Supply Chain Management of Apparel Industry in Vietnam: problems & opportunities

Quoc Trung Pham, Ph.D.
Vice Dean, School of Industrial Management,
Ho Chi Minh City University of Technology (Vietnam National University-HCM)
E-mail: pqtrung@hcmut.edu.vn

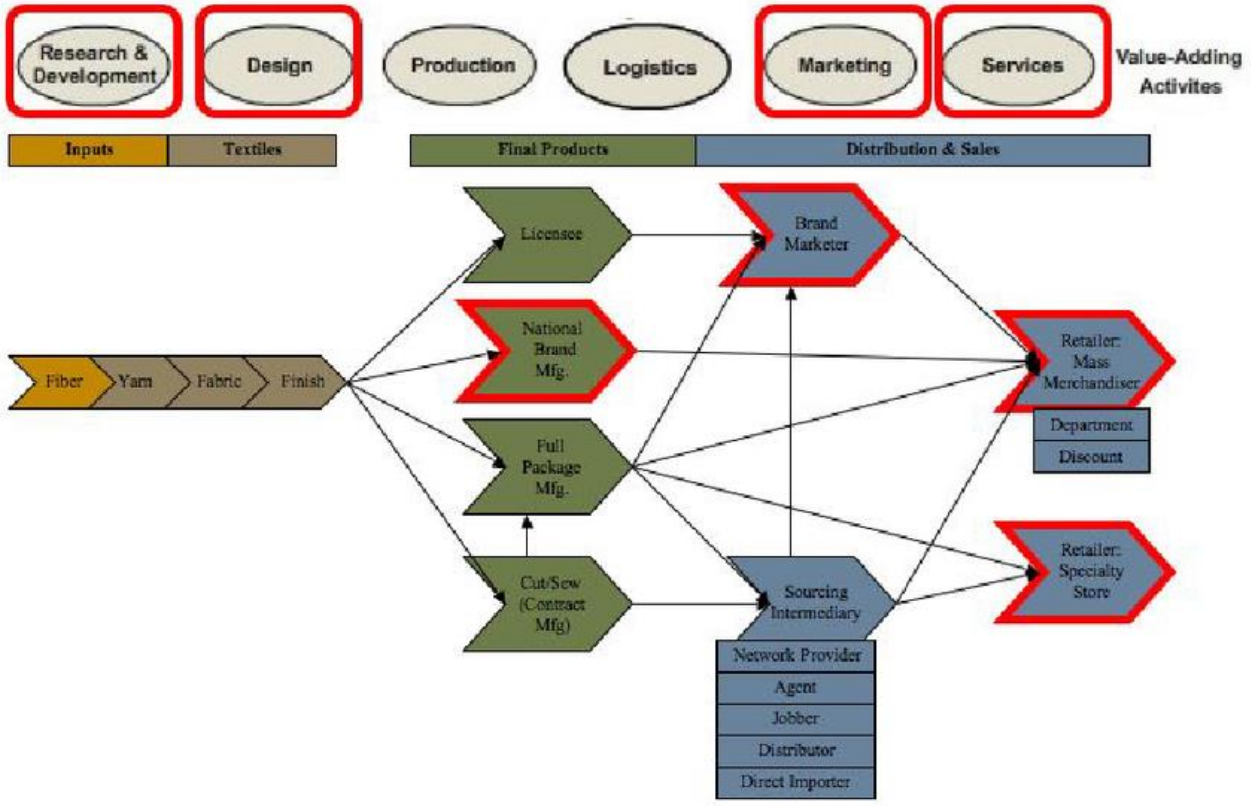
Main content

- Introduction
- Method & Literature review
- Risks in SCM of Apparel industry
- SCM capability in Vietnam
- Problems of SCM of Apparel industry
- Opportunities & Recommendations
- Conclusion


Mongolia
North Korea
Japan
China
Tibet
Pakistan
Bhutan
Nepal
South Korea
India
R.O.C. (Taiwan)
Burma
Hong Kong
Macau
Laos
Bangladesh
Thailand
Vietnam
Cambodia
Philippines
Sri Lanka
Maldives
Malaysia
Singapore
Indonesia


