

A CONCEPTUAL MODEL OF EXCELLENT PERFORMANCE MODE OF PORT ENTERPRISE LOGISTICS MANAGEMENT

He Jiang¹

Wei Xiong¹

Yonghui Cao^{2,3,4,*}

¹ School of Management, Zhejiang University, China

² School of Economics & Management, Henan Institute of Science and Technology, China

³ School of E-commerce and Logistics Management, Henan University of Economics and Law, China

⁴ China Institute for Reform and Development

* corresponding author

ABSTRACT

Port as one of the key hubs of international logistics, which has become the main part and the base of global logistics management. The port enterprises, plays an important role in the global supply chain. However, due to the lack of understanding in port supply chain management, coordination between the port enterprises, the integration of business process is not perfect, the lack of information sharing between various organizations, ports enterprises usually failed to fully play its positive role. Based on this, the paper makes the port enterprises as the research object, and introduces the excellent performance mode into the port enterprises. In order to study the port enterprises how to carry out effective quality management, and formation the coordination and integration of upstream and downstream of enterprises, so as to realize the competitive advantage in port logistics.

Keywords: Port Enterprises; Performance Excellence Model; Logistics Management

INTRODUCTION

As one of the key hubs of international logistics and transportation, the port plays an important role in the global maritime supply chain, and it has become the main link and operating base in the global logistics. As an important node of the global maritime supply chain, port enterprises meet the needs of customers better which has become the main target to enhance the competitiveness, in order to achieve this goal, port enterprises must make the high value-added maximize, to achieve the requirement of low cost and high quality, only through this way, the port enterprise can improve customer satisfaction, and create more profit[1-4]. However, due to the lack of understanding in port supply chain management,

coordination between the port enterprises, the integration of business process is not perfect, the lack of information sharing between various organizations, ports enterprises usually failed to fully play its positive role[5-8]. Applying the theory of supply chain management to the practice of port management and research on port supply chain management further, which has become a strategic weapon for port enterprises to obtain international competitiveness in the knowledge economy and the background of globalization[10].

The supply chain management research mainly focus on manufacturing enterprises, nearly 10 years the researchers begin to study the port supply chain management, but empirical articles is very few. Even in the port supply chain management, different scholars have different ideas[11-13]. Robinson (2002)

CONSTRUCT THE EXCELLENT PERFORMANCE MANAGEMENT MODEL FOR PORT ENTERPRISE

PRINCIPLE IN MODEL BUILDING

In the process of constructing the excellent logistics system of port enterprises, we put forward the principle: “leadership support, focusing on the customers, implementing the comprehensive system, emphasis on application effectiveness, realizing the information support, emphasizing the continuous improvement”. The “leadership support” principle requires that the development of excellent performance model should be from the perspective of core competence in the leadership and strategic level, guide the organizations form systematic thinking in customer service, resource management, process management, system management and self enhancement effectively , so as to form a unified organizational goals and visionary leadership. “Focus on customers” principle requires excellent performance management mode is not empty talk, not only to optimize the internal procedure as the foothold, and should take the core competitiveness as the direction, to win customers trust and support, mining customer demand deeply, manage the customer value and customer satisfaction. The principle of “implementing the comprehensive system” requires of the excellent performance management system should promote systematically, and achieves leadership, strategy, customers and markets, resources, processes, measurement analysis and improvement and overall improvement of business results. However, which should identify the foothold, and strive to achieve the overall promotion through a single point of breakthrough, should not blindly comprehensive system. The principle of “focus on the application effect of” ask the excellent performance management to improve the management efficiency as the goal, the effect is obvious before and after the application; and combine the modern logistics management work with the excellent performance management model together, promote customer service, organizational learning, agile supply chain, innovation management, process optimization and other results. “Information support” ask should not meet the requirements of performance excellence management only by documents, should solidify into the information system, and apply into the daily work, to form “curing, quantization, optimization” effect. The principle of “emphasis on continuous improvement” requires the formation of an organizational culture of self-diagnosis, self-improvement and self-promotion through excellent performance management.

