Challenges Ahead in Purchasing/Logistics

Emerging Market Sourcing

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Volvo Powertrain Corporation
The Volvo Group
The Volvo Group Organisation

Business Areas

- Mack/ North America
- Renault Trucks
- Volvo Trucks
- Buses
- Volvo CE
- Volvo Penta
- Volvo Aero
- Financial Services

Business Units

- 3P
- Powertrain
- Parts
- Information Technology
Maintaining Strong Positions

- Volvo Aero
  - World leading in development and production of selected engine components.
  - Engine components from Volvo Aero is included in 80% of all new larger civil aircrafts.
Turnover in specific Markets and Relative Sizes of Business Areas 2003

Total Sales SEK 175 bln

Turnover in specific Markets

Europe 60%
North America 24%
South America 3%
Asia 9%
Others 4%

Sales per Business Area

- Trucks 67%
- Construction Equipment 13%
- Buses 7%
- Others 4%
- Volvo Penta 4%
- Volvo Aero 5%
“Global” Market Position

Heavy Duty Vehicles – 2003 (preliminary)

1,000 units

DCX
Volvo
FAW
DongFeng
Paccar
Scania
MAN
Iveco
Intern'l

DCX
• Mercedes 77
• Freightliner 63
• Sterling 11
• Western Star 4

Volvo Group
• Volvo 73
• Renault 33
• Mack 19

PACCAR
• DAF 32
• Kenworth 24
• Peterbilt 20
• Foden 1

Other
• Kamaz 24
• CNHTC 21
• BIAC 16
• Chongqing 16
• Isuzu 21
• Hino 18
• MMC 16
• Nissan D 15
• Shaanxi Auto 12

1) Updated 2003-03-03
Heavy Duty Truck Market
Europe 25

Units, Thousands (heavy trucks)

Forecast:

Western Europe
Europe 25
Forecast
Heavy Duty Truck Market
North America

Units, Thousands (heavy trucks)

Forecast: 230-240
Volvo Group Expansion in China
Volvo Group Invests in China
- Substantial market potential

- Extensive expansion of the expressway system
- Substantial sourcing opportunities
- GDP growth rate: 8% over four years
- Chinese entrance in WTO opens up for business opportunities with mutual development
- Some 90 cities with more than one million inhabitants
- 20% of the earth’s population
China’s Expressway System by 2010

Source: The world factbook, EU Energy & Transport in Figures 2002, VCIC
Volvo Group in China 2003

Group Sales Development

MUSD

1998 1999 2000 2001 2002 2003

71 308

Employees incl. J/V: 1900

Source: VCIC, VEGA
Volvo Group Sales in China
Per Business

- Trucks: 28%
- Buses: 30%
- Construction Equipment: 25%
- Volvo Penta: 13%
- Volvo Aero: 4%

Total Sales: 308 MUSD

Source: VEGA
AB Volvo
Press Information

Beijing March 29 2004

Volvo signs Engine Cooperation Frame Agreement covering engine manufacture in China

Volvo CEO Leif Johansson signed a Engine Cooperation Frame Agreement today in Beijing with the truck manufacturers China National Heavy Truck Corporation (CNHTC), and First Automotive Works (FAW) covering the establishment of a jointly owned engine plant in China. The plant will manufacture complete engines for Volvo’s various business areas in China and for CNHTC’s and FAW’s trucks.
Volvo Powertrain in China
Co-operation for Engine Production

Frame agreement for a J/V between Volvo, CNHTC and FAW
- Ownership: 52% for Volvo; 24% for FAW; 24% for CNHTC
- Produce future engines based on Volvo platform and technology
- Total investment USD 200 million; Volvo ~USD 105 million
- Annual production 50,000 engines
- Production start in 2006
Volvo Truck Corporation is today inaugurating a new factory in Jinan together with its Chinese partner, China National Heavy Truck Corporation (CNHTC). The new factory will build Volvo trucks for the growing Chinese market. The factory has initially a capacity of about 1,200 trucks a year.
Volvo Trucks in China
JV agreement with CNHTC

