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Postponement and Speculation in Noncommercial Supply Chains

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The principles of postponement and speculation (P/S) are well-known elements of logistics strategies. When entering new markets a firm must decide how to enter, for example, by investing in entities within the new market or relying on nonequity entry modes. Entry mode decisions significantly influence the P/S strategy. Different nations and organisations contribute to UN peacekeeping operations (PKOs). The decision to contribute military forces depends on political, not economic, considerations. Military units in PKOs do not choose geographical areas to enter based on psychic closeness. Further, they have both politically induced and time-induced restrictions on their choice of entry mode. Whereas commercial firms can base their internationalisation strategies on various factors, military units in PKOs are restricted to exporting items/supplies from home, cooperating with other actors within the mission, or utilising local markets and contractors. The Nordic Battle Group was on standby in high-readiness status during the first half of 2008. This was a temporary military unit not designated for a given crisis or area. The activation of such battlegroups normally depends on a UN Security Council resolution. Supplying food for the Nordic Battlegroup highlights the restricted choices of entry modes available within military logistics chains. Both humanitarian and military supply chains are noncommercial, operating in "markets" with high levels of uncertainty. When extending supply chains into such areas, the P/S strategies depend on how the organisation chooses to enter. Supply chains in complex crises might be described as logistics and manufacturing speculation by necessity. In future work the structure of the noncommercial supply chains will be addressed, for example, by how suppliers are included in P/S strategies, what role suppliers play when deciding on entry mode, how suppliers are perceived to contribute to effective supply chains in preparedness organisations, and so on. It is particularly interesting to study the supplier's role-being governmental bodies-in military supply chains from a public private partnership (PPP) perspective.

Noncommercial logistics in complex and dynamic operations

Extending supply chains to new geographical areas has implications both for the division of tasks and activities and for the design and effectiveness of the supply chain. Variables such as types of goods to distribute, quantities to handle, actors to

include in the chain, and end-users to serve will be altered. Hence both managed and monitored process links as well as not-managed and nonmember process links (as described by Lambert, Cooper, & Pagh 1998) will be affected by the decision to enter new markets or geographical areas. The principles of postponement and speculation (P/S) are well known elements in logistics strategies. These



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principles should be explored when designing an optimal supply chain. A basic presumption in most SCM literature (see e.g. Lambert & Burduroglu 2000) is that commercial supply chains exist to make above-normal economic returns to shareholders (Porter, 1980) and are designed to reach rather well-defined customer markets characterised with more or less predictable demand because the products are known and so are the supply sources. Peacekeeping operations (PKOs) can be seen as temporary logistics systems expanding into new geographical areas. PKOs do not exist first and foremost because of profit opportunities of individual firms; the logic behind entering a geographical area or “market” is to contribute to achieving some politically set goals. The supply chains of the participating organisations need to be extended into new and unfamiliar geographical and cultural areas.

As described by Kovács and Spens (2007) three phases of humanitarian operations can be distinguished: preparedness, response, and reconstruction. This paper illuminates the P/S dimension exemplified by the logistics planning of the Nordic Battlegroup, a multinational temporary military constellation, and some of its preparations to participate in UN PKOs. By using the supply chain of a military force preparing for peacekeeping operations as illustration, the aim is to explore whether logistics models and concepts developed to describe logistics strategies for commercial supply chains can be used also to describe noncommercial supply chains.

This work is part of the explorative phase of the Humlog-NET project. (Humanitarian Logistics Networks-Humlog-NET is a research project funded by the Norwegian Research Council focusing on logistics challenges related to the coordination and strategy development of humanitarian logistics actors. For more information please see www.humloggroup.org.) In the

Humlog-NET project, three conceptual dimensions are explored: the logistics implications of operating both centralised and decentralised units, issues concerning the relationships between temporary and permanent organisational structures, and the operation of vertical and horizontal logistics within such systems (Jahre, Jensen, & Listou, forthcoming).

The issue of planning logistics for both centralised and decentralised units can be analysed from many different theoretical angles. The theoretical basis applied in the Humlog-NET project is found within the concepts of P/S.

A major logistics challenge: to respond to a given crisis with the need to be cost efficient.

