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## **Master Thesis**

**Title: «The Impact of New Technologies in the Supply Chain of  
the Armed Forces»**

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*“Στην Κατερίνα, τον Ανδρέα, τον Θωμά και την  
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## **ABSTRACT**

The Armed Forces around the world, despite the differences in their organization and mission, share some common points. The structure of the administration, the way of shaping the bodies that make up them, and the discipline are the attributes of every professional army on the planet.

In the context of these characteristics, there is another common feature, the supply chain is the transport, distribution and storage of the materials necessary for the operation of the armed forces.

The supply chain also exists in the private sector as it is an integral part of business management, and in many cases, it is a separate economic activity. The private sector has the characteristic that it is moving at the pace of technology, that is, new technologies and practices are directly adopted so that the business remains one step ahead of the competition.

The armed forces, however, do not have the mechanisms that are necessary for the implementation and adoption of new practices. In many cases the obstacles are the lack of personnel, materials, funds or circumstances, while in other obstacles come from the strict administration model and the lack of criticism within the troop.

It is difficult to impose discipline and freedom of thought at the same time, with the result that the changes are slow and that the armed forces are left behind in relation to the private sector, which exploits the rapid technological developments.

The purpose of the thesis is to investigate the reasons for this phenomenon, as well as to identify technologies that can revolutionize the supply chain within the armed forces. At the same time, reference will be made to good practices, and the views of different states, which have a different approach to this issue, will also be identified.

### **Keywords:**

Supply, Transportation, Armed Forces, Supply Chain, Innovation

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(Defense Supply Chain Management, DSCM).

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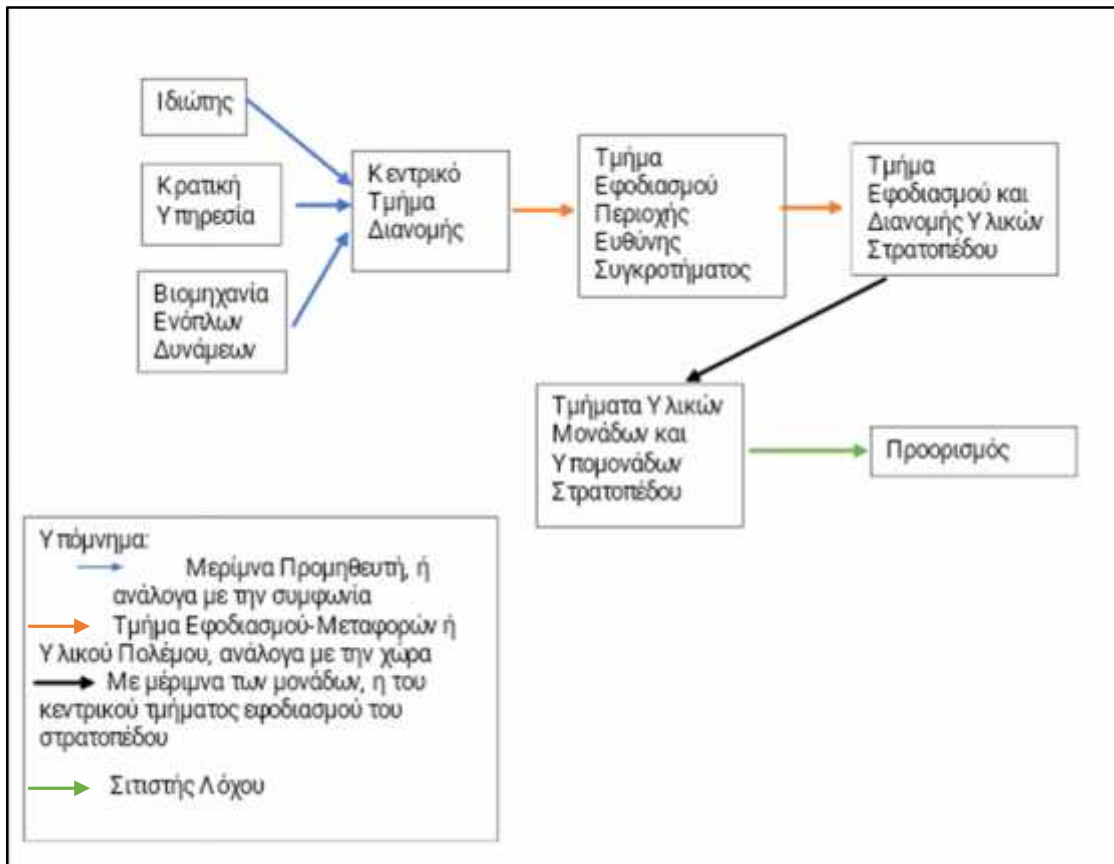