Jinan Huawo Truck Co. Ltd
- Ownership 50/50%
- Registered capital 72.3 MUSD

Status
- Business license and company registration in place
- Import license received
- Inauguration March 31, 2004
Main EMS countries of origin

- INDIA
- TURKEY
- MEXICO
- CHINA
- POLAND
- KOREA
- BRASIL
Logistics Golden Rules

1) Support the plants logistics requirements.
2) Target lowest Total acquisition cost.
3) Integrate logistics starting with the inception of projects
4) Optimize communication with suppliers
5) Use the packaging system to support the work station and to be a factor towards the lowest Total Acquisition Cost
6) Perform logistics evaluations and Monitor supplier performance
7) Follow the 3M Flow Strategy
8) Request all suppliers to deliver from a point where the reaction and lead time demands can be met.
1) Support the plants logistics requirements

☑ Ensure product/part quality from supplier to point of use.

☑ Deliver the right material to the right place at the right time in the right quantity.
  ✓ Delivery methods must support the plants requirements e.g: Line-sequence, Kan-Ban, Batch delivery; direct to line where suitable, Kitting, Vendor Managed Inventory …

☑ Support a modular product concept.
  ✓ A short main assembly line and variation taken in pre.-assemblies.
  ✓ Diversity and volume should occur at the end of the process.
  ✓ Sub-assembly should be done as close to point of use as possible.

☑ Support the work station ergonomics and efficiency.
  ✓ Respect the weight, height and packaging recommendations
  ✓ Support the 100% Face Ratio objective
4) Optimise Communication with suppliers

✓ **Target 100% Electronic communications (EDI / Web EDI)**
  ✓ Efficient communication “from business application to business application” of relevant and accurate information, with appropriate frequency,
  ✓ **Request EDI communication between tier 1 and next tier suppliers**

✓ Manage supplier relationship to become the preferred customer (ref. to rule #6)

✓ Aim at a common way of working and common IT-solutions within 3M,

✓ **Firm production schedule** should be the base for final material release and delivery instruction.
6) Perform logistics evaluations and Monitor supplier performance

- Verify suppliers self-assessment and/or perform Logistics evaluation according to the AIAG and ODETTE document (i.e. MMOG/LE, part of the SEM). See Purchasing Quality Procedures #12

- Perform continuous measurement of dispatch precision (right quantity, right time) and provide result to purchasing systems, and to suppliers if required,

- Use supplier performance and logistics evaluation results for supplier relationship management with the target to improve total performance

- Monitor suppliers progress on agreed improvement areas,
8) All suppliers must deliver from a point where the reaction and lead time demands can be met

- Long distance suppliers must meet prescribed requirements regarding support and reaction time
  - They must deliver from a Pick-up Point if a normal transport time is more than 3 days, or a rush transportation time is more than 24 hours
  - The Pick-up point should be as close to the production process as possible
- The supplier takes full responsibility and ownership up-to and including the pick-up point
  - All logistics costs (e.g. transportation, packaging, warehousing...), up-to and including the pick-up point shall be included in the parts price
- Delivery conditions shall refer to the pick-up point. Purchase orders should mention “2000 Incoterm FCA agreed platform and site” (buying Incoterm) and state that customs will be cleared by the goods receiver.
  - Purchase order should mention “2000 Incoterm DDU agreed platform and site” (buying Incoterm) if the supplier is delivering up to the factory/use point.
Global Supply Chain - 4 flow strategy

I. Local supply

II. Module / System suppliers

III. Long distance suppliers

IV. Supply of small parts (one provider)
Long distance suppliers must deliver from a pick-up point where the reaction demands can be met

