Dalian Shipbuilding Industry Co., Ltd. – China – Economic benefits of standards – Case study

July 2011 – April 2012

Content of this presentation

- Dalian Shipbuilding Industry Co., Ltd. (DSIC) – Basic company information
- Shipbuilding & DSIC's value chain
- Use of standards at DSIC
- Quantification of the impacts of standards
- Additional qualitative considerations

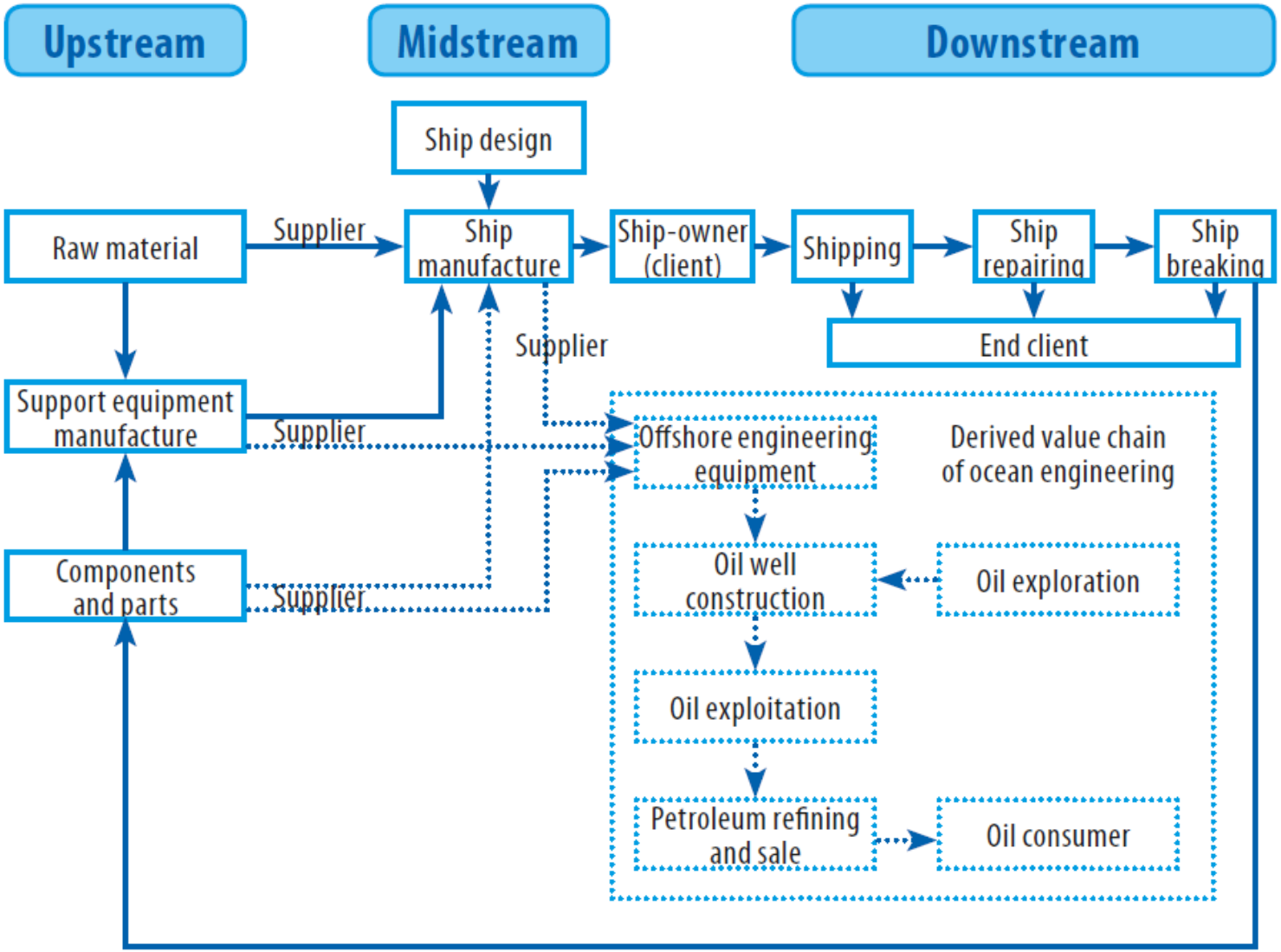
Dalian Shipbuilding Co., Ltd. (DSIC) – Company overview (1)