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## 2.2. Mintzberg

Henry Mintzberg,

(compartmentalization) (Bourret, 2009).

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• (DLA Aviation), « »

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(DLA, 2019).

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- (DLA Disposition Services),  
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(DLA, 2019):

- (Neutralization),  
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- (Demilitarization), μ  
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 μ μ (Rosen & Jackson, 2017).

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2. Logistic Trend Radar, DHL 2018-2019, (Post & Parcel, 2018)

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1. Logistic Trade Radar



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4. μ Drone μ μ μ (News Desk, 2018).

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5. MULE, Multifunction Utility/Logistics and Equipment, (defence-update.com, 2007).

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1. Bao-Ping, L., Kan, Z., and Dong, H. (2017) Constructing Strategy of Stable Reverse Military Logistics System Based on Non-Cooperative Game. *2017 International Conference on Management Science and Engineering (ICMSE)* (33-38). IEEE.
2. Beeres, R., Bakx, G., de Waard, E., and Rietjens, S. (2016) *NL ARMS Netherlands Annual Review of Military Studies 2016*. TMC Asser Press.
3. Bellou, V., and Gkousgkounis, G. (2015) Spouse-and service-related antecedents of Officers' commitment: the case of the Greek Army. *Armed Forces & Society*, 41(3), 440-459.
4. Bourret, C. (2009) The implementation of Information Systems as major stake in the development of innovative organizations of interface to improve the French Healthcare System. *Proceedings (Full Papers) IADIS (International Association for Development of Information Society) Annual Conference e-Society*, (307-315).
5. Boyne, G. A. (2002) Public and private management: what's the difference?. *Journal of management studies*, 39(1), 97-122.
6. Buzady, Z., and Marer, P. (2016) *The theory of 'flow' and its relevance for organizations*. Budapest: CEU Business School.
7. Chalmers, M., Davies, N. V., Hartley, K., and Wilkison, C. (2002) The economic costs and benefits of UK defence exports. *Fiscal Studies*, 23(3), 343-367.
8. Crewson, P. E. (1995) A comparative analysis of public and private sector entrant quality. *American Journal of Political Science*, 628-639.
9. Daly, E., Evans, N., and Holmes-Brown, S. (2019) The Effects of Current Cold Chain Management Equipment in Controlling the Temperature of Thermolabile

Medications and Temperature Sensitive Diagnostics, Dressings and Fluids in A Routine Australian Defence Force Operating/Exercise Environment. *Journal of Military and Veterans Health*, 27(1), 23-41.