MODEL BUILDING

On the basis of core values and concepts, according to the performance management standards, the paper sets up: leadership vision; customer orientation in the pursuit of excellence; organization and members of the organization learning; respect for employees and partners; sensitivity; focus

who researches on port supply chain management pointed out that due to the increase of port freight volume, shipping and land transportation enterprises seek economies of scale, and hope that there will be obvious rationalization and functional integration of Port Logistics[14]. Carbone and Martino (2003) analysis the characteristics of port service supply chain in the perspective of how to integrated the structure of supply chain management, and point that the higher the integration is, the whole supply chain can be more competitiveness[15]. Panayides and Song (2008) propose the terminal supply chain integration model which is an empirical structural model, and including “information and communication systems”, “value-added services”, “multimodal systems and operations”, “supply chain integration practices” and other measurement variables[16]. Rodrigue and Notteboom(2009) argue that the port enterprise is facing the increasingly complex international trade patterns, the global terminal operators and the requirements of transportation companies and other strategic behaviors, which require to integrate the inland transport and port logistics system[17].

In addition, the excellence performance model is a management framework to enhance the enterprises competitiveness, since its birth, the world has caused a boom in learning. In essence, the excellence performance model comes from the quality management practice. In the past 30 years, many scholars have tried to define the connotation and operational definition of quality management practice. Feigenbaum, Deming, Juran et al according to their own practical experience and management philosophy, outline the conceptual framework and the core elements of quality management practice including senior leadership support, employee participation and process management etc. Saraph et al. take the quality management practice as a complete concept to build on the basis of the experience of the great masters in quality first, point out that quality management practice is a kind of management measures and plans for improving quality, reducing cost and improving production efficiency. The development of the theory of quality management practice, which promote the enthusiasm of enterprises to implement quality work. Today, the theory of total quality management is becoming more and more popular, enterprises pay more and more attention to the development of strategic quality.

Based on the above analysis, introducing excellent performance mode into port logistics enterprise, which will become a new research idea to improve the performance of the port logistics enterprises, so as to enhance the competitiveness of the port logistics enterprises[18-19]. However, through the literature review, the relevant research is very few, and the logistics system as an important part of the port enterprise operation, it is urgent to study it deeply[20-21]. Based on this, this paper takes the port enterprises as the research object, studies how to carry out supply chain management effectively in the port enterprises, and forms the coordination and integration of upstream and downstream, so as to realize the competitive advantage of port enterprises

the future; management innovation; management based on fact; social responsibility; focus on results and innovation value; system view. So, the paper bases on the process of Method - Expansion - Learning - Integration - Results, and make seven criteria for the development in enterprise management maturity: leadership, strategy, resources, customer and market, process management, measurement, analysis and improvement and business results. The “leadership” holds the organization direction, and pay close attention to the “business results”, so “leadership”, “strategy”, “customer and market” which constitutes a “leading role” triangle; “resources”, “process management”, “business results” constitute a triangle of “resources, process and the result”. The “measurement”, “analysis and improvement” are the basis for organization operating, which is the chain to link the two triangles, and turn the PDCA wheel of improvement and innovation.

Excellent performance management model focus on the application process and the practice needs in modern logistics construction, port enterprise excellent performance management model is shown in Figure 1.

