

“Cost of the U.S. Shipbuilding Industry”

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At ASNE Day 2012 the Honorable Sean J. Stackley and the VADM Kevin M. McCoy presented their key notes in regards to the shipbuilding industry. Was the audience active or passive to their presentations is not a subject of this article. The author provides her comments. A style of work formed in the shipbuilding industry since Liberty ships can be focused for this article by a comment from one of the round-table discussions where Helene Anderson stated that all work in the organizations of the shipbuilding industry from the worker to the upper management is built on fear of being fired.

This article is formulated as a reflection to the presentations of the key speakers at ASNE Day 2012. The proposed mechanism of the elimination “the fear of being fired” is demonstrated by a practical example in this article. At the same time institutions of the shipbuilding organizations do not form their needs at the level of doctoral programs for their employees. A recent vacuum cleaner accident and a discussion of Mr. Stackley on fleet affordability led the author to a conclusion about consideration of the concept of validity of the existing practice of forming structures of the shipbuilding industry based on the engineering education and experience. The author believes that this process came to its final stage. A proposed concept is delineated as following:

1. take an example of round-table discussion from one of the industry panels
2. provide analysis of this discussion with coding
3. in the next stage of analysis this codification may be used for building:
 - an informational database
 - system dynamics (SD) modeling
 - recommendations for strategic planning

This concept provides a mechanism for preparing industry representatives for participation in the round-table discussions during the industry events at the doctoral level with an opportunity to apply these skills in the organizations they work for.

In his address at the ASNE 2012 Day The Honorable Sean J. Stackley said that he feels himself on vacation with people who do equations for living. During his address he used a “what wakes me up during the night” analogy to describe the critical problem of the affordable fleet.

The VADM Kevin M. McCoy focused his address on the socio-cultural system, on ship wholeness, on complete solutions, quality, cost, economy and training.

In August of 2012 SCHWIPAR Centre for Innovational Development contacted the U.S. Senate office with a request for a Government Accountability Office (GAO) record about diversified socio-cultural systems that were formed by one or another reasons as a result of the activities of the representatives of these socio-cultural systems. Analysis of a number of these reports and comments about activities in

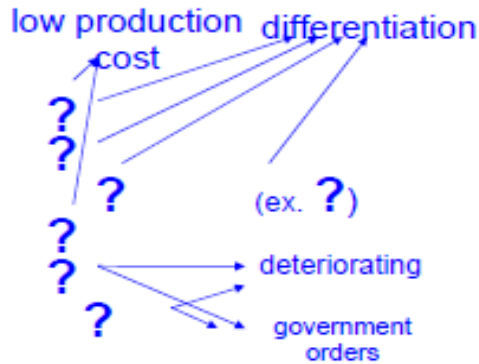
several shipbuilding organizations have been resulted in the following concepts:

- Formulating and Development of the Mission of the Shipbuilding Company in the Area of Quality (Economic Benefits – Profits – Patents)
- Mission for Strategic Model in the Shipbuilding Industry: Strategies of Cost Leadership, Differentiation and Concentration

(See Figures 1-18 below).