Family Owned FOB
Garment Factory
Ho Chi Minh City, Vietnam


2015 Textile/Apparel
Technology Seminar
Hochiminh City, September 09, 2015
MOST


Research & Development
Design
Production
Logistics
Marketing
Services
Value-Adding Activites
Inputs
Textiles
Final Products
Distribution & Sales
Fiber
Yarn
Fabric
Finish
Licensee
National Brand Mfg.
Full Package Mfg.
Cut/Sew (Contract Mfg)
Brand Marketer
Sourcing Intermediary
Network Provider
Agent
Jobber
Distributor
Direct Importer
Retailer: Mass Merchandiser
Department
Discount
Retailer: Specialty Store

1.Introduction (1)

- Apparel is one of the oldest and largest export industries in the world. Apparel is the typical "starter" industry for countries engaged in export-oriented industrialization.
- Currently, the global garment and textile industries face changing international trade regimes, concerns with labor standards, new competitors and forms of competition. These challenges have a strong impact on developing-countries like Vietnam.
- The strong presence of foreign investors in the textile sector reflects the importance of joint ventures in Vietnam. However, the entry of investors from foreign countries as independent textile producers also put a strong pressure on the local businesses.

1.Introduction (2)

- In Vietnam, since 1990, apparel industry developed very fast and played an important role in national economic development. Currently, Vietnam is in the top 5 countries of exporting apparel products.
- According to VN statistics, apparel industry in Vietnam contributed 10% of total industrial manufacturing value. Export development rate of this industry is about 15% per year (2011~2015).
- Although apparel industry got a high import-export value (>30 billions USD), and was increasing quickly since 2000, the overall effectiveness of SCM of apparel industry in Vietnam is still low.
- Therefore, in order to sustain their businesses, Vietnamese apparel industries **need to find a new strategy** and a suitable solution to overcome their problems, and to join the global value chain.

2.Method & Literature review (1)

- **Data collection** :
  - Secondary data: published reports, academic papers, related materials from the WEF, GSO, World-bank, and the internet…
  - Primary data: expert interviews, questionnaires, discussion.
- **Data analysis and result evaluation** :
  - Qualitative analysis: document analysis, lesson learnt, group discussion, depth interviews
  - Quantitative analysis: SCOR, descriptive statistics, weighting evaluating, score measurement.

2.Method & Literature review (2)

- **Material supply** : Access to materials (fiber, yarn, fabric) is essential to producing apparel (Rivoli, 2014). According to Brown and Zukerman (2012), waiting for materials contributes to the longest part of the product cycle and is detrimental in terms of hidden costs.
- **Manufacturing capabilities and capacity** : In apparel industry, labor cost can account for up to two-thirds of the total production cost (Rivoli, 2014). Flexibility in offering customers lean or agile manufacturing can result in a national industry's competitive advantage.
- **Transportation networks and logistics services** : These factors contribute to the success of SCM, which include "hard" dimension (tangible infrastructure such as roads, ports, highways, and telecommunications), and "soft" dimension (customs management, and other institutional aspects). Final product cost and delivery time depend on these factors (Gereffi & Memedovic, 2003).

2.Method & Literature review (3)

