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**Sir Francis Drake Hotel**  
**San Francisco, Ca., USA**

IN CO-OPERATION WITH CEMENT DISTRIBUTION CONSULTANTS



# **INTERACTIVE TERMINAL CONTROL SYSTEMS - THE CEMENT TERMINALCONTROLS STEM LINK IN THE COMPLETE SUPPLY CHAIN**

**Ad Ligthart**  
**Partner**  
**Cement Distribution Consultants**  
**The Netherlands**

# **Biography**

Ad Ligthart  
Partner  
Cement Distribution Consultants  
The Netherlands

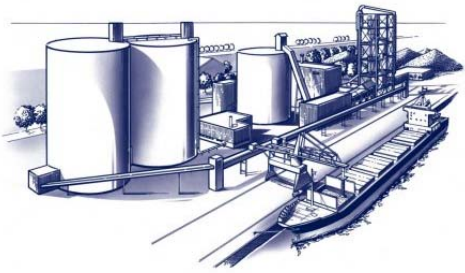


Ad Ligthart is managing partner of Cement Distribution Consultants, an information provider on complete cement distribution projects including trade, transportation, terminals and terminal operations.

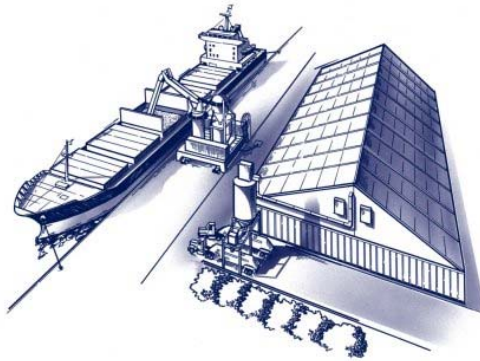
He has been involved in the cement industry from 1982, working for 17 years for major equipment suppliers and engineering companies. He has had a strong involvement in developing shipunloaders and other specific handling and storage equipment, evolving from there to complete terminal designs. He has been stationed in the Netherlands, Hong Kong and the USA.

In 1999 he founded Cement Distribution Consultants. This company focuses on distribution logistics and economics as the basis for transportation projects and terminal design. Since 1999 the company has been involved in 17 terminal and transportation projects world-wide as well as market studies, company valuations, mediation, management training, etc.

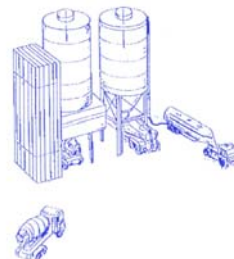
Cement Distribution Consultants publishes a substantial website with information on cement trade transportation and terminals ([www.cementdistribution.com](http://www.cementdistribution.com)). The company is a joint organiser of the Intercem Workshops.