The discussion put forth in this paper elaborates on the theoretical dimensions of the Humlog-NET project. Understanding how logistics is planned for military participation in peacekeeping operations might give valuable insight into logistics planning for other actors involved in complex multidimensional operations, such as the humanitarian organisations. The military unit in focus was on standby status the first half of 2008. During this period the unit did not deploy or otherwise engage in operations as a whole. Hence only data for the preparedness phase of an operation are available. Information about the logistics planning was collected partly during this standby period and partly afterward. Data were collected through systematic interviews with key informants at the Norwegian Joint Operations Headquarters as well as via interviews with informants involved in the planning of the force within the permanent military structures. Documents and archival

material provided valuable information about the mandate, composition, training, and supply arrangements for the constellation.

The structure of this paper is as follows: first a description of peacekeeping operations is given, including a taxonomy of crises. Next, presentations of the concepts of entry modes and P/S are made, before the Nordic Battlegroup is presented. Finally, a synthesis of entry modes and P/S strategies for military units is provided followed by some suggestions for further research.

Peacekeeping operations

UN peacekeeping operations consist of elements and units from different nations and organisations, each with their own procedures, equipment, and standards related to supply and logistics. The decision to contribute with military forces to such operations is made at political levels, and the extent to which the individual forces should cooperate with other actors within the mission or the area of operations to a large degree also depends on political, not solely economic, considerations.

Coordinating the humanitarian agencies within the UN and between the UN and external organisations such as the EU, AU, NATO, and NGOs is itself a huge challenge. For example, the European Commission Humanitarian Aid (ECHO) at a seminar on integrated and multidimensional peace operations asserted that humanitarian operations should not be part of integrated operations^[1,2]. But still

1. The UN has established and is implementing their concept of integrated missions, linking long-term development and short-term peacekeeping efforts into their peace-building strategy.

2. These views were voiced at a seminar on integrated and multidimensional peace operations in Brussels (05 October 2007), organized by the Department for Security Policy of the Norwegian Ministry of Defence (MoD) and the Norwegian Ministry of Foreign Affairs (MFA). The minutes of the seminar can be accessed at <http://www.regjeringen.no/nb/dep/fd/aktuelt/nyheter/2007/Multidimensional-and-Integrated-Peace-Op-2.html?id=491112>.

humanitarian operations take place in the same area of operations as integrated missions, and thus also compete for the same logistics resources such as infrastructure and local suppliers of goods and services.

Often PKOs take place in geographical areas with limited infrastructure, logistics resources, local supply opportunities, and unstable political systems. The operations are coordinated through the UN system, but also through bi- and multi-lateral agreements between nations and organisations. Although peacekeeping is a long-term activity, military units participating might have relatively short time horizons for their mandates. And further, their stay in a given country is contingent on political processes within this country.

Logistics play an important role in relief operations. According to Trunick (2005) about 80% of the effort in relief operations is logistics, indicating that managing the supply chains is paramount for both effectiveness and efficiency in these operations. Van Wassenhove (2006) categorised humanitarian disasters depending on their speed of impact (sudden-onset versus slow-onset) and their causes (natural versus man-made). He further claimed that man-made disasters should not encompass wars, "which are in a category of

their own since most humanitarian organisations do not get involved while the fighting continues" (van Wassenhove 2006 p. 476). It is unclear though how war should be defined. In UN terms response to conflicts encompass preventive diplomacy, peacemaking, and peacekeeping as well as peace enforcement (UNDPKO, 1995). Military forces are present in both peacekeeping and peace enforcement, as are the humanitarian organisations under the UN umbrella and NGOs, such as the ICRC. Hence various degrees of war or armed conflicts other than war will clearly have humanitarian aspects and also include humanitarian organisations. In this research, therefore, we follow the taxonomy of crises as depicted in Table 1. Peacekeeping operations would usually be found in slow-onset political/armed crises.

Extending supply chains into new geographical areas

Defence politics in most European countries have in recent years changed from predominantly homeland defence to overseas operations, either as a response to external aggression or as part of international peacekeeping operations primarily mandated by the UN (but potentially organised by other bodies such as the EU, NATO, and AU). Military units in PKOs enter new "markets" based

on political decisions, whereas for commercial firms, as pointed out by Hertz and Hultman (2008), "lack of domestic opportunities and cost compression opportunities seem to stand out as the principal motives for firms expanding abroad" (p. 268). Further, a principal motivation for extending [commercial] supply chains into new areas is to reach new markets and customers or to exploit supply alternatives.