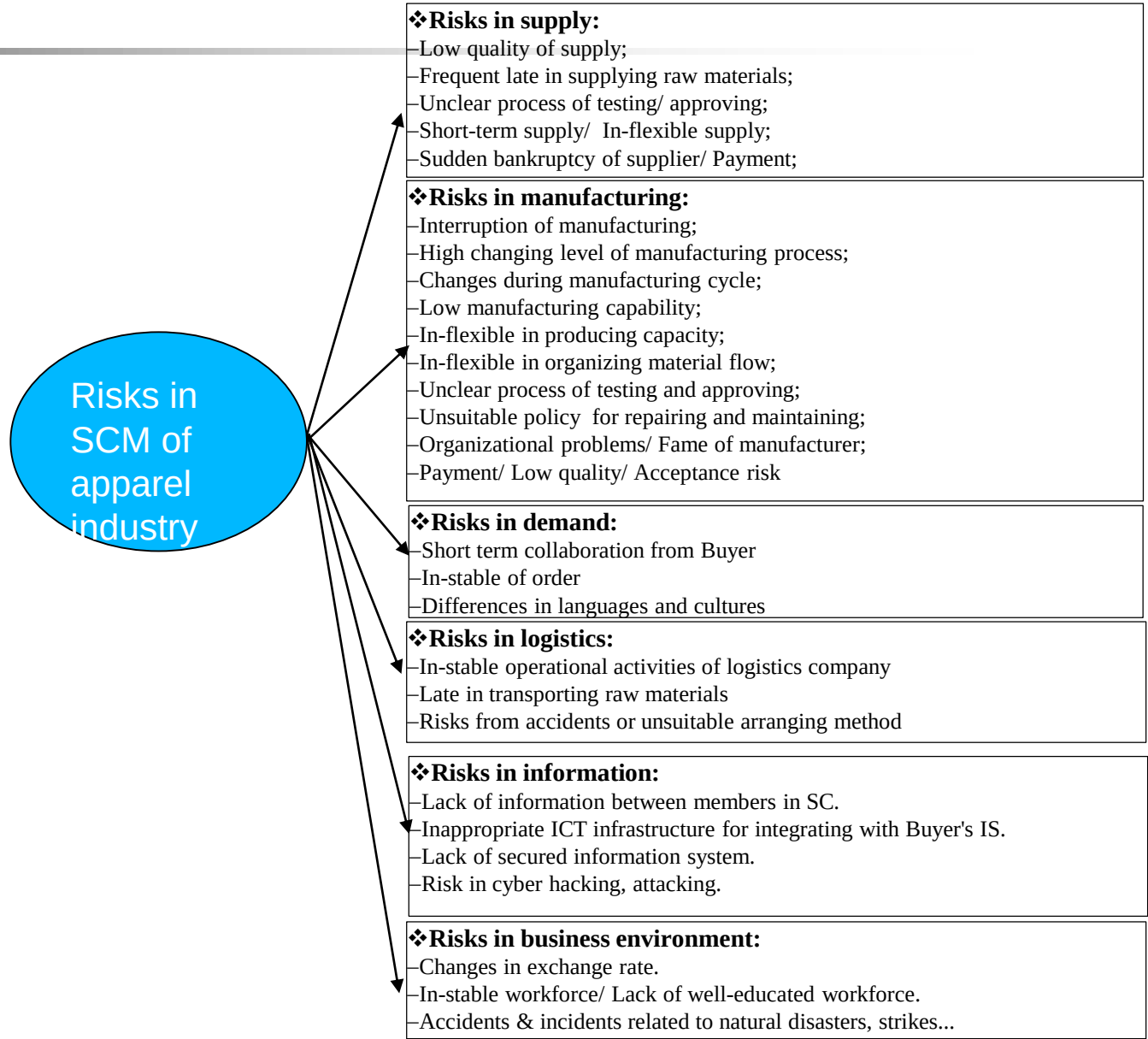
- **Risks in apparel SCM**: is any uncertain situation in information flow, material, and product from supplier to delivery of final product to consumer. Based of Punniyamoorthy et al. (2013), 6 risk factors of SCM of apparel industry are realized, including: supply, manufacturing, demand, logistics, information, and business environment.
- **SCM capability**: there are many approaches for measuring the capability of SCM. In which, 3 most popular methods are:
  - The Balanced Scorecard – BSC
  - Supply chain operational reference – SCOR
  - Resource – Output – Flexibility (ROF)
- **SCM capability measurement**: Based on previous researches, 8 key attributes for evaluating the capability of SCM of apparel industry include: (1) design and product development, (2) information sharing, (3) improvement & innovation, (4) total cost, (5) delivery time, (6) SC quality, (7) flexibility, and (8) marginal profit.

3.Risks in SCM of apparel industry (1)

- Supply chain operations with many members in different countries are always present with many uncertainties, so risk management plays an important role in efficient supply chain performance.
- Based of Punniyamoorthy et al. (2013), 6 risk factors of SCM of apparel industry are realized, including: risk in supply (7), risk in manufacturing (13), risk in demand (4), risk in logistics (3), risk in information (4), and risk in business environment (4)
- By conducting depth-interviews with some managers at some garment enterprises in HCMC, some risk factors of the Vietnam apparel supply chain when producing FOB orders are identified as the following figure.