- DSIC was founded in 1898 when Tsar Nicolas II approved the construction of a dockyard
- In 2010 the company was restructured and divided into the Dalian Dockyard Co., Ltd., a fully-funded subsidiary of the China Shipbuilding Industry Corporation, and the Dalian Shipbuilding Industry Co., Ltd., a holding subsidiary of the China Shipbuilding Industry Limited Liability Company
- As a modern final assembly company DSIC combines five major industries – shipbuilding, defence, ocean engineering, ship repair (including shipbreaking) and heavy industry
- Products of the shipbuilding industry branch of DSIC are divided into oil tankers, bulk carriers, container ships and special ships

Dalian Shipbuilding Co., Ltd. (DSIC) – Company overview (2)

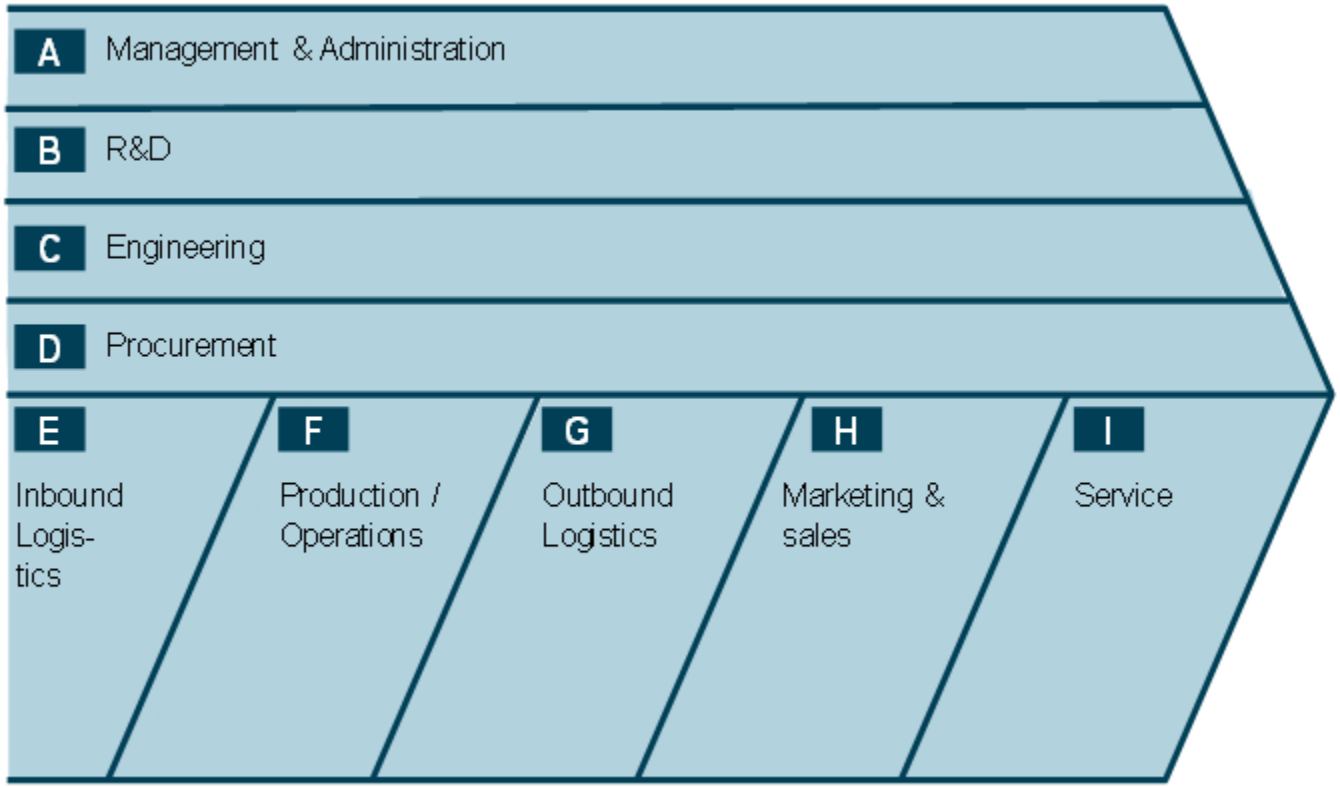
In 2010	Figures
Production	5 880 000 tons
Domestic market share	9%
Revenue from shipbuilding	20 475 000 CNY (~3,340,940 USD)
Revenue from R&D business function	150 820 CNY (~24,609.6 USD)
No. of employees	7598
Main customers	Ship-owners located in Europe, Asia, USA, other regions of the world, and internationally known shipping companies