Shipbuilding Industry

➤ This is not a country



Shipbuilding Company

➤ This is not an internal socio-cultural system

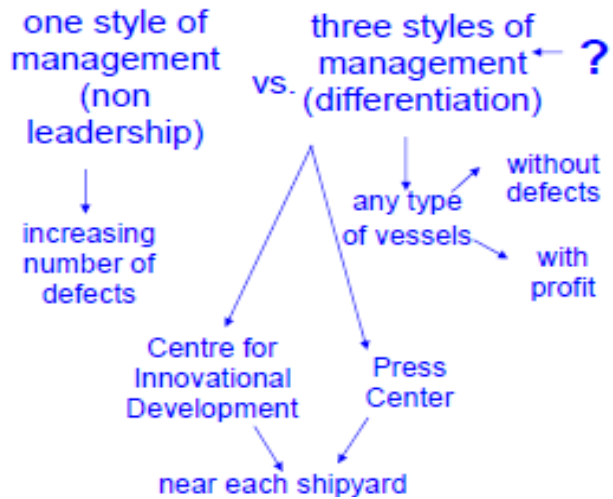


Figure 1



Figure 2

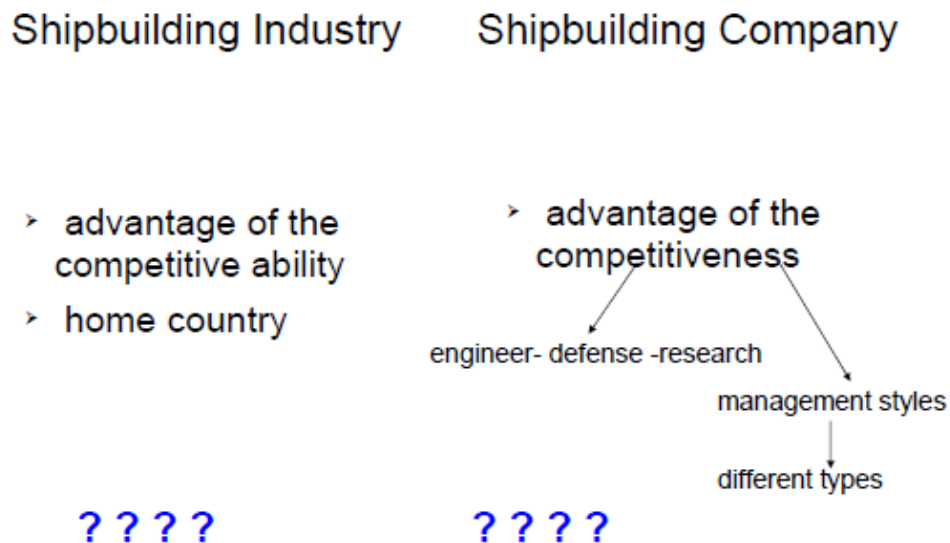


Figure 3

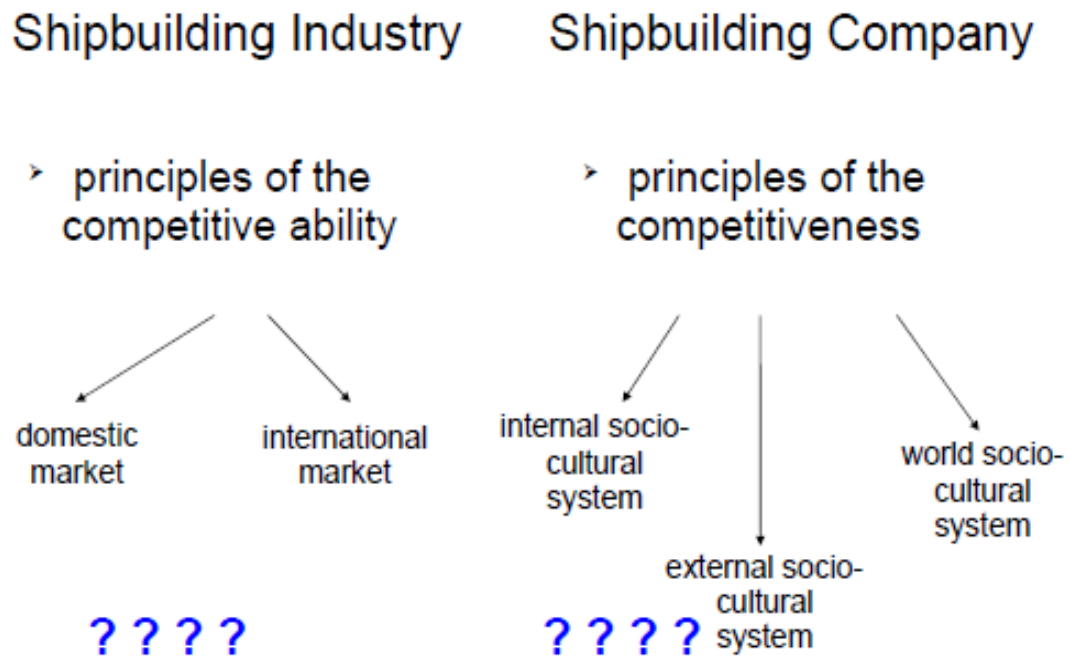


Figure 4

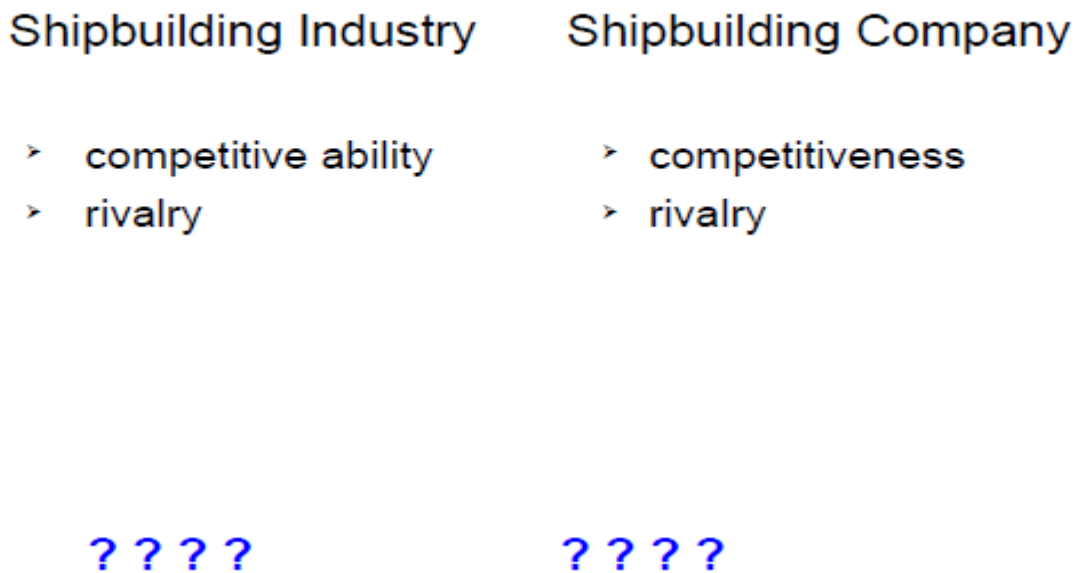


Figure 5

Shipbuilding Industry

- strategy for competitive ability
- success

Shipbuilding Company

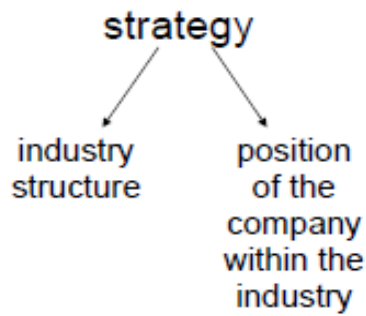
- strategy for competitiveness
- success

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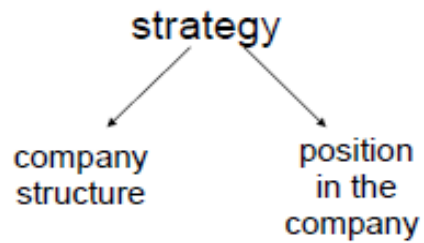
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Figure 6

Shipbuilding Industry



Shipbuilding Company

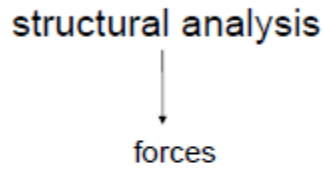


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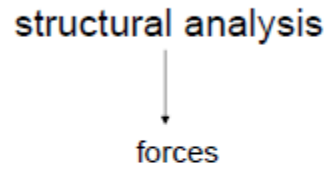
Figure 7