3.Risks in SCM of apparel industry (2)

- Based on depth-interview with some managers in Vietnamese apparel industry, 9 measurement scales were removed from the original scales and 7 new scales were added to be suitable with Vietnam context.



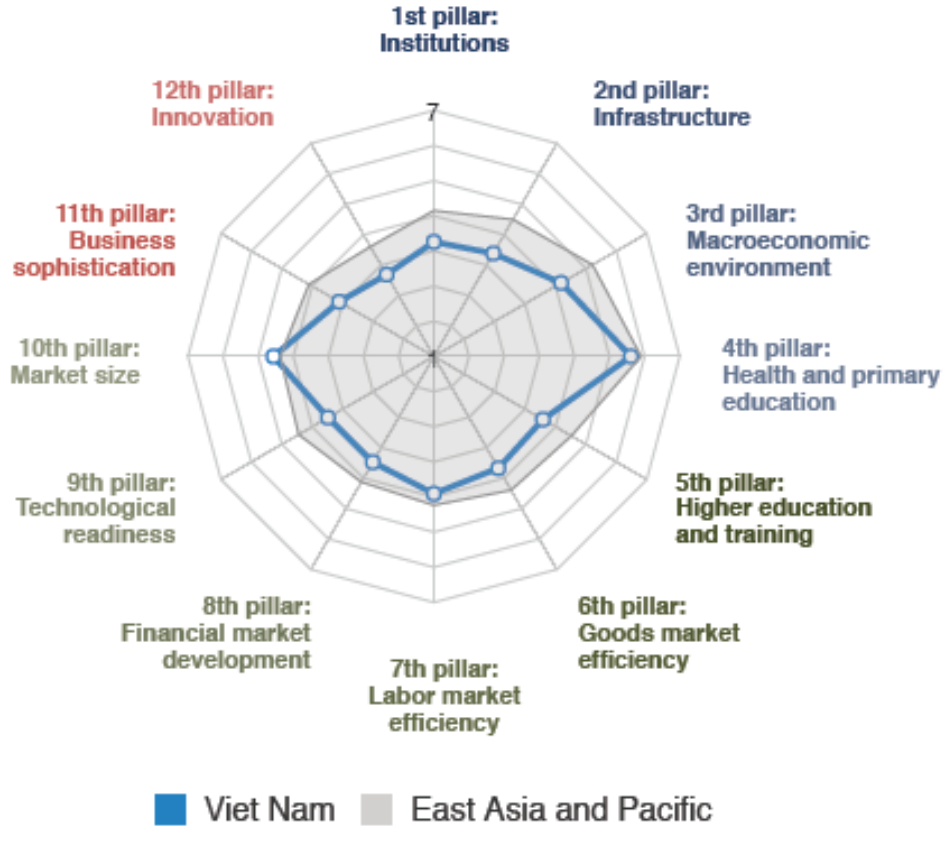
3.Risks in SCM of apparel industry (3)

- 9 measurement scales were removed include:
  - lack of technical secret
  - depend on a unique supplier
  - lost of core competency
  - frequent product retrieval
  - acceptance risk
  - frequent late delivery
  - warehouse storage risk
  - unsuitable transportation method
  - unstable economic-social policy
- 7 new scales include:
  - payment
  - acceptance risk
  - fame of manufacturer
  - low quality
  - differences in languages and cultures
  - changes in exchange rate
  - in-stable workforce.