10. Defence-update.com. (2007, October 27). *Defence Update*. MULE – Multifunction Utility/Logistics and Equipment: [https://defence-update.com/20071027\\_mule-load-carrier.html](https://defence-update.com/20071027_mule-load-carrier.html)
11. DLA. (2019). *www.dla.mil*. <https://www.dla.mil/>
12. EDA. (2019). *eda.europa.eu*. <https://www.eda.europa.eu/webzine/issue14/cover-story/disruptive-defence-innovations-ahead>
13. Ellram, L. M. (1995) *Purchasing for bottom line impact: improving the organization through strategic procurement* (Vol. 4). Irwin Professional Pub.
14. Forsavet Intelligence Service. (2014). *Intelligence Risk Assessment 2016: An up-to-date assessment of conditions abroad that is important for Denmark's security*. Denmark: The Defense Intelligence Service.
15. Gattorna, J. (2016) *Dynamic supply chain alignment: a new business model for peak performance in enterprise supply chains across all geographies*. CRC Press.
16. Gonzalez-Feliu, J., and Parent, A. (2016) Clio-combinatorics: A novel framework to analyze military logistics choices using operations research techniques. . *Handbook of Research on Military, Aeronautical, and Maritime Logistics and Operations* ( . 79-101). IGI Global.
17. Haddad, G. M. (1977) The present state of Middle East Studies. *The Journal of Military History*, 41(2), 83.
18. Hartley, K. (2006) Defence industrial policy in a military alliance. *Journal of Peace Research*, 43(4), 473-489.



19. Hiremath, R. N., Yadav, A. K., Ghodke, S., and Yadav, J. (2018) Contraceptive use and its determinants amongst armed forces personnel. *Medical Journal Armed Forces India*, 74(2), 103-107.
20. Hou, H., Chaudhry, S., Chen, Y., and Hu, M. (2017) Physical distribution, logistics, supply chain management, and the material flow theory: a historical perspective. *Information Technology and Management*, 18(2), 107-117.
21. Hugos, M. H. (2018) *Essentials of supply chain management*. New York, USA: John Wiley & Sons.
22. Jacobsen, T. (2004) Individual and group modelling of aesthetic judgment strategies. *British Journal of Psychology*, 95(1), 41-56.
23. Jones, E. C., and Chung, C. A. (2016) RFID and Auto-ID, In *Planning and Logistics: A Practical Guide for Military UID Applications*. CRC Press.
24. Krahnemann, E. (2016) NATO contracting in Afghanistan: the problem of principal-agent networks. *International Affairs*, 92(6), 1401-1426.
25. Lee, H., and Kim, J. (2018) A Predictive Model for Forecasting Spare Parts Demand in Military Logistics. *2018 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)* (1106-1110). IEEE.
26. Liddell, S. K. (1993) Holds and positions: Comparing two models of segmentation in ASL. In *Current issues in ASL phonology* (189-211). Academic Press.
27. Listou, T. (2015) *Supply Chain Designs for Preparedness*.
28. Lummus, R. R., Krumwiede, D. W., and Vokurka, R. J. (2001) The relationship of logistics to supply chain management: developing a common industry definition. *Industrial management & data systems*, 101(8), 426-432.
29. Luo, K., Li, S., Ren Deng, W. Z., and Cai, H. (2016) Multivariate statistical kernel PCA for nonlinear process fault diagnosis in military barracks. *International Journal of Hybrid Information Technology*, 9(1), 195-206.

30. Mangan, J., Lalwani, C., and Lalwani, C. L. (2016) *Global logistics and supply chain management*. John Wiley & Sons.
31. Mentzer, J. T., DeWitt, W., Keebler, J. S., Min, S., Nix, N. W., Smith, C. D., and Zacharia, Z. G. (2001) Defining supply chain management. *Journal of Business logistics*, 22(2), 1-25.
32. Mintzberg, H. (2015) Henry MINTZBERG, The Nature of Managerial Work (1973) & Simply Managing: What Manager Do-And Can Do Better (2013). *Management*, 18(2), 186-188.
33. Monk, E., and Wagner, B. (2013) *Concepts in Enterprise Resource Planning*. Course Technology/Cengage Learning cop.
34. Moore, A. (2017) US military logistics outsourcing and the everywhere of war. *Territory, Politics, Governance*, 5(1), 5-27.
35. Moore, T. A., McConnell, B. M., and Wilson, J. R. (2018) Simulation-based evaluation on integrating additive manufacturing capability in a deployed military environment. . *Proceedings of the 2018 Winter Simulation Conference (3721-3729)*. IEEE Press.
36. News Desk. (2018, May 29) *Geospatial World*. Drone Logistics and Transportation market worth 29.06 billion USD by 2027: <https://www.geospatialworld.net/news/drone-logistics-and-transportation-market-worth-29-06-billion-usd-by-2027/>
37. Papadopoulos, T., Gunasekaran, A., Dubey, R., Altay, N., Childe, S. J., and Fosso-Wamba, S. (2017) The role of Big Data in explaining disaster resilience in supply chains for sustainability. *Journal of Cleaner Production*, 142, 1108-1118.
38. Patterson, K. A., Grimm, C. M., and Corsi, T. M. (2003) Adopting new technologies for supply chain management. *Transportation Research Part E: Logistics and Transportation Review*, 39(2), 95-121.