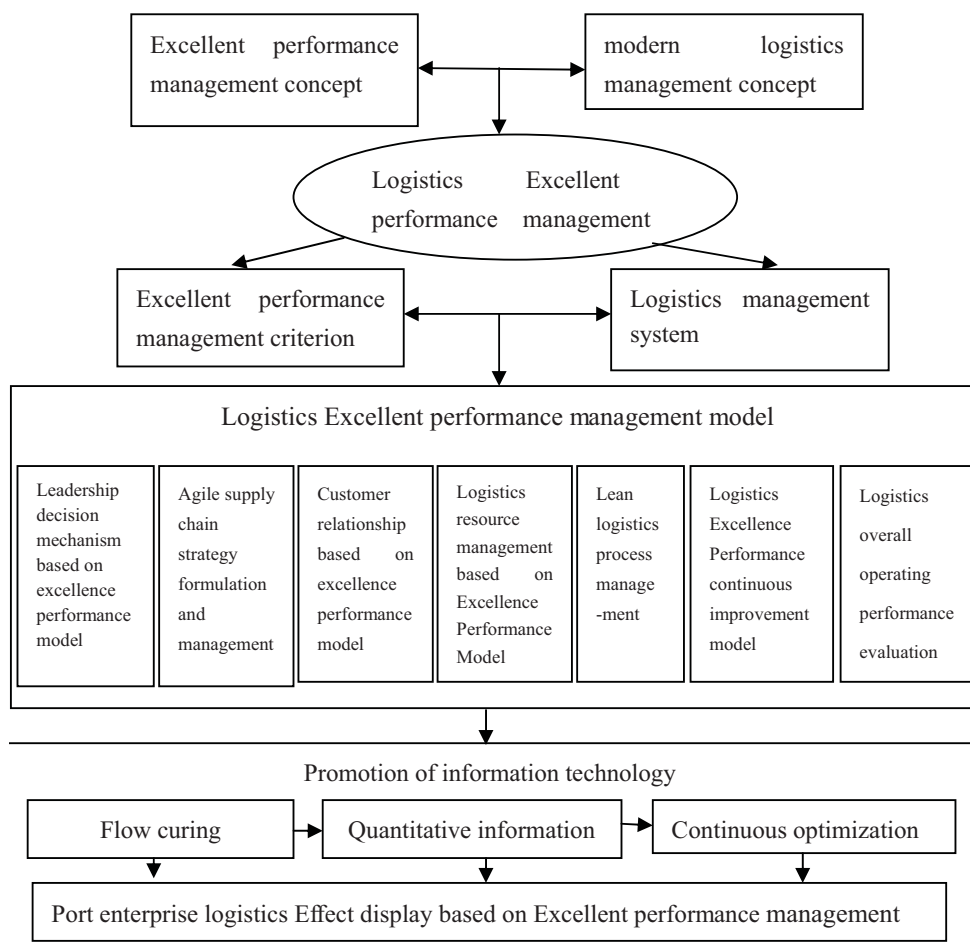


Fig. 1. Port enterprise logistics system excellent performance model

Leadership

Based on the excellent performance management criteria, aiming at the construction and management of modern logistics in port enterprises, which make the enterprise leaders to form a new understanding in the core business of modern logistics, to establish an efficient organizational leadership for the purpose of building modern logistics construction and form the core competitiveness. Through the introduction of the leadership promoting project, build the leader decision consultant mechanism, and form distinctive leadership in the port logistics management

Strategy

From the strategy, the excellent performance management should aim at the construction of modern logistics system in port enterprises. According to the requirements of excellence performance management criteria, forming the specific strategic objectives and strategic deployment, to build the integration of upstream and downstream of the agile supply chain, and to form the strategic decision-making mechanism accords with modern logistics.

Customer and market

At the customer and market level, the port enterprises should be in accordance with the requirements of excellence performance management, to build a excellence service brand system, according to customer driven principle, optimize the internal operation and management mechanism, using customer expectations, customer demand, customer value, customer complaints, customer satisfaction and so on to establish the quantitative evaluation index and evaluation method of customer satisfaction in logistics distribution, and realize the customer relationship management information. By providing customers with standardized and differentiated services, build the service system in the excellence performance model,

and provide customers with effective value-added services, and constantly achieve market control

Resources

In terms of resources, mainly from human resources, financial management, logistics infrastructure, logistics information system, logistics engineering technology and so on, Based on the goal and strategy of modern logistics construction, in accordance with the requirements of excellence performance criteria, to build logistics training system, form excellent logistics management platform, improve the financial cost accounting control system and investment management mechanism. Optimize the logistics infrastructure construction, equipment investment and management, through the logistics information system curing management process, using Internet and other logistics engineering technology to improve logistics efficiency and so as to form an excellent management model

Process management

In process management aspect, the key point is the operation management in logistics center, internal process management, marketing docking, coordination between upstream and downstream of the enterprise. And then, it takes process reengineering as a breakthrough, to form process management mechanism of background service.

The introduction of a total production management concept, which can form lean logistics management model by using the internet of things technology to solidify the excellent model for process management. Finally build a comprehensive perception, interoperability, intelligent processing of the whole logistics process management model.