Also when it comes to entry modes, that is, how to approach new geographical areas, differences between commercial and noncommercial supply chains can be identified. The term entry mode encompasses more than pure logistics. In this work the use of the term is limited to describe the organisation of logistics resources and activities, to serve customers within a new geographical area, to exploit resources from this area in a multinational commercial strategy, or to support units and personnel within the area (for a more comprehensive discussion about how firms choose entry modes, see Zhao & Decker, 2004). According to Lambert, Stock & Ellram (1998) companies involved in the international marketplace can choose to cover that market by exporting, licensing, joint ventures, ownership, importing, or countertrade. Principally, entry modes thus range from wholly

Table 1
Taxonomy of crises

	Natural crises examples	Man-made technical crises examples	Political/armed crises examples
Sudden onset	Earthquakes (Pakistan 2005), cyclones (Burma 2008)	Nuclear power plant accidents (Chernobyl 1985), man-made forest fires (Greece 2007)	Coup d'etat or riots after elections (Kenya 2008)
Slow onset	Water stress due to climate variations (e.g., sub-Sahara)	Long-term industrial pollution (groundwater for 75 million people in Bangladesh contaminated with arsenic)	Regular war or civil war, ethnic cleansing/persecution of specific segments of a population (the Balkans in the 1990)

Modified from van Wassenhove (2006)

owned subsidiaries to contractual and cooperative modes (Contractor, 1990), giving a spectrum from Greenfield investments, acquisition of existing local entities, forming alliances or joint-ventures with local actors, importing items from other markets, to buying resources in a local market.

Eramilli (1991) investigated how service firms' international experiences influence their choice of entry mode. He stated that control is an important variable and that the need for control stems from the perceived uncertainty a firm experiences when doing business abroad. This uncertainty is rooted in the firm's body of knowledge about how to do business abroad and how familiar it is with the culture in a given foreign market ("psychic distance"). He concluded that inexperienced firms may first want to enter culturally familiar markets to gain general knowledge about international business while minimising country

uncertainty. As the firm gains experiences with international affairs it may gradually move to more distant markets, both geographically and culturally. Anderson and Gatignon (1986) claimed that the choice of entry mode is a trade-off between the need for control and the costs of resource commitments. Preserving flexibility should be a major consideration of most firms in making this trade-off. In their model, choice of entry mode depends on the level of transaction-specific assets, external uncertainty, internal uncertainty, and free-riding potential, for example, for local suppliers (opportunism). Also, according to Hill, Hwang, and Kim (1990) entry mode decisions should be based on strategic variables (extent of national differences, extent of scale economies, global concentration), environmental variables (country risk, location familiarity, demand conditions, volatility of competition), and transaction variables (value of firm-specific

know-how, tacit nature of know-how). When relating these theoretical contributions to the PKO setting, it seems clear that military elements in PKOs do not choose geographical areas to enter based on psychic closeness. Based on this one should also expect to find some differences between commercial and military actors when choosing the entry mode, as indicated in Table 2.

The strategic variables encompass the UN Security Council call for troops, which determines what kind of military units to deploy into an area. The mandate for these units will outline how long they will be available for the UN operation. Political and military agreements between nations might regulate tasks and responsibilities of cooperating nations, for example, by appointing logistics lead nations on given classes of supply, influencing the need for the individual nation to put up its own supply chains. The environmental variables could encompass to what

Table 2
Factors affecting choice of entry mode

	Commercial supply chains	Military PKO supply chains
Strategic variables	<ul style="list-style-type: none"> National differences (consumer tastes and preferences, competitive conditions, operating conditions, political, legal, social structures) Scale of economies 	<ul style="list-style-type: none"> Call for troops based on UN Security Council resolutions Time horizon for mission and the individual contributions. Political and military agreements with other participating nations (bi- or multi-lateral)
Environmental variables	<ul style="list-style-type: none"> Country risk Location familiarity Demand conditions Competitive conditions 	<ul style="list-style-type: none"> Availability of local suppliers and infrastructure UN supply arrangements Technical agreements with other actors Availability of transport capacity from homeland Competition for logistics resources Interference with local economies
Transaction variables	<ul style="list-style-type: none"> Value of firm-specific know-how Tacit nature of know-how 	<ul style="list-style-type: none"> Risks of compromising operability Safety of personnel