Shipbuilding Industry



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Shipbuilding Company

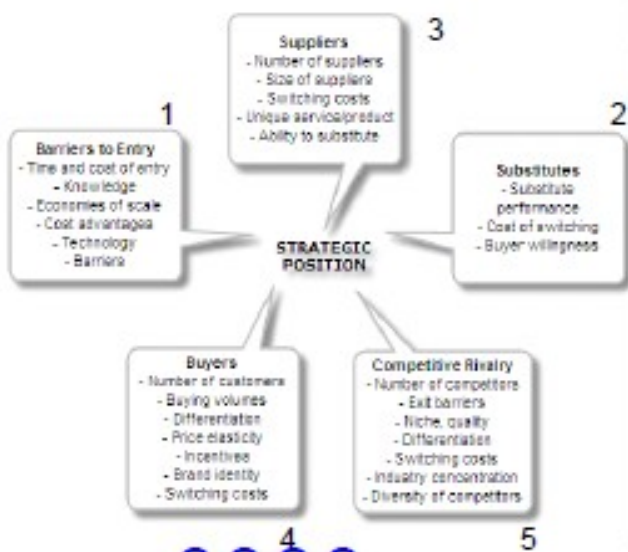


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Figure 8

Shipbuilding Industry

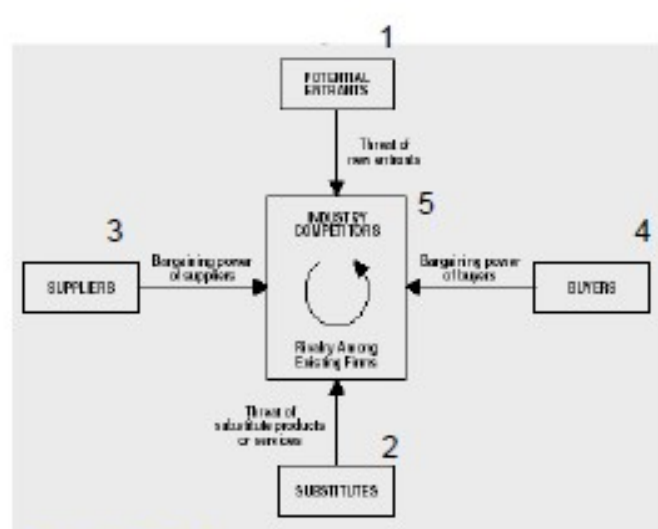
Porter's Five Forces Model



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Shipbuilding Company

Porter's Five Forces Model

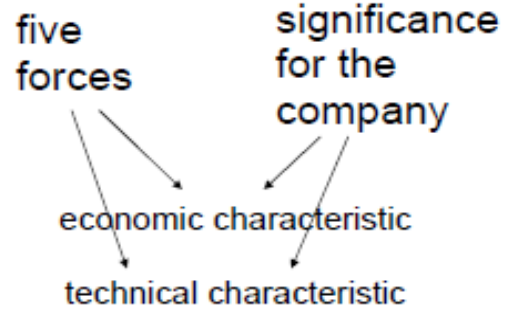
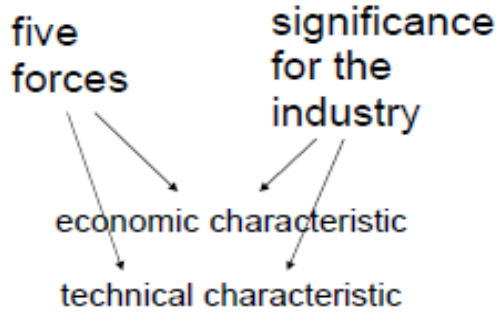


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Figure 9

Shipbuilding Industry

Shipbuilding Company



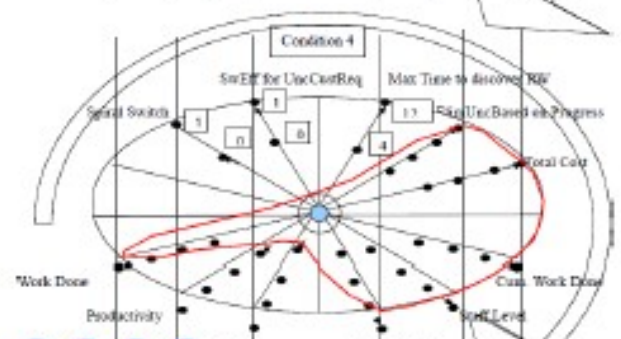
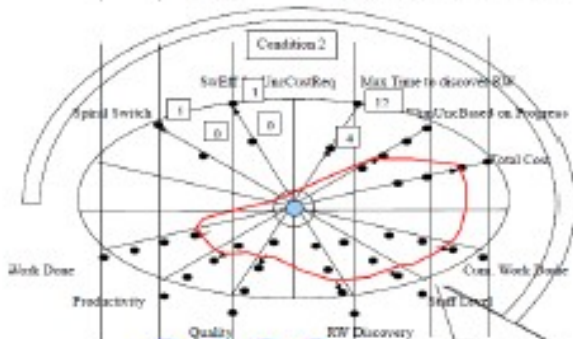
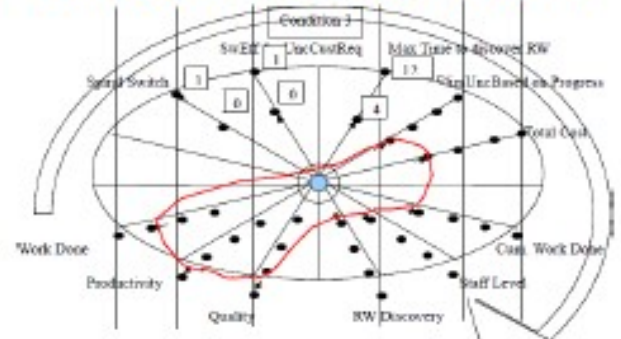
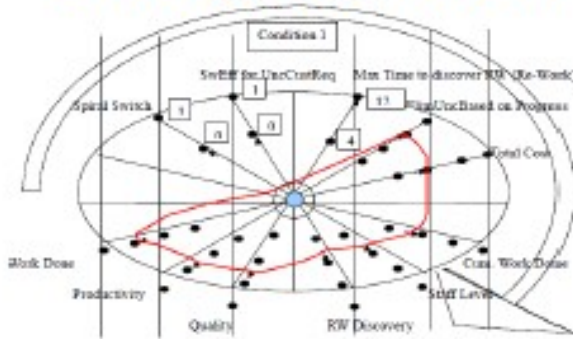
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Figure 10