Shipbuilding – Industry value chain



Case study: Dalian Shipbuilding IndustryCo., Ltd, China

Model of a company value chain (M. Porter)



The “value chain” is used as a tool in the assessments to structure and analyze the activities of companies

Key value drivers at DSIC

- The main features that characterize the shipbuilding industry are the high number of product types and their rapid development, the single unit and small scale production volumes, the long manufacturing periods, the sophisticated technical requirements and highly complex management structures. A company can improve its competitiveness by:

  - Raising the level of technological R&D and expediting the development of new products
  - Improving the technical qualification and work efficiency of employees and by shortening the manufacturing period
  - Improving the quality of management

Attitude of DSIC towards standards

- The company has a standardization committee, headed by the vice general manager with members from all departments. The committee holds a standardization working conference involving the whole corporation every 14 October on the occasion of “World Standards Day”
- DSIC participates in the work of ISO/TC 8/SC 4/WG 3 *Ships and marine technology – Outfitting and deck machinery – Outfitting*
- In order to cope with requirements defined in the Energy Efficiency Design Index (EEDI) of the International Maritime Organization (IMO) and the Marine Environmental Committee (MEPC), the company participates in the “Expert working group” on EEDI indexes for new ship design”
- DSIC has contributed to the development of over 30 Chinese national standards and over 150 Chinese industry standards

