does this all mean: To Chemical Industry Shippers? To Logistics Service Providers?

I-1. The pioneers of Service Industrialization – in academia:
Ted Levitt „Production Line Approach to Service“ 1972 and „The Industrialization of Service“ 1976

- first Supermarkets 1950’s
- McDonald’s
- American Express
- now:
  - Amazon
- brought to transport and logistics by
  - UPS (Parcels)
  - McLean/SeaLand (Ocean Containers)
- many others:

I-2. ... and the pioneers from the „real“ business world...

- Systems & Technology
  - Standardized – No Value Processes
  - Clearly defined Products
  - Marketing
- SCM Contract Logistics?

I-3. ... followed by consecutive waves of „Industrialization“ in other segments of the logistics industry

- FTL -Industrializing now
- Intl. Air/Ocean Forwarding Start 90-er
- Paket/ Global Express Start: Mid 70s
- LTL Networks since late 80s
- FMCG-Distribution Start 90-er
- Ocean-Container Networks
I. Chemical industry logistics (incl. mineral oil data)
- Market overview
- Stages in the chemical industry value chain and related LSP business models
- State of supply chain optimization efforts and areas for future improvement
- Lessons learned

II-3. Global chemical industry sales (2012 incl. Pharma – ca. 20%)
- Total chemical industry sales „manufactured bulk and special chemicals“
  - Pharmaceuticals: ca. € 42 bill.
- Share chemical exports in €
  - ca. 51%
- Chemical goods wholesale revenues
  - € 45 bill.
- Value density manufactured goods €/ton
  - ca. 1,800

II-5. Revenues of „top 20“ chemical logistics service providers (Germany, data as of 2011)
- Est. total „outbound tonnage equivalent“ of manufactured chemicals from German
- applying the „factor x rule“ for EC(E) volumes:
  - ca. 800 mill. tons: € 60 bill.
- Domestic logistics expenditure in German
  - € 9.6 bill. – ca. 74% of total logistics expenditure
  - ca. € 7.2 bill.

II-4. Current tonnage volume: some „roughcut“ estimates
- default tonnage volume roughly reconciled with transport statistics BMVBS (2011: 256)
- Est. Log-Cost%
  - 64% of sales
- Domestic logistics expenditure in German
  - ca. € 15 bill. – ca. 12% of total logistics expenditure
  - ca. € 13 bill.

II-6. The chemical industry Supply Network
- Raw Materials
- Petrochemicals
- Chemicals
- Polymers
- Finished Goods
- Online information
- B2C Wholesalers
- Retail
- Consumers

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III-1. Transport Industrialization widely accomplished:

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III-2. Transport Industrialization (widely) accomplished: The European CEP and LTL network service providers

III-3. Moving forward now: The European truckload ("LTL") service provider industry on its path from the traditional "craft" service mode to Industrialization...

III-4. ... adopting some characteristics from US "Advanced Truck Load Firms (ATLF)" business Model means:

- Geographically distributed customer base
- Geographically distributed fleet and ops bases
- "Single-Point" customer contact
- computer assisted dispatch, satellite based localization, driver (and trailer) control
- Standardized equipment
- also: intelligent pricing
- Option of cross-selling "Packages" with "Dedicated" Fleets, Contract Logistics, Administrative Services (Freight Payment)

Economies of Scale through "Network effects".

III-5. ... especially: leveraging "scale" effects from focus on regularized freight flows along "power-lanes" and evolving networks

- Making trade-lanes "origin-destination pairs" the basic unit for managing the business and profitability
- Offering single point responsibility for transport moves on given trade-lanes
- Eliminating settlement issues between terminals/profit-centers involved
- getting to full dispatcher concentration on balanced "rotations" of equipment and trade-lane loop efficiencies
Systems supported price differentiation for... 

Into some detail: Industrialization developments which have not been fully explored yet... 

What does this all mean: To Chemical Industry... 

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• systems supported price differentiation for...
  - Regularity of loads/shipment offered
  - Bonus for extended pick-up and delivery time-windows
  - Bonus for extended time-windows for loading/unloading operations (exspa, with „Vendor Managed Inventory“)
  - ... for preloaded trailer/swop-body operations
IV-2. Precondition for successful shipper-side: Supply Chain Industrialization

V-1. Precondition for successful shipper-side: Supply Chain Industrialization: Viewing the entire network ...

V-2. Precondition for successful LSP business development: Viewing the entire network ...

Selected Sources and Readings:


Thank you!
Appendix: voluntary logistics industry initiatives related to reporting, employee motivation, education, intelligent use of available technology...