Measurement, analysis and improvement

Focusing on the key performance indicators (KPI) of logistics center as a breakthrough, the port enterprise establish performance management and performance analysis mechanism to achieve the management system in logistics center and post performance. Under the guidance of the excellent performance criteria, it will form the self-evaluation and diagnosis management mechanism of logistics center and form a more mature logistics center PDCA management model.

Through the introduction of information technology to achieve excellence performance standards for measurement, analysis and improvement of management requirements, it will automatic achieve the acquisition of KPI data, analysis of the operation data, the excellent management effect of the intelligent decision diagnosis. On the basis of the above, the excellent performance criteria improve management level.

Business results

Using the excellent performance management model to guide the development of logistics cost center to profit center, which form customer service performance, product and service performance, resource performance, financial

performance, process performance and other aspects performance and evaluation mechanism.

THE PLANNING OF EXCELLENCE PERFORMANCE MODEL IN PORT ENTERPRISE

The excellence performance model cannot be accomplished overnight in port enterprise, which need to be carried out in a planned way. In this paper, the author puts forward the short-term and long-term proposal, so that the port enterprises can be used as reference in the process of constructing the excellent logistics system

THE SHORT-TERM CONSTRUCTION CONTENT IN PORT ENTERPRISE

In the short-term, the construction content is shown in Figure 2.

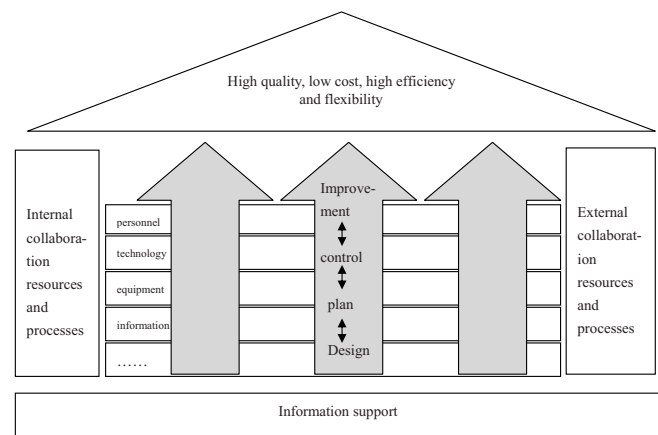


Fig. 2. The framework of excellence performance model in short-term construction

First, the lean management is the direction of the port enterprises, to sort out the internal logistics activities. That is, the port enterprise card the logistics management involves the “technology, equipment, personnel, information,” and other resources and processes activities, to complete the initial accumulation of the best practices in the logistics operation, and combined with the actual situation to the form the mechanism of “design, plan, control, improvement”.

Second, combing with the company’s internal and external resources and processes, the port enterprise form a special improvement program in the direction of excellent performance.

Third, the port enterprise realize information support of excellent performance management. Based on the present logistics information technology, the enterprise should integrate and enhance the application further, and to support the modern logistics operation management of port enterprises

THE LONG-TERM CONSTRUCTION CONTENT IN PORT ENTERPRISE

In the long-term, the construction content is shown in Figure 3.