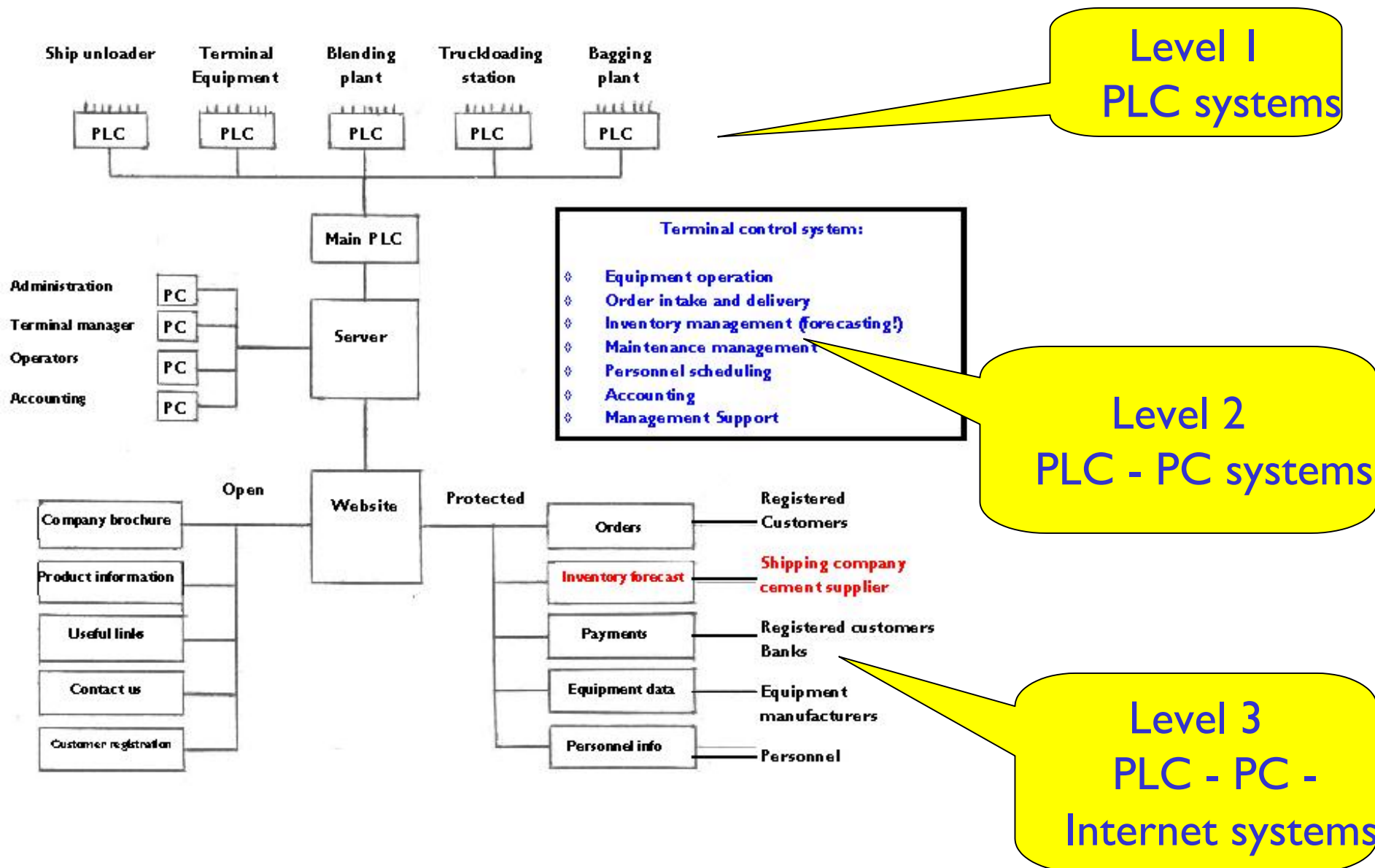
# Interactive Terminal Control Systems



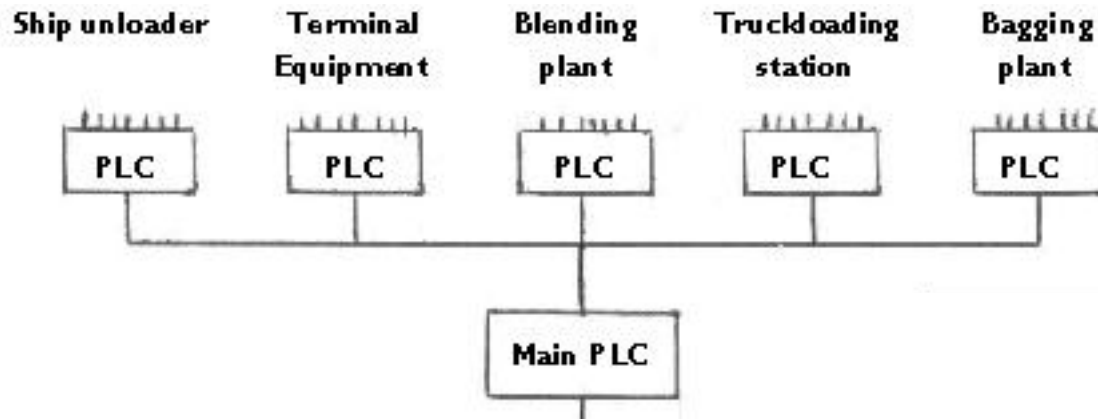
The cement terminal as a link in the  
complete supply chain