Modified from Hill, Hwang, and Kim (1990)

Table 3
Alternative entry mode

Type of organisation	Type of entry mode	
	High-control entry modes	Low-control entry modes
Commercial	Acquisitions and Greenfield investments	Alliances, joint-ventures, import, buy local
Military in PKOs	Not applicable	Nonequity modes only: Supply from home, arrangements with UN and other forces in the mission. Contractors/buy local

extent local sourcing actually is an alternative, to what extent the UN or other nations can provide supplies, whether sufficient transport capacity (both infrastructure and appropriate transportation means) exists to distribute goods from home, and how entering the area might influence the local market for logistics and supplies.

Finally, *transaction variables* that need to be taken into account encompass how different entry strategies influence the operability of the deployed units (e.g., access to and quality of spare parts and maintenance capacity) and also the safety and well-being of the personnel (e.g., differences in the perception of food safety, hygiene, and medical standards).

As described by Eramilli (1991) and Hill, Hwang, and Kim (1990) one can distinguish between two types of uncertainty: internal uncertainty (knowing how to do business abroad) and external uncertainty (perceived risks involved in doing business in a specific country). For military units participating in UN PKOs there is also a third important uncertainty factor: the political uncertainty related to processes both within the nations sending troops, within the country in which the mission is supposed to take place, and within the UN-processes that might significantly alter the mandate and composition of the force and thus also the design of the supply chains.

Whereas commercial actors have a wide range of entry modes to choose from, military units in PKOs have both politically induced and time-induced restrictions on their

choices. The environment is political in the sense that participating in, or preparing for, an operation is a political decision. The design of the supply chain is often influenced by politically imposed cooperation between nations. Additionally, the duration of the stay is subject to political processes. Although each mission potentially can run for several years (the UNMIK in Kosovo has lasted for more than nine years, the UNIFIL in Lebanon was established in 1978, and there have been several UN missions in Haiti since 1993), each contingent has a considerably shorter time horizon. Further, the military forces of most countries are not allowed to invest in business entities abroad. Consequently, supply arrangements involving ownership in local businesses are not accessible entry modes. This significantly restricts the number of entry modes available for military units, both in long-term and short-term engagements, as indicated in Table 3.

Logistics P/S strategies

Peacekeeping operations take place in environments with destabilized infrastructure and limited knowledge about the situation at hand (Balcik & Beamon, 2008; Long & Wood, 1995; Tomasini & van Wassenhove, 2004). A major logistics challenge is thus to counterbalance the ability to respond to a given crisis with the need to be cost efficient when reacting to a crisis. Some level of preparedness, such as logistics capacity building before and between crises, is an important element of efficient logistics in peacekeeping operations. As a response to the call for more efficient integrated missions, the issue of

centralized versus decentralized elements of the supply chain should be viewed as part of this preparedness strategy. Within logistics and distribution literature these terms can be linked to the principles of P/S of the physical tasks within the supply chain. As proposed by Alderson in his seminal article in 1954, the objective of postponement is to delay value-adding activities in the supply chain. The aim is to ensure flexibility as a response to risk and demand uncertainties. However, as Bucklin (1965) pointed out, postponement needs to be contrasted with the effects of speculation, that is, adding value in advance of demand, be it by assembling products or shipping products to decentralized locations based on forecasts.

P/S strategies must take into account both manufacturing and logistics activities. *Manufacturing postponement* means that the form and identity of the product is held at a disaggregated level for as long as possible. According to Garcia-Dastugue and Lambert (2007), manufacturing postponement involves changing the sequence of activities, leading to rethinking products, processes, and/or supply network structures through standardization, modular design, and process restructuring (Lee & Tang, 1997). Within logistics, Zinn and Bowersox (1988) identified four manufacturing postponement strategies: labelling, packaging, assembly, and manufacturing. *Logistics postponement* means that forward movement of the product through the supply chain is delayed in time. Logistics postponement does not require changing the sequence of activities but could lead to multiple

decoupling points (García-Dastugue & Lambert, 2007). By combining postponement and speculation strategies both within manufacturing and logistics Pagh and Cooper (1998) defined four main types of P/S strategies to be pursued.