4.SCM capability in Vietnam (1)

Most problematic factors for doing business

Source: World Economic Forum, Executive Opinion Survey 2017

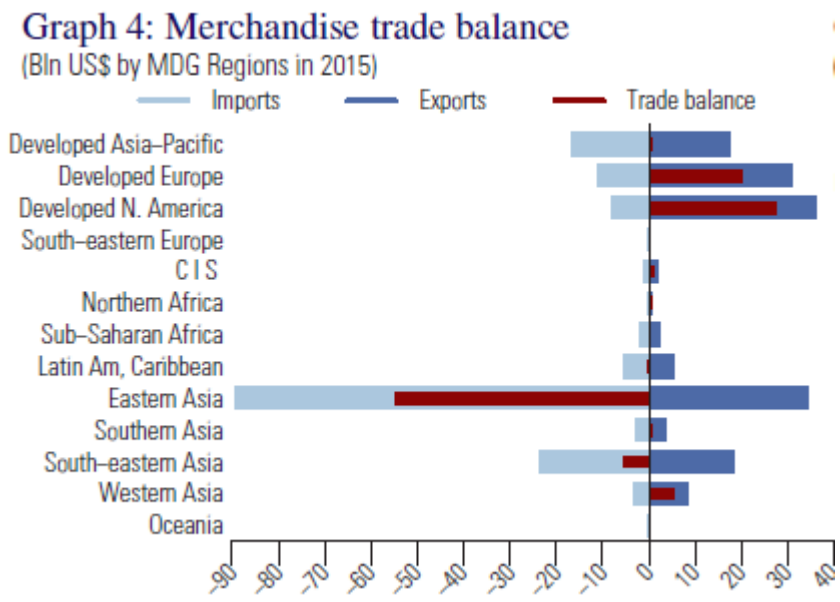


4.SCM capability in Vietnam (2)

Vietnam's Major Garment and Textile Exports Markets (2013)

Vietnam's Major Garment and Textile Exports Markets (2013)	Percentage Change in Garment and Textile Exports (2012-2013)	Total Value of Garment and Textile Exports From Vietnam (2013)
USA	14.2%	US$8.6 billion
European Union (EU)	8.8%	US$2.7 billion
Japan	20%	US$2.4 billion
South Korea	44%	US$1.8 billion

Source: Vietnam National Textile and Garment Group (VINATEX) 2014 Report



Indicators about apparel manufacturing capability	
Labor costs (per month)	**~$100-$150**
Productivity	23rd rank
Workforce skills Quality	64th rank (out of 144) Skilled & trained workers 96th rank (out of 144) Consistent and higher quality
Adaptability (flexible, lean, agile)	Strength – Agile manufacturing
Type of production	Mostly CMT-based Early stages of value-added services/ full-package production
Indicators about business environment	
Human rights	Isolated occurrence of violations
Safety	**Acceptable safety**
Environmental sustainability	3.67 (higher compliance)
Indicators about infrastructure and logistics services	
Customs	Ranking 61
Infrastructure	**Ranking 44**
International shipments	**Ranking 42**
Logistics competence	Ranking 49
Tracking and tracing	Ranking 48
Timeliness	Ranking 56
Transport infrastructure	Ranking 76
Internet & communication technology use	Ranking 86
Electricity and phone infrastructure	Ranking 81

(Source: World Bank, 2014; WEF report, 2014; UN Comtrade, 2016)

4.SCM capability in Vietnam (3)

By conducting depth-interviews with some managers of several garment and textile corporations located in HCMC based on SCOR measurement scale, the weights, scores, and ranks of main attributes of SCM are evaluated as in the following table.

SCM capability of Vietnam Apparel industry (2014)

Attributes	*Weight*	*Score*	*Comment*	*Rank*
Marginal profit	**0.2322**	**0.7973**	Good	**1**
SC quality	**0.1397**	**0.7484**	Good	**3**
Information sharing	0.0797	**0.7290**	Good	6
Delivery time	0.0934	**0.7282**	Good	4
Flexibility	**0.2166**	0.6996	Fair	**2**
Total cost	0.0506	0.6657	Fair	8
Design & Product development	0.0793	0.6474	Fair	7
Improvement & Innovation	**0.1077**	0.5499	Average	5

4.SCM capability in Vietnam (3)