# Control system levels



# Level I - PLC Systems



Sophisticated equipment control

Interaction between different systems

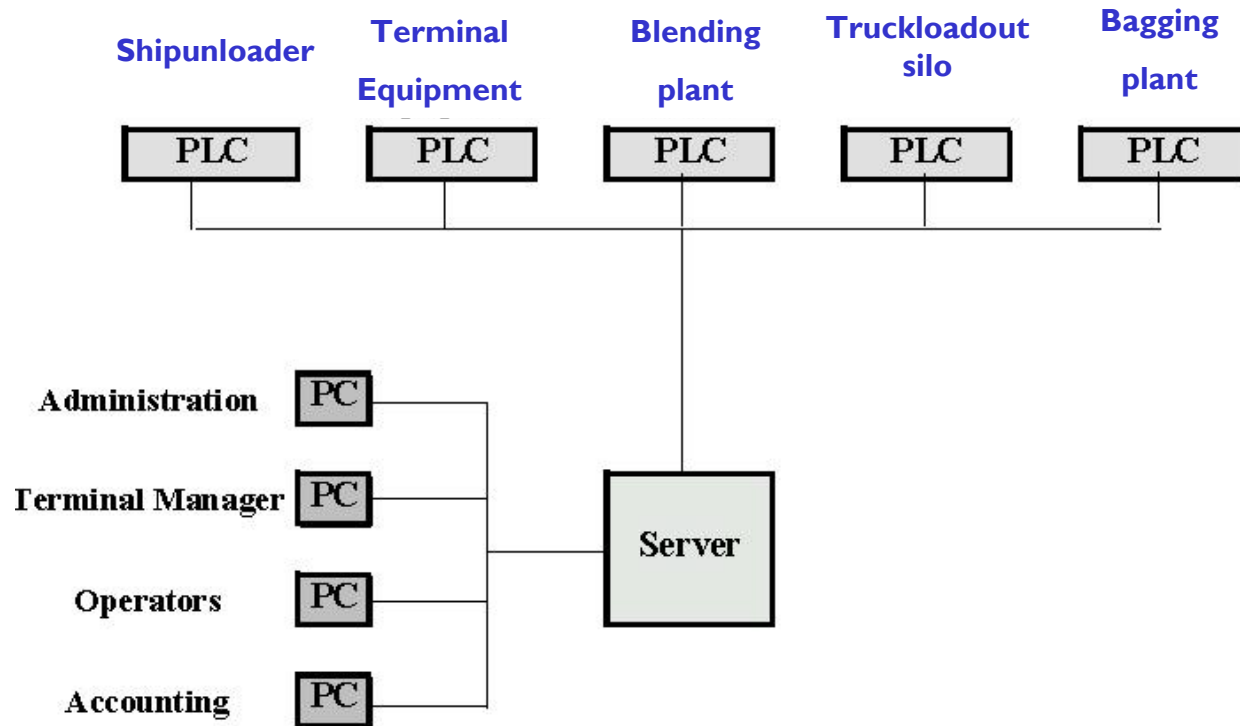
Alarm monitoring

Equipment condition monitoring

Data recording

PLC systems provide sophisticated terminal control but not more

# Level 2 - PLC - PC Systems



Integration of equipment control with:

- Accounting
- Order intake and delivery
- Inventory management
- Ship scheduling
- Maintenance management
- Personnel scheduling
- Cash flow projection

A PLC - PC system is a very important management support tool as it allows forecasting

# Terminal scheduling software

## 1) Collects all relevant data on a daily basis

- Shipped and received quantities of cement
- Equipment running hours
- Personnel hours and schedules
- Maintenance history
- Allocated costs
- Pricing

## 2) Relates all relevant data to a “per ton throughput” basis

## 3) Projects relevant information based on the sales forecast (tons) on a daily basis

- Inventory / ship scheduling
- Equipment running hours → maintenance projection
- Required personnel scheduling
- Operating cost forecast
- Cash flow projection

# Sales forecasting software

## Long-term

- Building permit applications
- General economical situation
- “Guaranteed” market share
- Seasonal effects
- Long-term supply contracts

## Midterm

- Building permit approvals
- Development local economics
- Review of accuracy long-term projection

## Short-term

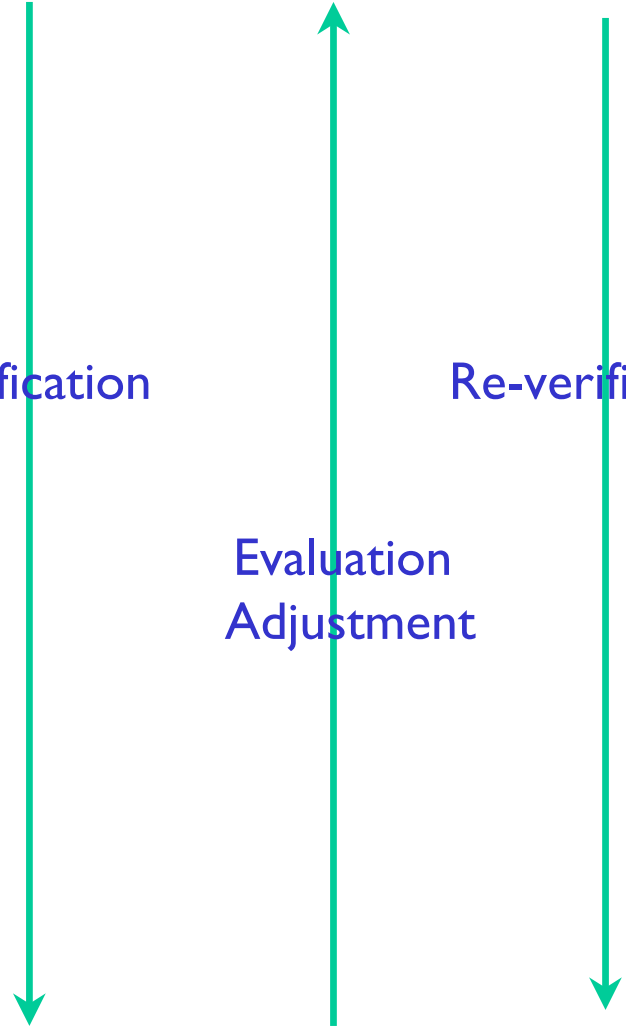
- Comparison with historical data  
of equivalent period last year
- Weather forecast
- Review of accuracy midterm projection