Attitude of DSIC towards standards

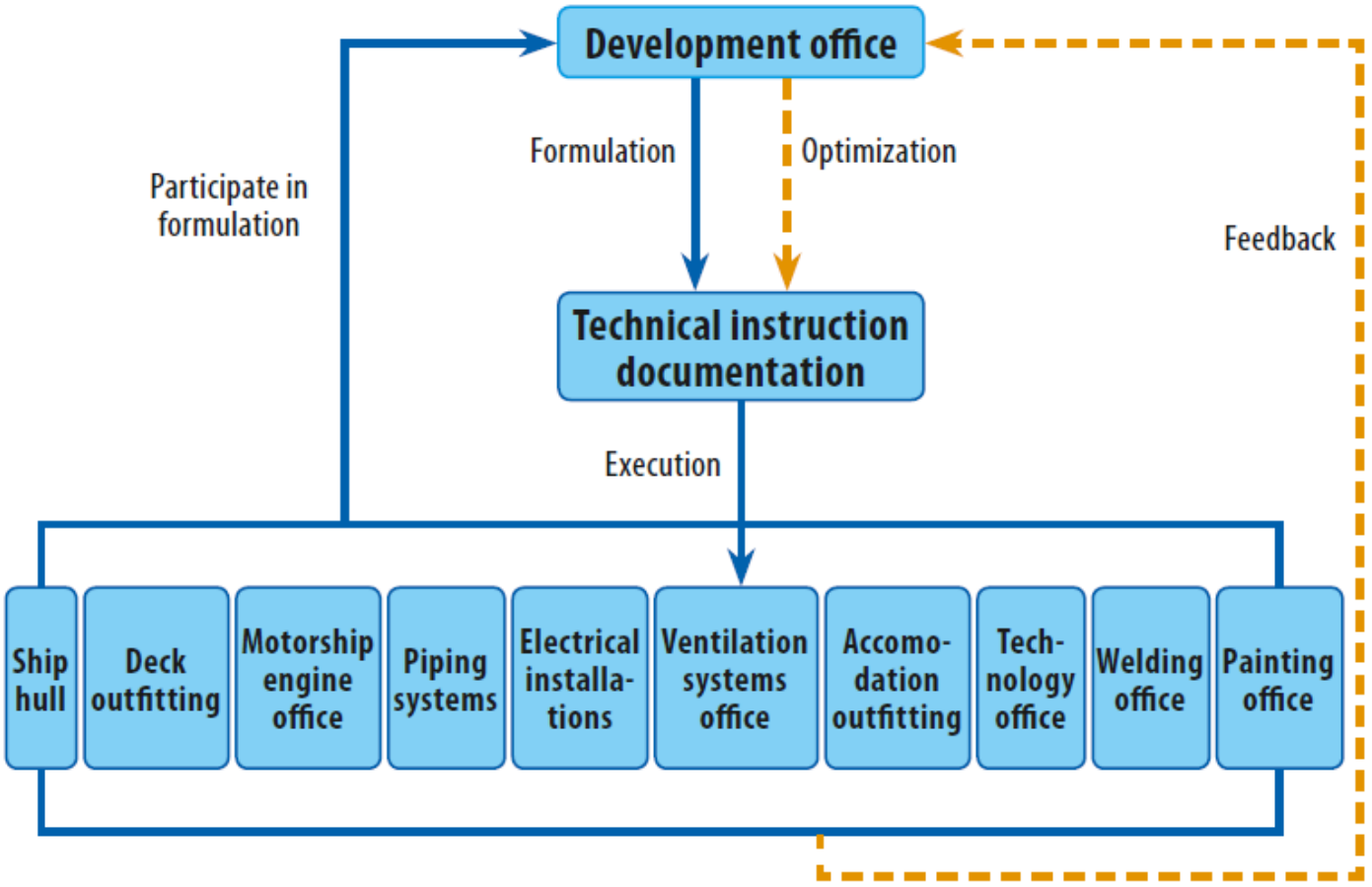
- DSIC uses over 100 000 Chinese and foreign standards that can be classified as follows:
  - General conventions and rules issued by the IMO
  - Specifications issued by various major classification societies and the International Association of Classification Societies (IACS)
  - International standards developed by ISO, IEC and ITU
  - National and industry standards issued by various countries
  - Standards developed by major companies

Scope of the assessment

- The R&D function for shipbuilding products has been chosen as the scope of the assessment with a focus. R&D is undertaken by DSIC's «Design Institute».
- The Institute undertakes R&D, design and development of products for the defence industry, ships for civil use, ocean engineering and non-ship products; research projects financed by state ministries and commissions as well as scientific research trial-manufacture projects for national defence
- The Institute employs nearly one thousand designers and assistants with over 700 directly engaged in engineering design

Organizational structure of the Design Institute

The Design Institute covers 11 areas with an organizational unit for each



Conclusion: Impact of standards on the company EBIT (1)

- The calculation of the impacts of standards is based on the use of standards in the eleven organizational units of the Design Institute and expressed as cost savings for the respective units

Organizational unit	% of cost	CNY
Development office	1-5%	631 600
Hull office	1-3%	866 000
Deck outfitting office	1-15%	1 411 800
Accommodation outfitting office	1-10%	888 900
Motorship engine office	1-5%	368 400
Piping systems office	1-15%	5 294 100
Electrical installations office	1-10%	1 777 800
Ventilation systems office	1-10%	277 800
Technology office	1-10%	777 800
Welding office	1-15%	705 900
Painting office	1-10%	277 800
Total CNY		**13 277 900**

Conclusion: Impact of standards on the company EBIT (2)

- The average annual financial impact of standards on the company EBIT in R&D amounts to **CNY 13 277 900** (~2 million USD)

- An analysis based on the company's average revenue over the last 5 years shows a **contribution of standards used in R&D of 12.19%**

Thank you

Confidence has a nickname…

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