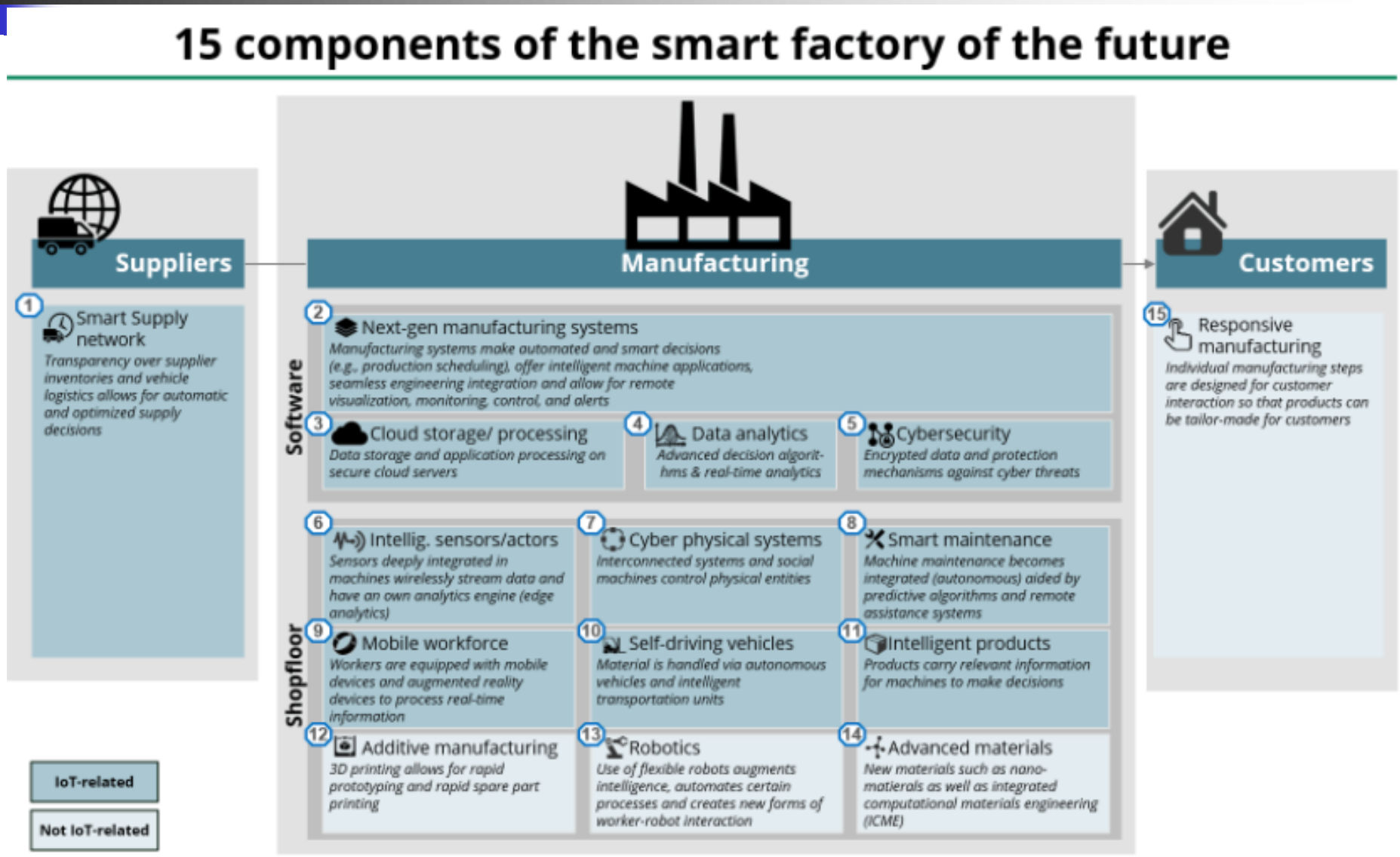
- Strengths
  - Attractive market size (>90 millions).
  - Abundant of workforce with fairly low salary level (~150 USD/month).
- Weaknesses
  - High logistics expense/cost in SCM of apparel industry.
  - Low level of innovation & low investment on R&D.
- Opportunities
  - Free trade agreements (WTO, AEC, AFTA, TPP, EU-VN...).
  - Raising of population and average income group.
- Threads
  - Industry 4.0 with automated systems replacing human laborers.
  - New competitors from various countries in the world.