## Actual figures

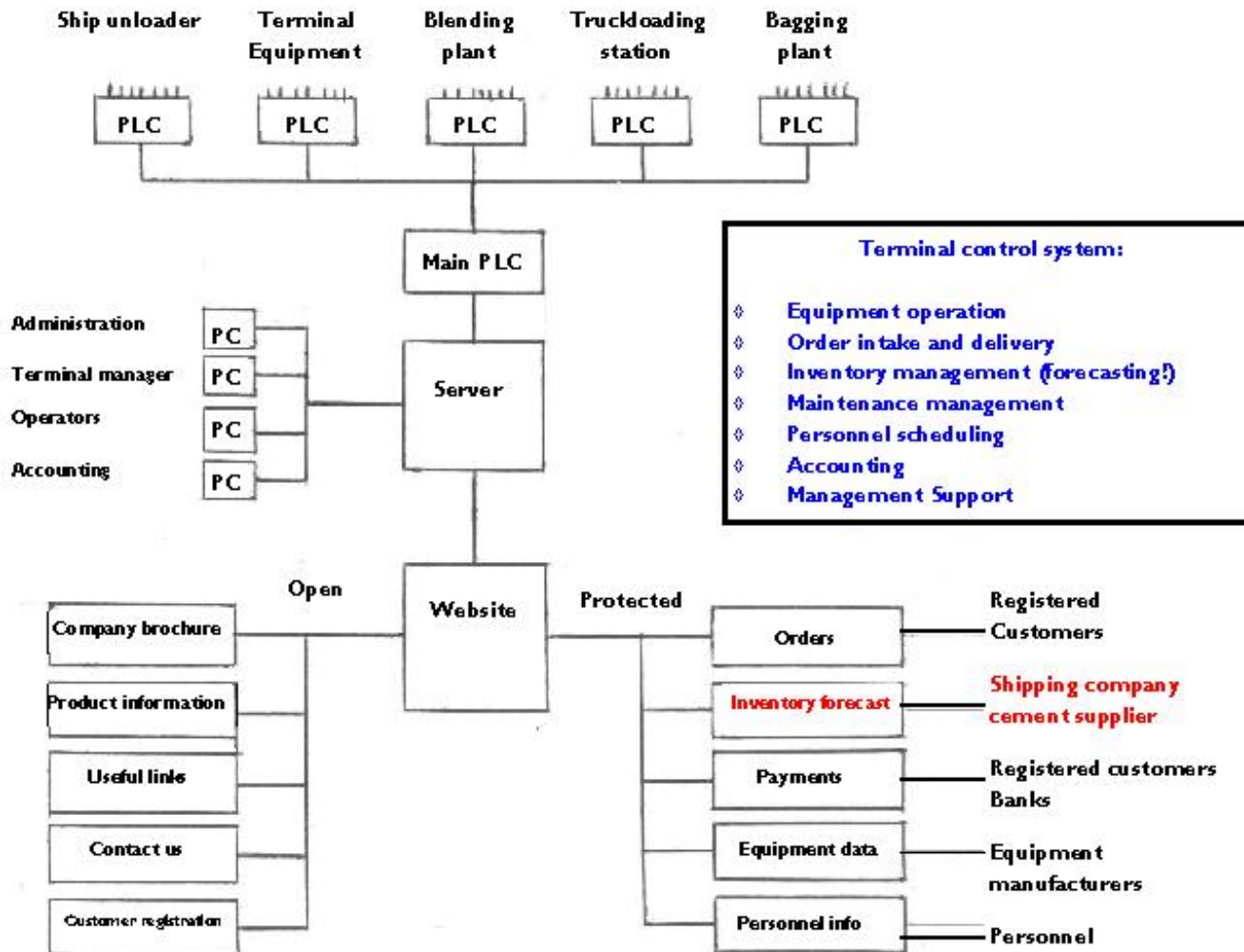
Verification

Re-verification

Evaluation  
Adjustment



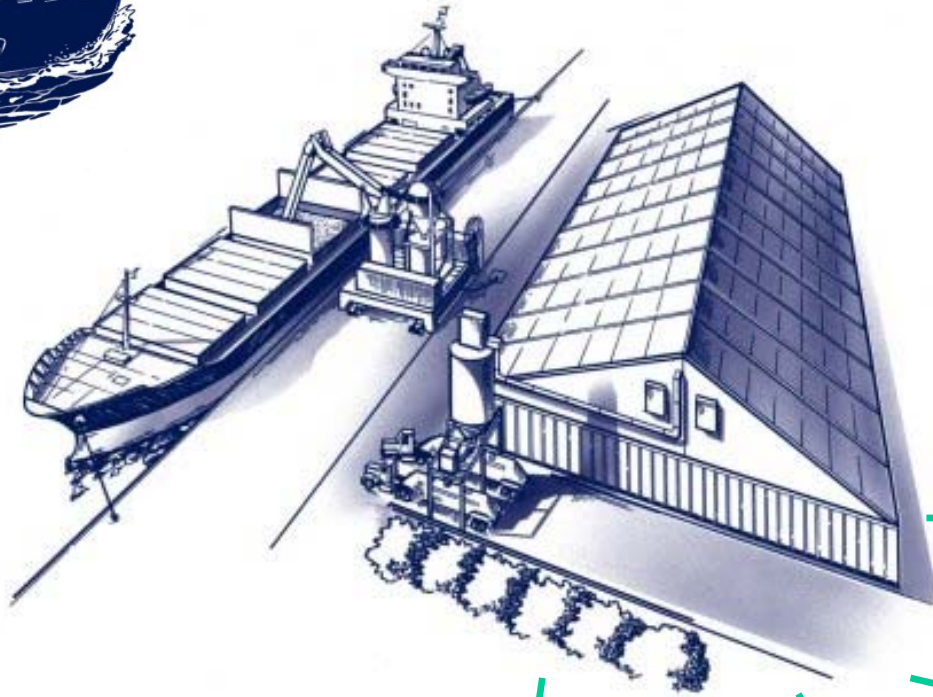
# Level 3 PLC - PC - Internet systems



**Interactive terminal control system**

**The terminal control system is a link in the complete chain of