Shipbuilding Industry

Shipbuilding Company

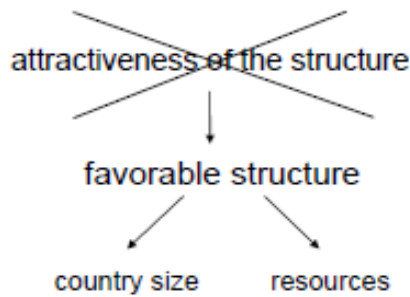


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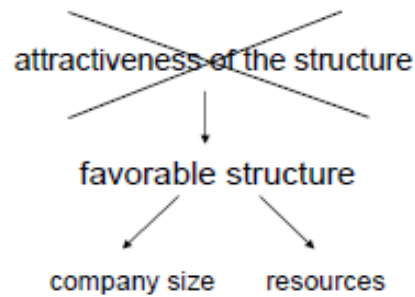
Figure 11

Shipbuilding Industry



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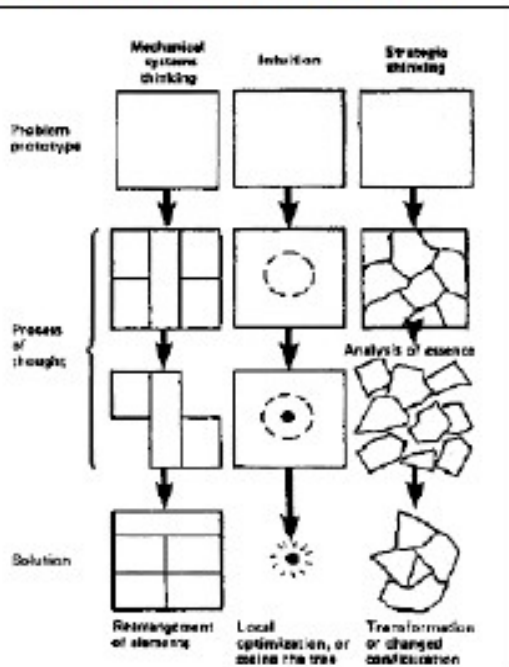
Shipbuilding Company



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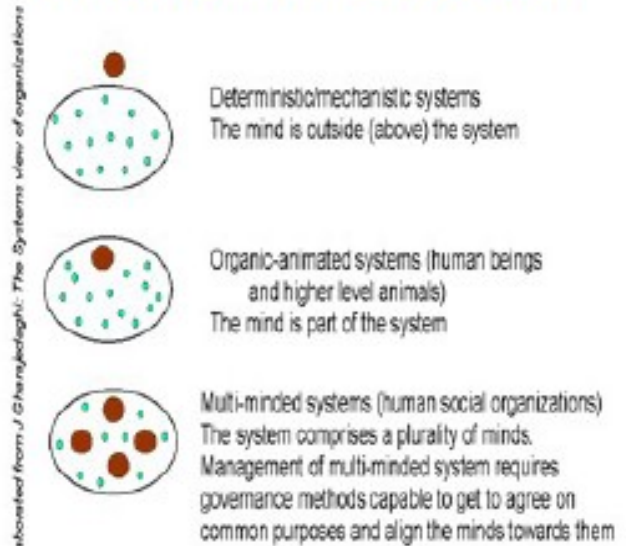
Figure 12

Shipbuilding Industry



Three Kinds of Thinking Process by Kenichi Ohmae

Shipbuilding Company



(Gharajedaghi, 1999)