5.Problems in SCM of apparel industry (1)

- High logistics expense/cost in SCM of apparel industry.
  - Risk in logistics/ information
  - Reasons:
    - Low improvement of high speed road & transportation capacity
    - Inappropriate port networks & poor quality custom services
    - Low level of ICT application & lack of supporting e-business services
    - Inflexible government regulations regarding to import-export

=> Encouraging ICT application and developing supporting e-business services

SCM toward Industry 4.0



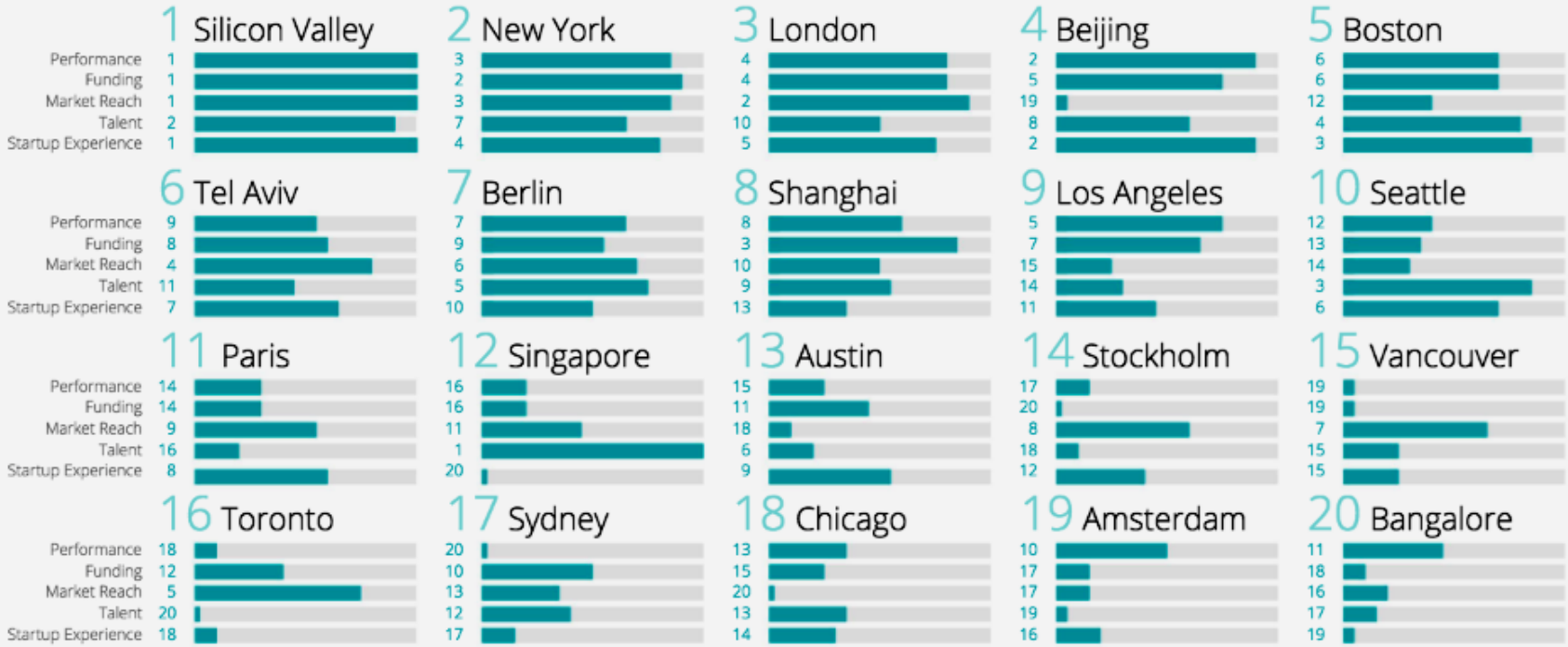
5.Problems in SCM of apparel industry (2)

- Low level of innovation & low investment on R&D.
  - Risk in business environment/ manufacturing
  - Reasons:
    - Poor educational system & Lack of high quality employees
    - Low spending on R&D activities
    - Immature of technology capability & lack of IP protection
    - Lack of global startup ecosystem & sustainable business networks

=> Building a strong linkage between businesses in apparel SC and supporting global startup ecosystem

Global Startup Ecosystem

2017 Global Startup Ecosystem Ranking



6.Opportunities & Recommendations (1)