Supplier responsibility and ownership

Brand responsibility and ownership

Supplier

Packing-Material
Transportation
Warehousing
Pick & pack
Sequence
Sub assembly

Pick Up Point

Incoterm from this point

VPT Final user

Brand Defined packaging
Transportation

Volvo Powertrain Corporation
Klas Sandrén, 2004-11-30, Issue 01
EUROPEAN HUB LOCATIONS

- Gothenburg
- Gent
- Lyon

- Main hubs
- Potential satellites
LOGISTICS SERVICE PROVIDER GENERAL DEMANDS

✓ Global representation Offices
✓ Pick up point in domestic Europe (preferable France and Sweden) and US
✓ Customer experience from automotive industry or other major business
✓ Warehouse facilities
✓ Possibility to deliver same product to different VPT locations
✓ EDI / WEB EDI
✓ Delivery call-off fulfilled in a very short time
✓ 100 % delivery precision
✓ Proactive material controlling: close co-operation with the supplier
✓ WEB stock tracking tool
✓ Customs agreements (CBW, Fiscal representation...)
✓ Repacking, picking, sequencing operations
✓ Final assembly and customer modified
Logistics service providers
long distance suppliers
delivering to European PT plants

EXEL
Geo-logistics
Kuhne & Nagel
Pan-alpina
Schenker
Volvo Logistics
Volvo Supplier Integration
http://suppliers.volvo.com/
VPT Purchasing
A World Class Supplier Base

Fewer suppliers, world class suppliers
- To leverage our new global dimension and volumes
- To lower development cost and investment cost
- To foster early supplier involvement, target costs, quality breakthrough

800 Suppliers, 3 different supplier bases

Already done: <100 suppliers for HDEP
<50 Transmissions

2007
<300 Suppliers, 1 global supplier base
Second Step – Optimize collaboration with suppliers

- Our supplier base is accountable for a very large part of our product quality and cost.

- Our supplier base represents also a tremendous power in terms of R&D, manufacturing, product knowledge and market presence (Some suppliers are even bigger than us).

- Getting the best out of our supplier base in all means, will allow us to build a unique competitive advantage.

First condition of success – having a small world class supplier base – is achieved.

Second step is to optimize the collaboration with our suppliers through VPT Extended Enterprise.
Volvo Powertrain’s Collaboration Vision

Turn our now small supplier base to an additional competitive advantage

- By optimizing our efficiency working together.
- Not only between Volvo Powertrain and suppliers, but also between suppliers.

Volvo Powertrain Extended Enterprise will be the structure behind this vision.
Thank You for listening!

Questions ?
Extra Slides
Conclusion

1. Few suppliers

2. Reinforced collaboration

3. Manage our common business with our suppliers
   • Supplier part of Cross Functional Teams

4. Regular meetings with supplier CEO:s and within teams
   • Deliver targets and synergies
   • Prepare together 2010 and beyond
   • Take value out of our supplier chain

5. Extended Enterprise Meetings and Newsletter

Demanding but rewarding,
building a tremendous competitive advantage
China Heavy Duty Truck Sales

Heavy Duty Market ‘000 units

1999  2000  2001  2002  2003

Market shares 2003

FAW 35.8%
DMC 31.3%
CNHTC 7.9%
Chongqing 6.1%
BAIC 5.6%
Shaanxi 4.3%
Other 9.0%
Volvo 1,100
Environment

Legislative Demands - Emission Standards

- PM (Particulate Matter)
- NOx

- Euro 3
- Euro 2
- EPA 02
- Present level of technology
- Euro 4
- Euro 5
- EPA 07
- EPA 10
Alternative developments of 4PL-Providers

1. Further development of a 3PL-Provider
2. IT-Provider takes over 4PL functions
3. Consulting takes over 4PL functions
4. OEM establishes a 4PL sister company
5. Joint-Venture with channel partners
6. Co-operation of SME service companies
Business Areas

Mack Trucks

Renault Trucks

Volvo Trucks

Volvo Buses

Trucks

Volvo Construction Equipment

Volvo Penta

Volvo Aero

Volvo Financial Services