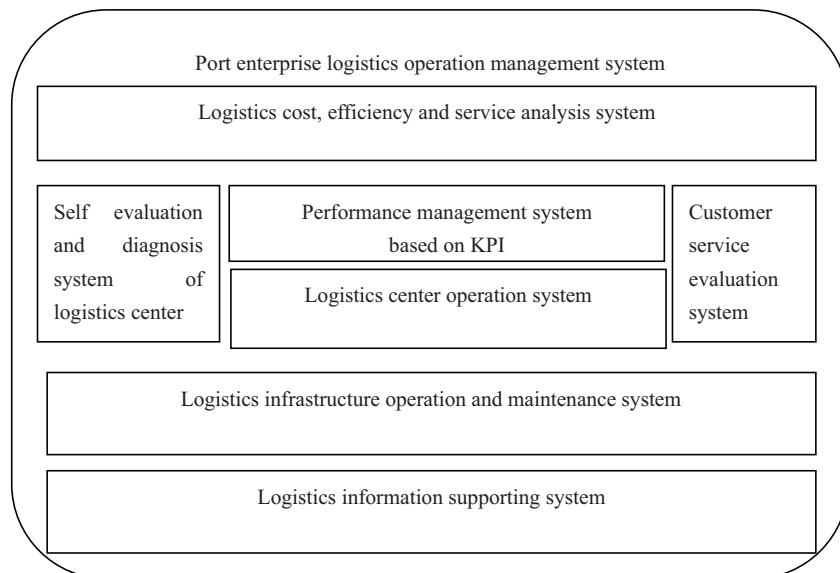


Fig. 3. The framework of excellence performance model in long-term construction

The short-term construction content corresponds to figure 3 in the “logistics center operation system”, “logistics infrastructure operation and maintenance system” and part of the “support system of Logistics information”. In the long term, which will be divided into four steps:

First, based on the current port enterprise logistics center evaluation rules, we should build and improve the performance management system based on KPI, then take comprehensive evaluation and measurement of logistics business operation, and implement in department and post.

Second, it will establish logistics center self-evaluation system, and the object of self-evaluation needs to cover the entire logistics center staff, in addition to cross evaluation, up and down evaluation each other. It will establish logistics center diagnosis system, which carry out a full range of diagnosis in responsibility orientation, process design, feedback mechanism, trace retention, examination results, etc. and implement improvement effectively.

Third, we will improve customer communication channels, and do an effective customer satisfaction survey to establish an objective customer service evaluation system which verify the quality and effectiveness of logistics operations from the perspective of the customer.

Fourth, it will build a comprehensive logistics cost, efficiency and service analysis system, which is the highest point of total operation management and the engine of macro guidance and strategic decision making. Through the analysis of the mechanism, we can find out the existing problems, explore the potential value, analyze the trend of the operation, and provide the scientific development plan for all employees

In addition, in the long-term construction, logistics information support system should be updated and improved

CONCLUSION

To sum up, the “excellent performance management model” provides a set of evaluation criteria for management maturity of port enterprises, and the port enterprise can accept the concept and method which integrated the modern quality management. Through review its own logistics system, the port enterprise could find the performance gap between itself and the evaluation criteria, and then guide the enterprise logistics system to improve the management of the system, and then guide the enterprise logistics system to improve the management system. At the same time, through the introduction of the excellence performance model, the port enterprise needs to build a lean logistics value chain based on requirement driven in the business level, and take to measurement, analysis and improvement

in the management level, and form the agile supply chain, customer and market centric strategy, and gradually improve the efficiency of logistics management, improve customer service level, to achieve excellent performance goal.

In this paper, the research provides a framework for the effective implementation of logistics management in Port Enterprises. Compared with the previous research results, it pays more attention to the synergy and excellence of the implementation, which provides a new perspective for the study of port enterprise logistics management. Because the excellent performance management model is still in the initial research in port logistics management, this paper just makes a framework for discussion. Future research can be further studied by data empirical research.

ACKNOWLEDGEMENTS

This work is financially supported by science and technology innovation talent support program of Henan province higher education (HUMANITIES AND SOCIAL SCIENCES), 2017-cxrc-04; Ministry of education humanities and Social Science Fund(15YJC630006); Henan social science program of Henan Province in 2016(2016BJJ017); Key research projects of Humanities and social sciences of Henan Provincial Department of education in 2016(2016-zd-046); 2014 Henan provincial government decision-making research tender topic(2014154); Key research projects of Humanities and social sciences of Henan Provincial Department of education in 2014(2014-zd-011); General research project of Humanities and social sciences of Henan Provincial Department of education in 2016(2016-gh-122); General research project of Humanities and social sciences of Henan

Provincial Department of education in 2017(2017-ZZJH-163); Henan Institute of Science and Technology major research projects(2015); The major project of National Social Science Fund (12&ZD206). Thanks for the help.