- Free trade agreements (WTO, AEC, AFTA, TPP, EU-VN...)
  - Risk in supply/ manufacturing
  - Recommendations:
    - Take advantages of FTA to boost import-export activities
    - Increase manufacturing capability & quality assurance
    - Increase proportion of local material supply

=> Increase proportion of local material supply

6.Opportunities & Recommendations (2)

- Raising of population and average income group
  - Risks in demand/ business environment
  - Recommendations:
    - Move to higher level of SC (CTM->FOB->DOM->BOM)
    - Improve the labor conditions & quality of life
    - Change from export-oriented strategy to local consumption

=> Change from export-oriented strategy to local consumption

7.Conclusion (1)

- In general, based on data analysis, SCM of apparel industry in Vietnam is currently facing 2 most important problems, including: (1) high logistics cost, and (2) low R&D investment.
- Besides, some risk factors of SCM in Vietnam context also realized, in which risks in supply, manufacturing, demand, logistics, information and business environment are affecting on the effectiveness of SCM of apparel industry in Vietnam.
- Some recommendations for improving these problems & risks are:
  - Encouraging more ICT application
  - Building a strong linkage between businesses in SC
  - Increasing proportion of local material supply
  - Changing from export-oriented strategy to local consumption

7.Conclusion (2)

- Some limitations of the research:
  - Based mostly on secondary data report
  - Limited sample size for quantitative analysis
  - Some explanations are somehow subjective
- Some directions for future research include:
  - Further data collection and analysis for understanding more about the causes or reasons
  - More connecting between risk analysis and SCM capability.

References

Brown, P., & Zukerman, A. Developing leaner product development and sourcing operations. *Apparel Magazine.* Retrieved from http://apparel.edgl.com/ (2012).

Frederick S. E. *Development and application of a value chain research approach to understand and evaluate internal and external factors and relationships affecting economic competitiveness in the textile value chain*: North Carolina State University (2010).

Gereffi G. The International Competitiveness of Asian Economies in the Apparel Commodity Chain, ADB. (2002)

Gereffi G. and Memedovic O. *The global apparel value chain: What prospects for upgrading by developing countries*: United Nations Industrial Development Organization Vienna (2003).

Globaltrade.net, "Vietnam garment industry strengthens from low labor cost" (2012). Retrieved from: http://www.globaltrade.net/

Nguyen, T.T.H., Do, T.L., and Bui, T.C.L. Factors supply chain risk in Vietnam apparel industry. Science & Technology Development Journal, 20 (4), (2017).

Olson D. L. and Wu D. Risk management models for supply chain: a scenario analysis of outsourcing to China. *Supply Chain Management: An International Journal, 16*(6), 401-408 (2011).

Punniyamoorthy M., Thamaraiselvan N., and Manikandan L. Assessment of supply chain risk: scale development and validation. *Benchmarking: An International Journal, 20*(1), 79-105 doi: 10.1108/14635771311299506 (2013).

Rivoli, P. *The Travels of a T-shirt in the Global Economy.* Hoboken, NJ: John Wiley and Sons. (2014).

Sardar S. and Lee Y. H. *Analysis of outsourcing strategies for cost and capacity flexibility in textile supply chain management.* Proceedings of the 17th International Conference on Industrial Engineering Theory, Applications and Practice, Pusan National University, Busan, South Korea (2013).

Schwab K. The Global Competitiveness Report 2017–2018, World Economic Forum (2017).

Vedel M. and Ellegaard C. Supply risk management functions of sourcing intermediaries: an investigation of the clothing industry. *Supply chain management: An international journal, 18*(5), 509-522 (2013).

Vietnam Custom Office. "Tình hình xuất khẩu, nhập khẩu hàng hóa của Việt Nam tháng 12 và 12 tháng năm 2016" (2017).

Vo, VT. and Pham, QT. Apply CFMAE for building performance evaluation system of the supply chain of apparel industry in Vietnam. *STDJ*, 17 (4), (2014).

World Economic Forum. Enabling Trade Unlocking the Potential of Mexico and Vietnam, WEF (2016).

Thank you very much !!!

Questions & Answers