39. Phogat, S. (2013) The trouble with JIT in military operations-A review. *International Journal of Latest Research in Science and Technology*, 2(6), 116-118.
40. Piggee, A. F. (2002) *Transformation-revolution in military logistics*. ARMY WAR COLL CARLISLE BARRACKS PA.
41. Post & Parcel. (2018, June 26). *postandparcel.info*.  
<https://postandparcel.info/97042/news/infrastructure/trends-on-the-radar/>
42. Reimer, D. J. (1997) *Dominant Maneuver and Precision Engagement*. WASHINGTON DC.: ARMY CHIEF OF STAFF .
43. Ren, X., Li, Y., Wu, T. Y., Xin, S. L., and Ma, L. (2017) Application of Internet of Things and Cloud Computing in the Logistics Equipment Support System. In 2017 2nd International Conference on Automation. *2017 2nd International Conference on Automation, Mechanical Control and Computational Engineering (AMCCE 2017)*. Atlantis Press.
44. Rogers, E. M. (1983) *Diffusion of innovations*. New York: Free Press.
45. Rosen, L. N., Knudson, K. H., and Fancher, P. (2003) Cohesion and the culture of hypermasculinity in US Army units. *Armed Forces & Society*, 29(3), 325-351.
46. Rosen, M., and Jackson, D. (2017) *The US India Defense Relationship: Putting the Foundational Agreements in Perspective (No. DRM-2016-U-031926-Final2)*. Arlington United States.: Center for Naval Analyses.
47. Sahay, B. S., Menon, N. V., and Gupta, S. (2016) Humanitarian logistics and disaster management: the role of different stakeholders. *Managing humanitarian logistics* (3-21). New Delhi: Springer.
48. Seck, H. (2019) *military.com*. Marines Get Resupply from Unmanned Helo During Exercise:  
<https://www.military.com/kitup/2018/06/06/marines-get-resupply-unmanned-helo-during-exercise.html>

49. Sheffi, Y. (2001) Supply chain management under the threat of international terrorism. *The International Journal of logistics management*, 12(2), 1-11.

50. Skelcher, C., and Smith, S. R. (2015) Theorizing hybridity: Institutional logics, complex organizations, and actor identities: The case of nonprofits. *Public administration*, 93(2), . 433-448.

51. Smith, A. M. (2017) Logistics in the falklands war. *Journal of Military and Veterans Health*, 25(1), 41.

52. Tatham, P., and Christopher, M. (2018) *Humanitarian logistics: Meeting the challenge of preparing for and responding to disasters*. Kogan Page Publishers.

53. Tatham, P., and Rietjens, S. (2016) Integrated disaster relief logistics: a stepping stone towards viable civil–military networks? *Disasters*, 40(1), 7-25.

54. Valax, L., Grant, D. B., and Stock, J. R. (2019) Improvements in pre-revolution French military logistics: lessons for modern day supply chains. *Supply Chain Forum: An International Journal*, 20, 3-14. Taylor & Francis.

55. Zhou, C. F., and Liu, Y. (2016) Research on Operation Mechanism of Civil-military Integration Equipment Support Supply Chain. *MATEC Web of Conferences*, 44, 02028. EDP Sciences.