Figure 13

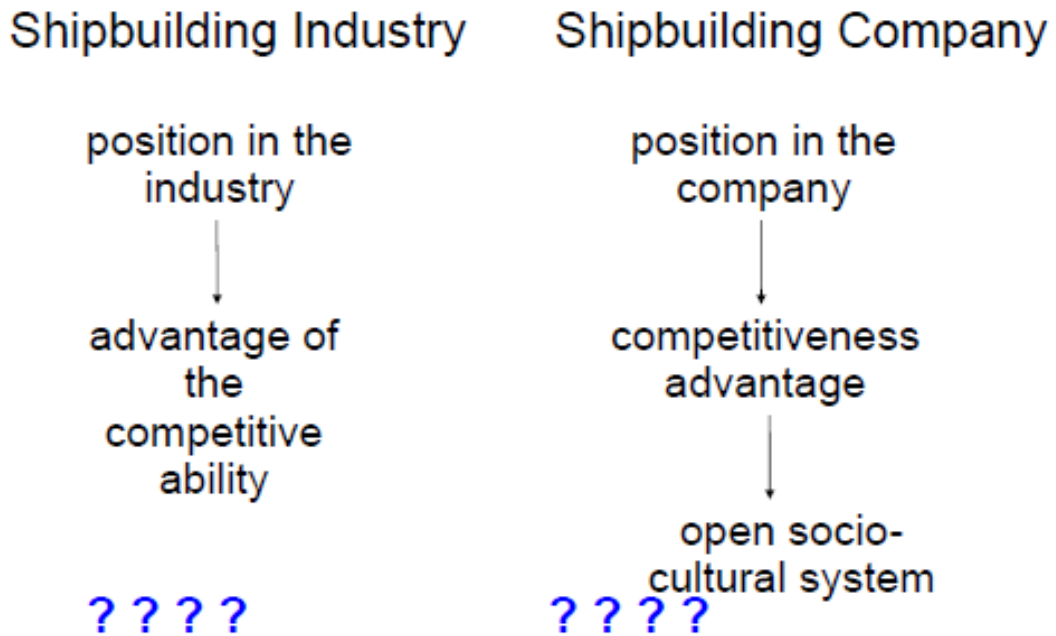


Figure 14

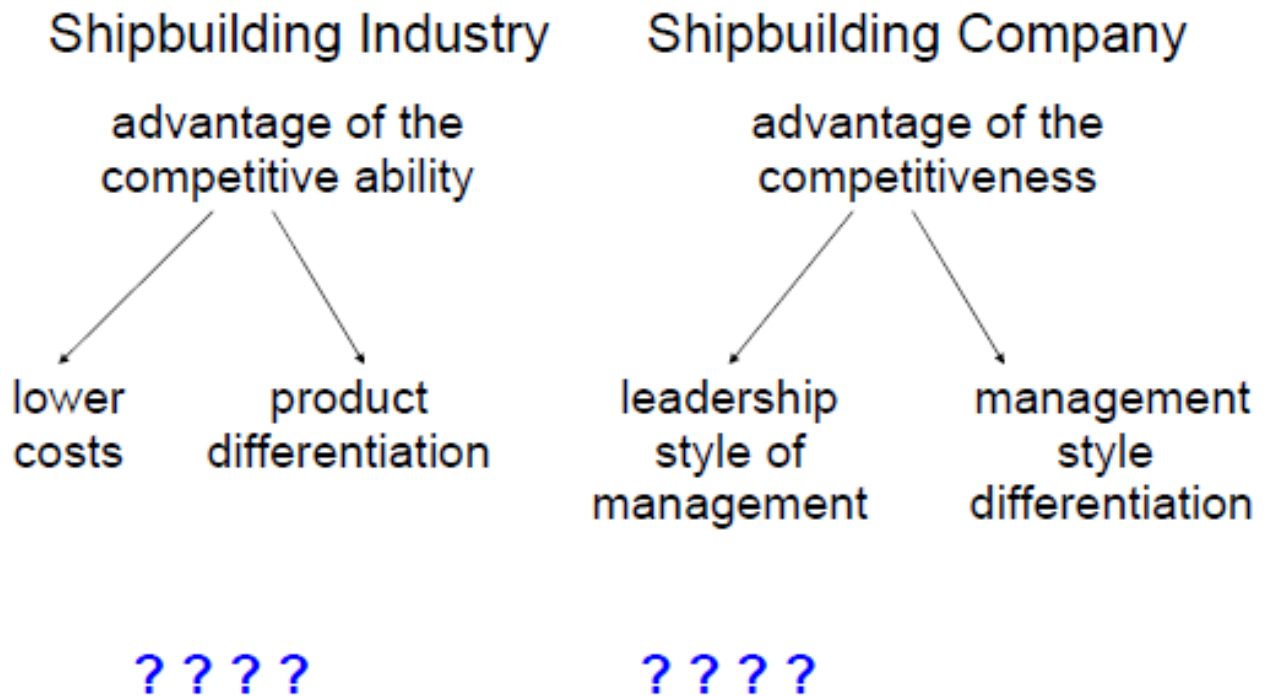


Figure 15

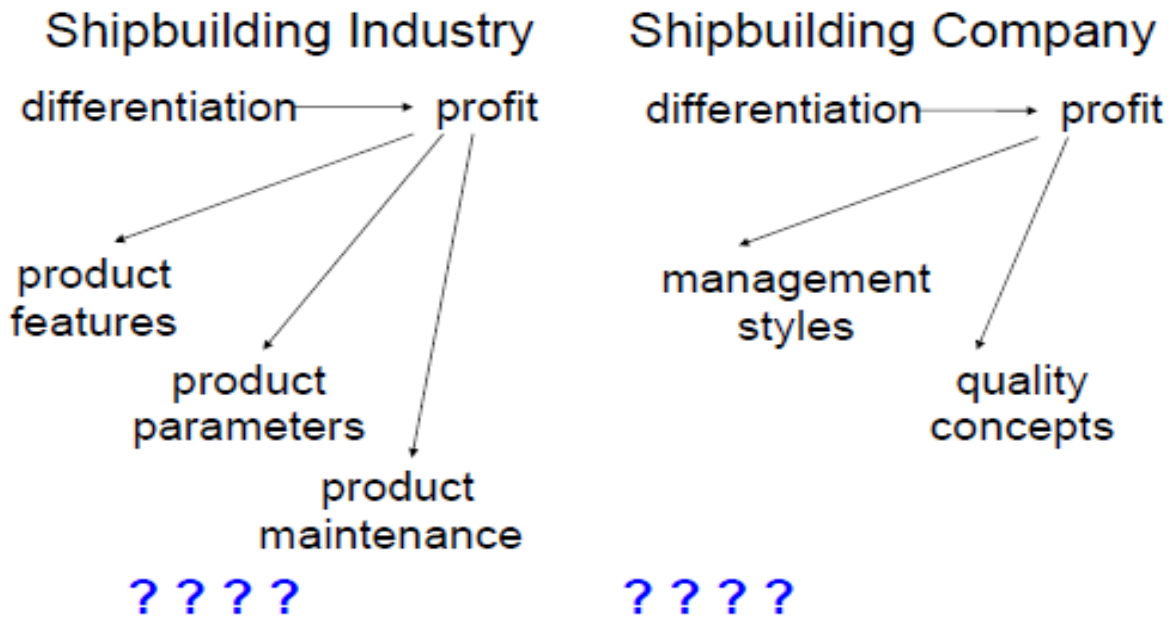


Figure 16

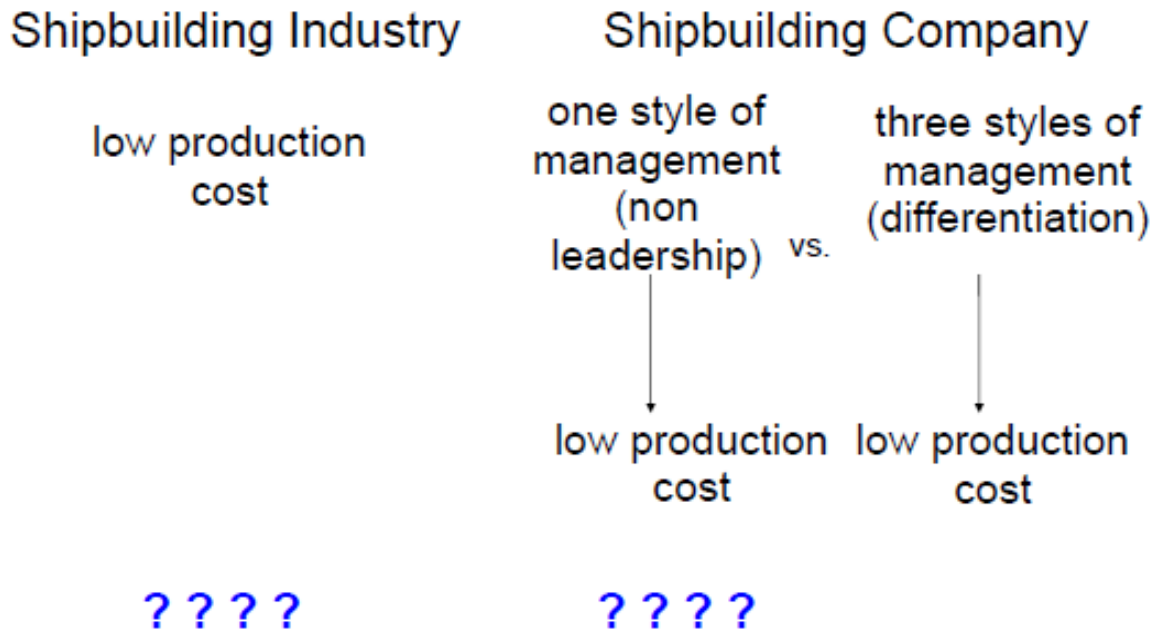


Figure 17

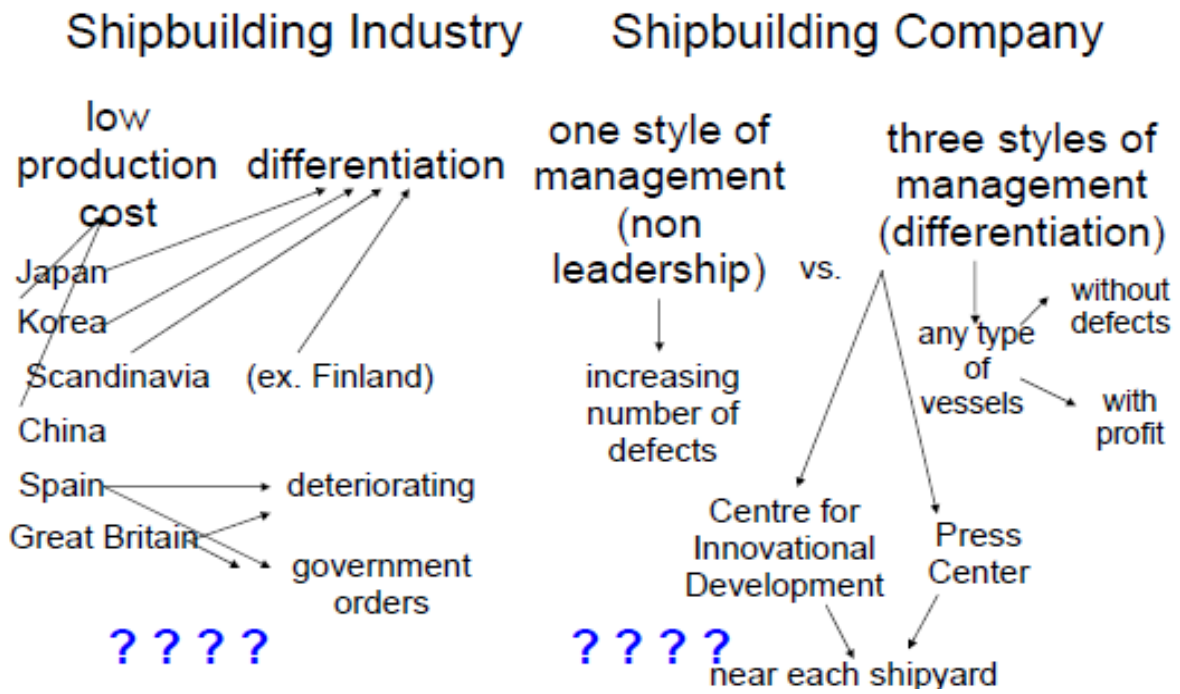


Figure 18

Round-table Discussion Example

(Two columns = two participants)

culture	socio-cultural system
120 recommendations for process improvements for "n" period of time	underdeveloped tools
3 options: 3 for the price of 1	serial production: segregation at the component level $1*1+2*2+3*3+4*3+5*(2-1)+....+10*1$
10 years behind	strategy, mission, algorithm, councils, defense of work in open media, agreements, have a classifier who/which identifies the issue and software which sorts entries by category for a detailed conclusion on various aspects of the issue at the academic level
product differentiation	quality concept differentiation
safety program	it is oscillative in nature. Graph starts from "0". Graph in 3-D. 3-rd axis is department location. Work week (40-n), pay (40+n)
robotics (75%) welding	defense in live media, recruiting
talking to people on regular basis (groups of 50 people) at all levels	mission, strategy, agreements, algorithm, perfor-card, second opinion, interview, examination, career advancing, HR, proposals for universities