supply**

# Perspective from terminal

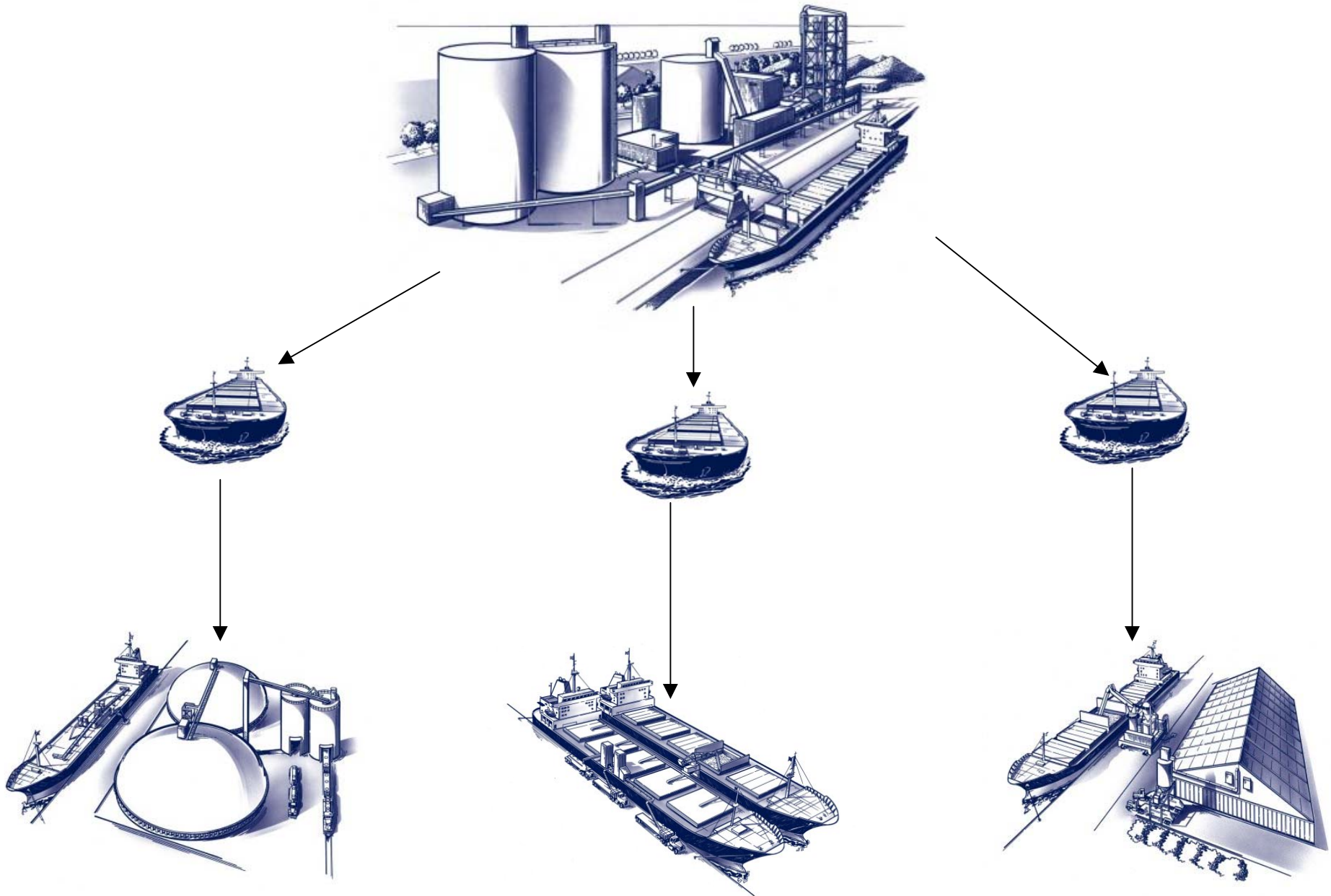


# The terminal operators view is fairly limited

His main concerns are:

- Inventory management
- Un-interrupted capability to despatch and receive cement
- Reduction of operational costs to a minimum

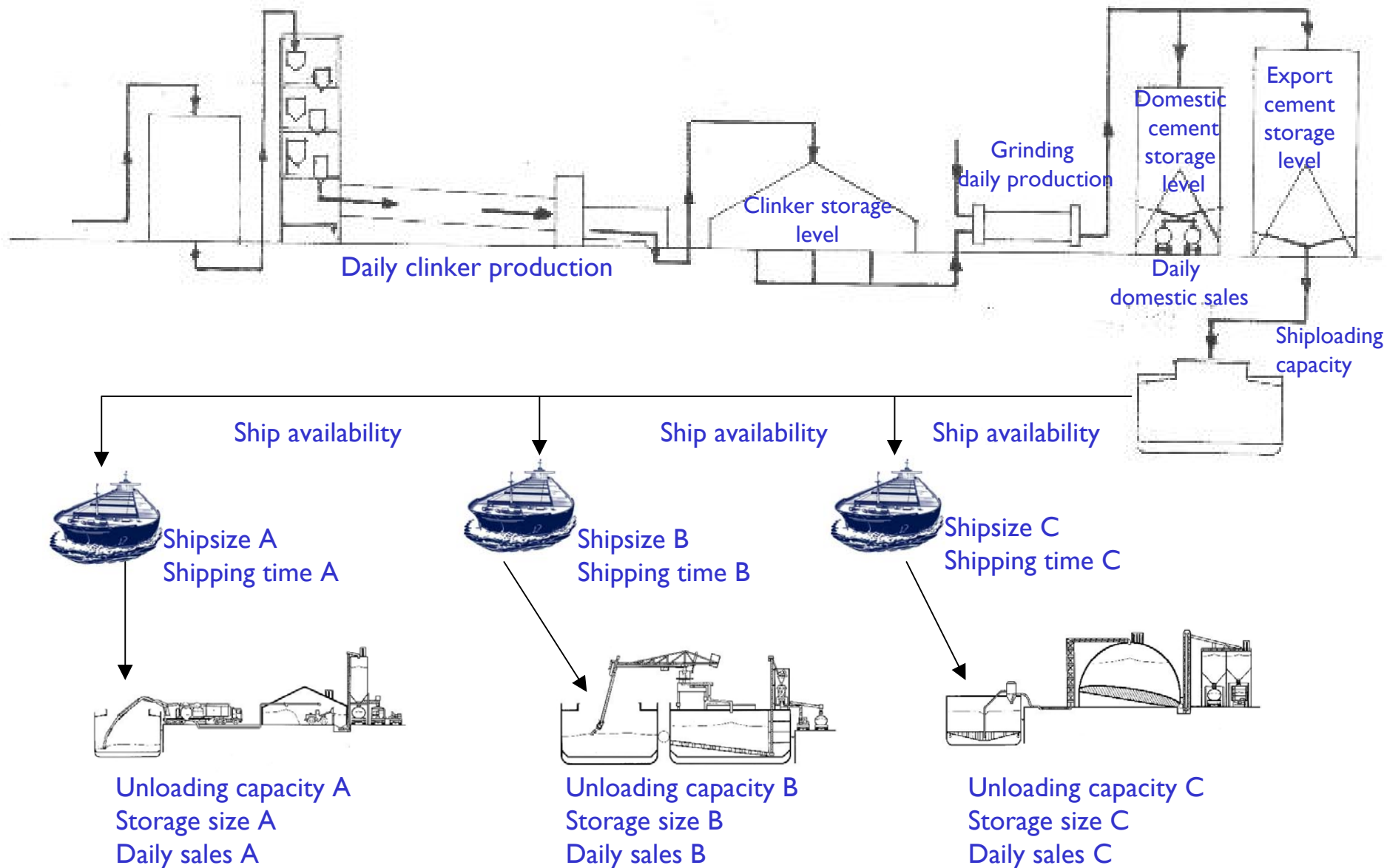
# Perspective of exporter



# The perspective of the exporter is more complicated

- Balance exports and domestic sales
- Has several export customers to supply
- Have sufficient cement in stock and a free dock available when ships come in
- Is very dependent on actual ship arrivals