REFERENCE

1. R. Cimpeanu, M. T. Devine, & C. O'Brien, 2017. A simulation model for the management and expansion of extended port terminal operations. *Transportation Research Part E: Logistics and Transportation Review*, 98, 105-131.
2. D. S. H. Moon, J. K. Woo, 2014. The impact of port operations on efficient ship operation from both economic and environmental perspectives. *Maritime Policy & Management*, 41(5), 444-461.
3. H. Davarzani, B. Fahimnia, M. Bell, & J. Sarkis, 2016. Greening ports and maritime logistics: A review. *Transportation Research Part D: Transport and Environment*, 48, 473-487.
4. N. Akbari, C. A. Irawan, D. F. Jones, & D. Menachof, 2017. A multi-criteria port suitability assessment for developments in the offshore wind industry. *Renewable Energy*, 102, 118-133.
5. S. H. Min, H. D. Choi, E. Y. Yun, D. W. Kang, & Y. S. Kim, 2015. A Study on the Operation of Ship Supply Common Logistics in Utilizing the Busan Port International Ship Supply Center. *Journal of Navigation and Port Research*, 39(6), 553-559.
6. G. B. B. Vieira, F. J. Kliemann Neto, & F. G. Amaral, 2014. Governance, governance models and port performance: A systematic review. *Transport Reviews*, 34(5), 645-662.
7. J. J. Liu, Z. Wang, D. Q. Yao, & X. Yue, 2016. Transaction cost analysis of supply chain logistics services: firm-based versus port-focal. *Journal of the Operational Research Society*, 67(2), 176-186.
8. W. U. Jianni, 2013. Research on Index System of Port Logistics Industry Cluster Competitiveness Based on Entropy Weight Method. *Science and Technology Management Research*, 6, 45-49.
9. T. Li, , L. Liang, 2016. Study on the Coupling Relationship between the Modern Port Logistics and Port-Vicinity Industry Agglomeration A Case Study of Dalian Port. *International Journal of u-and e-Service, Science and Technology*, 9(10), 131-142.
10. J. Havenga, Z. Simpson, L. Goedhals-Gerber, 2017. International trade logistics costs in South Africa: Informing the port reform agenda. *Research in Transportation Business & Management*, 22, 263-275.
11. F. Caselli, M. Reyes, M. Beale, Y. Akakura, & K. Ono, 2016. Methodology and procedure of business impact analysis for improving port logistics business continuity management. *IDRiM Journal*, 6(1), 1-29.
12. L. M. Ascencio, R. G. González-Ramírez, L. A. Bearzotti, N. R. Smith, & J. F. Camacho-Vallejo, 2014. A collaborative supply chain management system for a maritime port logistics chain. *Journal of applied research and technology*, 12(3), 444-458.
13. J. Wang, B. Zhu, Y. Wang, & L. Huang, 2016. Mining organizational behaviors in collaborative logistics chain: An empirical study in a port. In *Logistics, Informatics and Service Sciences (LISS), 2016 International Conference on* . IEEE, 1-5
14. R. Robinson, 2002. Ports as elements in value-driven chain systems: The new paradigm. *Maritime Policy and Management*, 29(3): 241-255.
15. V. Carbone, M. De Martino, 2003. The changing role of ports in supply chain management: an empirical analysis. *Maritime Policy and Management*, 30(4): 305-320.
16. P. M. Panayides, D.W. Song, 2008. Evaluating the integration of seaport container terminals in supply chains, *International Journal of Physical Distribution & Logistics Management*, 38(7): 562-584.
17. J.P. Rodrigue, T. Notteboom, 2009. The terminalization of supply chains: reassessing the role of terminals in port/hinterland logistical relationships. *Maritime Policy & Management*, 36(2): 165-183.
18. H. Chen, Y. Chen, 2016. The Performance Appraisal of Port Logistics Informationization. In *International Conference on Internet and Distributed Computing Systems*. Springer International Publishing., 9,413-420
19. M. Doods, F. Parola, 2016. Port Management Studies. *The Asian Journal of Shipping and Logistics*, 32(1), 001-002.
20. C. Expósito-Izquiero, E. Lalla-Ruiz, T. Lamata, B. Melián-Batista, & J. M. Moreno-Vega, 2016. Fuzzy optimization models for seaside port logistics: berthing and quay crane scheduling. In *Computational Intelligence*. Springer International Publishing, 323-343.
21. R. A. Sutrisnowati, H. Bae, M. Song, 2015. Bayesian network construction from event log for lateness analysis in port logistics. *Computers & Industrial Engineering*, 89, 53-66.

CONTACT WITH THE AUTHOR

Yonghui Cao

China Institute for Reform and Development
Haikou 570311
CHINA