Figure 19

<p>talking to people on regular basis (groups of 50 people) at all levels</p>	<p>mission, strategy, agreements, algorithm, perfo-card, second opinion, interview, examination, career advancing, HR, proposals for universities</p>
<p>NSRP – non-competitive organization</p>	<p>NSRP – competitive organization: NO leader, NO strategy, NO mission, NO agreements</p>
<p>no funds for teaching in colleges: come to the shipyard for 2 years</p>	<p>managers teach courses in the universities, Centre for Innovational Development and a press center near each shipyard</p>
<p>overtime (OT) reduction for supervisors: from 25 hrs to 4-5 hrs</p>	<p>OT is an extraction of a person from the external socio-cultural system and placement him / her into the internal socio-cultural system. An increase in a number of supervisors will prevent this transition. Algorithm II will be broaden: OT during a whole year => transfer to another position</p>
<p>congressional delegations</p>	<p>second opinion is absent</p>
<p>profit margin vs. profit</p>	<p>draft legislation introducing tax relief for highly innovative companies to help the retain businesses creating patents (80% of draft readiness). Formulating and development of the mission of the shipbuilding company in the area of quality (economic benefits – profits – patents)</p>

Figure 20

engineers are asked to generate new ideas, not how it was done 30 years ago	a classifier who/which identifies the issue and software which sorts entries by category for a detailed conclusion on various aspects of the issue at the academic level. Who? Who? Who? Three levels. Annual report: innovations, new ideas, career advancement, energy (30-years old, source) present time energy, source: family, country, economy, competitiveness, "this is not a country", home country)
Shipbuilding organization would not agree to share inside the industry	abstraction of the product to the quality concept. It will be a marketing tool for the shipbuilding organization through its final product
a change ? (Other companies)	management style, quality concept. Change is not formulated through mission, strategy, algorithm, perfo-card. Leading role belongs to SCHWIPAR
not here	30 years of experience = "one year's experience thirty times". These people started from "innovation!". After 5 years <<< . Centre for Innovational Development and a press center near each shipyard

Figure 21

	MIT, WPI, System Dynamics. Highest level of presenting a business
cancer	genetic changes. -evolutionary workload -revolutionary workload -antiquarian workload -artificial workload -the false image of being always busy -being too busy as a sign of incompetence
quality program (measurable parameters)	yes, Quality program that can be sold
foreign shipyard visits	mission, strategy, algorithm and report through agreement
young engineers with good education	"young", 20- 30- 40-year of experience. Innovative publications – amount. Teaching in the universities – amount. Socio-cultural system-> internal->external. Patents, patents, patents.
agree	no undergraduate programs. Level of strategy, level of mission of innovation - 40%. 80% in the world companies.

Figure 22

How we can engage the employees	<p>Ideology in accordance with Algorithm III</p> <p>Stage: the beginning, pre-formulating pre-development of the quality concepts.</p> <p>Organizations often do not pay adequate attention to the creative potential of its employees. In this regard, the problems of intellectual capital management, knowledge management, creative potential of staff is one of the possible directions of further progress.</p> <p>From the managers, who evaluate the employees a constant monitoring of the employee and assisting him/her (practical training) throughout the year is required, as well as of keeping diaries with the records of the strengths and weaknesses of the employee. These records are used in the current work with the subordinates in monitoring, training and motivation.</p> <p>In most corporations, assessment and certification are organized annually or every six months. In addition, most companies require from their managers informal interviews and discussions of the results of work between the gradings along with mandatory ongoing supervision over the activities of subordinates.</p>
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Figure 23