# Variable factors in scheduling cement exports

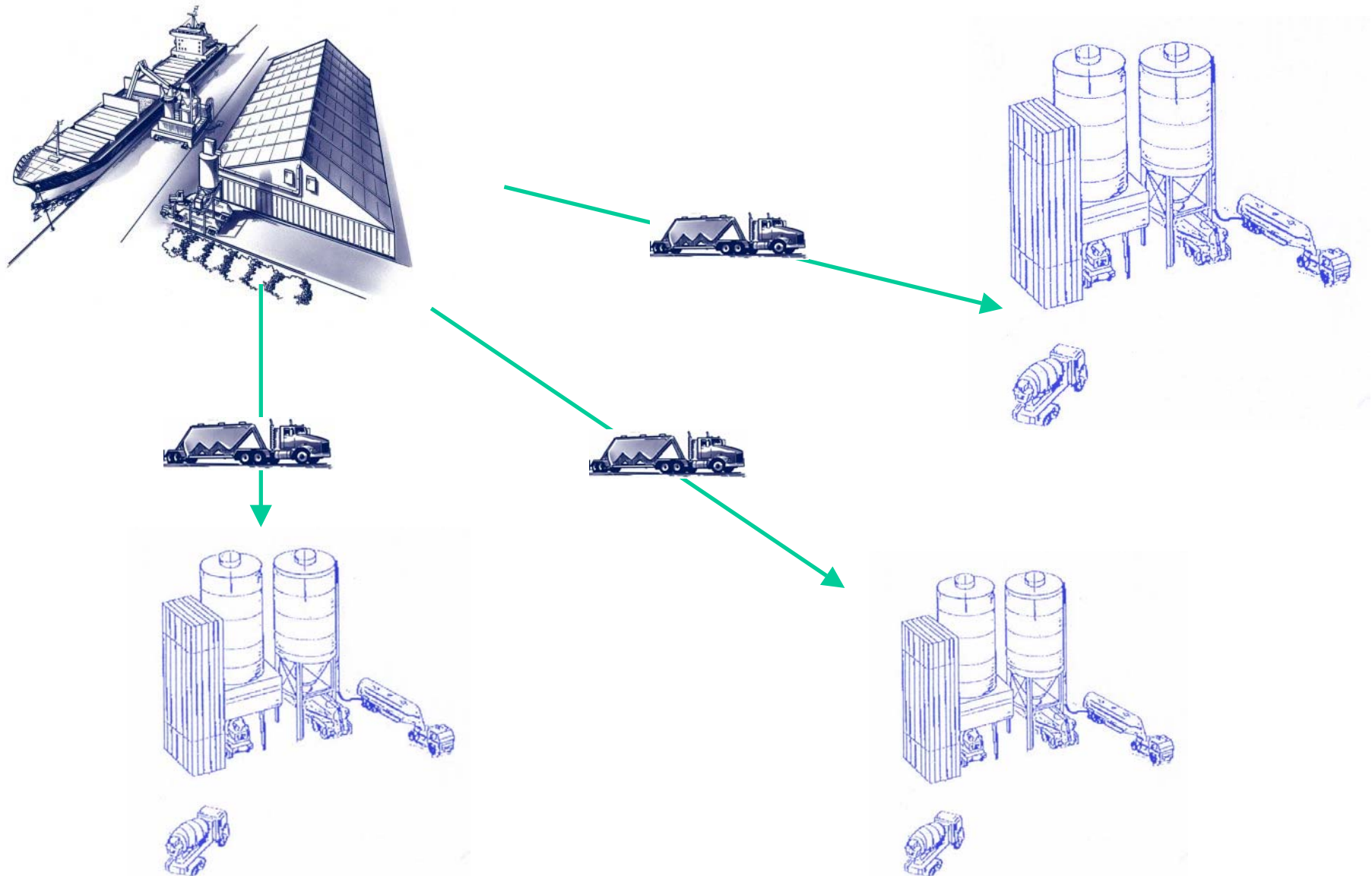


# Perspective of shipping company



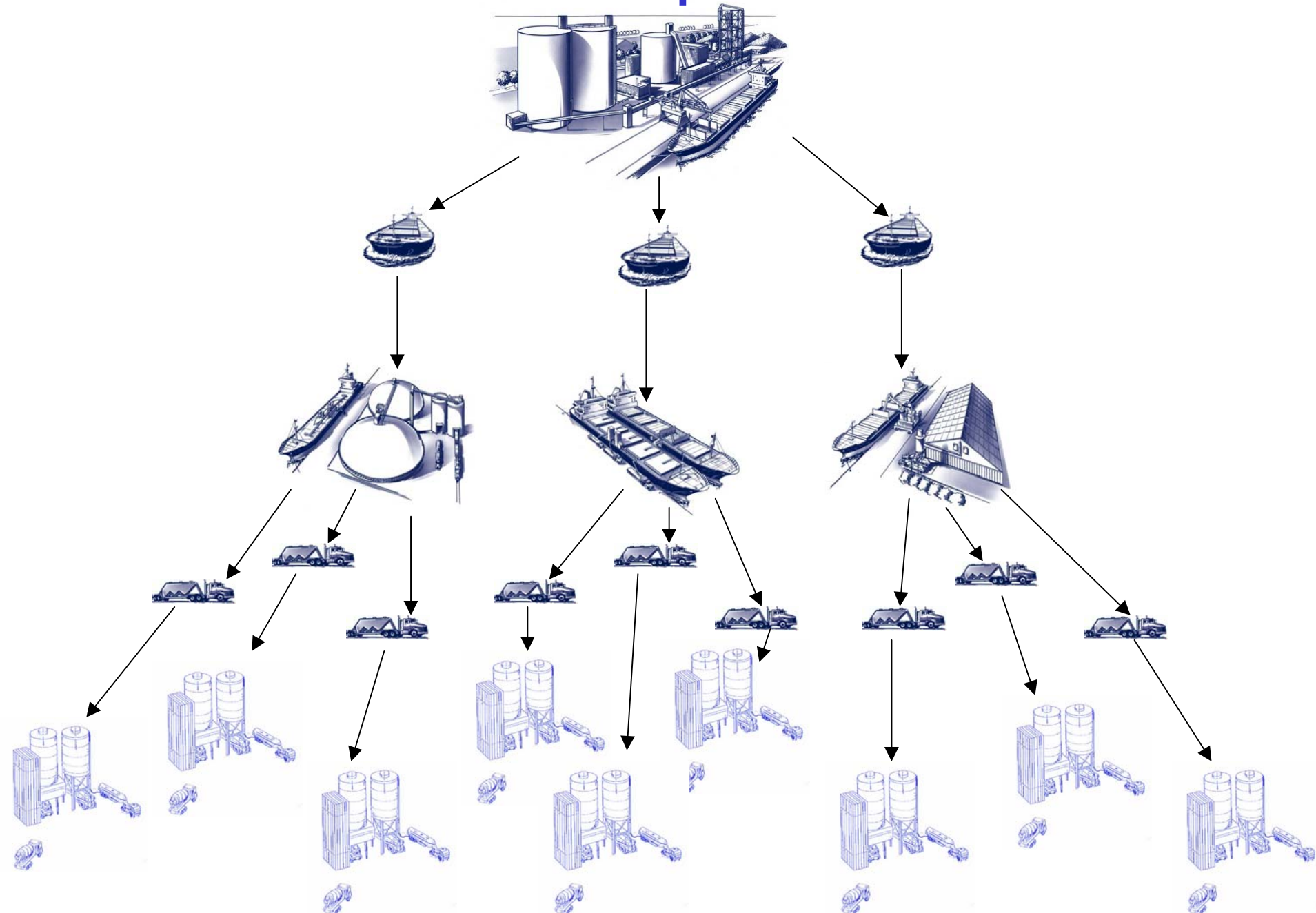
Optimal use of shipping is reducing ballast sailing days and unnecessary waiting days at loading and unloading terminals to a minimum

# Perspective of bulk truck operator



The bulk truck operator has to maximise truck use by optimising routing and minimising waiting times whilst keeping the readymix plants supplied on a just in time basis

# Overall picture



An interactive terminal control system that exchanges data with cement exporter and shipping on one side and final users and bulk truck company on the other side provides a means to improve the overall logistics and reduce the costs of the overall chain of supply.

- Improved export plant operation
- Less waiting days and ballast sailing days for ships
- Improved import terminal operations
- Less waiting time and improved routing for bulk trucks
- Improving the just in time supply to the final users

# Interactive terminal control systems allow for:

- Internet sales and purchasing
- Banking / payment
- Direct contact between equipment suppliers and their equipment improving equipment monitoring, spare parts inventory, maintenance scheduling, etc.
- Improved contact with sub-suppliers and service companies
- etc.

- Interactive terminal control systems are not only interesting to large multinational groups that want a better control on their overall distribution
- They are also a means for independent terminals to reduce their shipping cost, improve the service to their customer and improve their operation
- Interactive terminal control systems are not “a big leak of confidential information” but ensure that relevant information to improve operations is available at the right place at the right moment