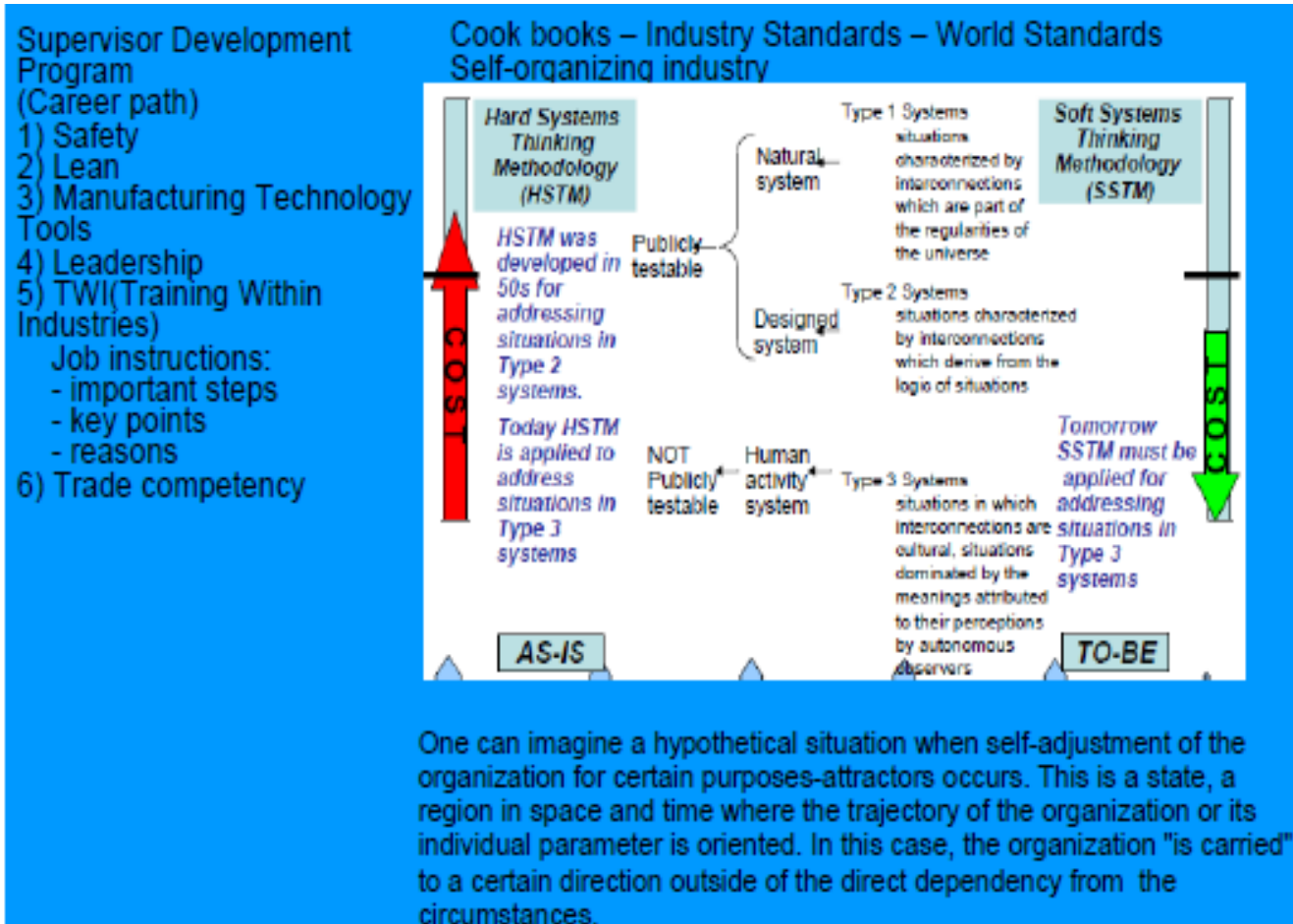


Figure 24

Round-table Discussion Analysis

These comments from the round-table discussion can be reviewed from different point of views:

- Researcher/Doctoral student & Industry representative
- Navy representative & Industry representative
- U.S. Senate representative & Industry representative

Making a brief analysis of these comments, the author offers the following:

1. formed concept:
 - in the first ten years of work (Code 01)
 - in the second ten years of work (Code 02)
 - in the third ten years of work (Code 03)
2. educational aspects

Submission #1 for ASNE 2013 Day, dated 10/28/12, Rev.4

- Code 10;11;12;13;14;15
- Code 20;21;22;23;24;25
- Code 30;31;32;33;34;35

3. then any group of codes (in a group 1, group 2 and group3) is taken and every participant of the round table discussion formulates a specific type of activities that he/she undertook in this period of time
4. now we will assign codes to these two participants
5. at the beginning it was a free flow conversation, every participant expressed his/her opinion and formulated his/her understanding
6. then an evaluation is taking place, i.e. in what age-specific period time this understanding has been formulated and under influence of what factors
7. Culture – Code 01; 10
Socio-cultural system – Code 03; 30

A) Researcher/Doctoral student & Industry representative

- 120 recommendations for process improvements for “n” period of time – Code: 02; 20 underdeveloped tools – Code: 03; 31
- employee utilization during the work day: Code 101 = - mock up: Code 102 – thorough debugging of production prototype: Code 103
- lack of quality management activities: Code 104
- lack of connectivity between product produced and instrumentation used by the employees for its production: Code 105 = questions from a quality lead: Code 106 + work of a technological group: Code 107+ manager of the department: Code 108 + engineer: Code 109 + engineering report(s): Code 110 + correction of the instruments: Code 111 + reduction of the number of issues at the engineering level: Code 112 = productive work of the employee: Code 112 + full employee utilization during the work day: Code 113 – training: Code 114 – education: Code 115 – round-table discussions: Code 116 – research work: Code 117 = \$\$\$+: Code 118; \$\$\$-: Code 118
- consciousness communication: Code 119
- mock-up process: Code 120

B) Navy representative & Industry representative

- 120 recommendations for process improvements for “n” period of time – Code: 01-120,13; 02- 60, 22; 03- 20, 33 underdeveloped tools – Code: 03; 31
- design deficiencies: Code 201 + engineering deficiencies: Code 202 + production defects: Code 203 = discrepancy between the qualification of employee and task required to perform: Code 204 -multitasking: Code 205+classification of deficiencies: Code 206
 - historical (experience): Code 207
 - situational (intuition): Code 208
 - know-how: Code 209
- + cost of each deficiency: Code 210 + development of a strategy to eliminate the

deficiencies: Code 211 + development of System Dynamics (SD) modeling: Code 212 +
elimination of all existing procedures that are not working: Code 213

- customer changes: Code 214

C) U.S. Senate representative & Industry representative

- 120 recommendations for process improvements for “n” period of time – Code: 01-120, 15; 02- 10, 25; 03- 2, 33
underdeveloped tools – Code: 03; 35
- cost effectiveness: Code 301 +welding cost (in the past): Code 302 – new welding cost:
Code 303 + fitting (in the past): Code 304 – new fitting cost: Cost 304 – time (in the
past): Code 305 + new time: Code 306

This article is an awareness-raising work. The existing conditions built an understanding that a process of doctoral candidates work is lacking practical applicability and has been abstracted to the understanding of its uselessness in the production cycle. To bring some clarity to these issues is a purpose of this article.

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Information about Tatyana Ishutkina SCHWIPAR Centre for Innovational Development

- represents quality aspects in the shipbuilding industry to the industry, government, and educational institutions
- specializes on quality concepts (analysis of the existing quality concepts in conjunction with the company's strategy)
- sees development of the quality concepts through styles of quality management
- focuses her work on reviewing strategy of quality management:
- at the genetic level. To identify concepts for developing a common DNA between existing technologies used by the quality management and working environment of the employees in the Shipbuilding industry at the present moment when degradation of the quality tools is taking place in the existing paradigm of quality concepts
- by establishing a common DNA within quality management styles and across different quality concepts
- by establishing a common DNA between quality management styles and specific products produced by the company
- has overall experience in the shipbuilding industry for almost 20 years
- uses systems thinking as a methodology for academical basis to represent quality topics
- her academical background is:
- (2009 -present) Doctor of Business Administration (DBA) program in Management Science in University of Strathclyde Business School, Glasgow, Scotland. Research topic: An Examination of Quality Concepts and Their Value: Developing a Better Convergence between Quality Management and Systems Thinking in the U.S. Shipbuilding
- (2006-2009) Post Graduate Certificate in System Dynamics from Worcester Polytechnic Institute, Worcester, MA
- (2000-2002) MSc in Administrative Studies from Boston College, Chestnut Hill, MA
- (1997-2000) BA in Administrative Studies from Boston College, Chestnut Hill, MA
- (1976-1981) MSc in Electrical Engineering from N. Novgorod State University, Nizhny Novgorod, Russia

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