In a *full speculation strategy*, manufacturing tasks are performed prior to the product being differentiated by location and inventories are kept close to anticipated demand. Within a PKO setting this could be exemplified by a deploying unit bringing along supplies for a significant part of the expected stay. When pursuing a *manufacturing postponement strategy*, products are kept at disaggregated levels at decentralized inventory points. Manufacturing activities such as labelling, packaging, and final assembly are not performed until demand is known. For example, aid material would not be labelled before it is decided which organization should distribute the goods or to which part of the population the product will be distributed. This strategy is viable when it is vital to have inventories close to end users and when there is no need for specialized manufacturing capabilities. *The logistics postponement strategy* is associated with direct distribution of fully finalized products from suppliers or centralized inventory to end-users. Manufacturing is based on speculation (push-strategy), whereas logistics is end-user initiated (pull-strategy). When considering the pursuit of this strategy in peacekeeping operations one should also take into account that infrastructure such as rail, roads, and airports might be damaged, and that transport capacity into an area often is restricted. Finally, a *full postponement strategy* means that both manufacturing and logistics are made to order. This results in low manufacturing inventory costs and reduced inventories in the distribution system. Economies of scale will probably exist only in the anticipated stages of the manufacturing process, and logistics economies of scale will most likely be reduced.

Example: The Nordic Battlegroup

As part of the EU security initiative, two military battlegroups (BGs) are on standby duty at all times. The standby period lasts for six months. The Nordic Battle Group (NBG) consisted of military resources from Norway, Sweden, Finland, Ireland, and Estonia, and was put on a standby of high-readiness status during the first half of 2008. This was a temporary unit not designated to a given crisis or area. The activation of the BGs would normally depend on a UN Security Council resolution. The NBG was not activated during this standby period. The BGs can be deployed anywhere within 6000 km from Brussels. Hence their logistics must be able to support a wide array of operations in all kinds of climate. Further, the ability to deploy at short notice means that the logistics structures must be established beforehand and be operational during training, deployment, and operations.

Within the NBG both national and multinational supply arrangements were planned. Each of the participating nations would establish their own logistics unit and national support elements. In addition a joint multinational support group would be established. Standard NATO terminology differentiates supplies into five classes (Class I: food and forage; Class II: clothing, weapons, spare parts, etc.; Class III: fuel; Class IV: fortification materials, additional vehicles; Class V: ammunitions, explosives). Each of these supply classes has its own particularities and logistics challenges. For the sake of simplicity in this example focus is restricted to the planning of Supply Class I: food and forage.

As a framework nation, Sweden was given the main responsibility for supplying food. Within NATO, readiness status normally requires units to have 30 DOS (days of supply) available. In UN operations it might take up to 90 days before the UN supply chains are fully operable. Thus, the NBG was planned to deploy with 30 DOS and have an additional 60 DOS in the pipeline (recalling that the standby period was six months,

this means that 50% of the forecasted demand should be available before demand actually occurred). The food was basically tinned food/field rations.

A biweekly flight from Sweden into the area of operations was planned. Low-quantity supplies could then be consolidated. Larger volumes could be shipped directly from each participating nation. Providing a supply of fresh food, such as bread, was identified as a key challenge. One option would be to establish a bakery within the unit and then either import or buy the necessary ingredients locally. Another alternative would be to encourage a baker from the unit's homeland to invest in a local bakery, and then award a contract to this "imported" baker based on competitive principles. The third alternative was to rely on a local sourcing of bread, either directly from a local baker or from a contractor.

Another important issue was water. Bottled water could be brought in by air and bulk quantities by ship, road, or rail. Alternatively the unit could rely on water purification or it could drill for water. In these cases necessary equipment would be included in the force package. Or water could be purchased locally.

Synthesis: Noncommercial supply chains and logistics preparedness

Commercial actors can choose whether and what market to enter and can choose between a wide array of entry modes. Central in business logistics is the assumption that holding inventory is cost consuming. Inventory carrying cost is a composite of opportunity cost of capital, inventory service costs, storage space costs, and inventory risk costs (Lambert, Stock & Ellram 1998). However, due to public accounting principles, for example, the Norwegian Defence, being a governmental body, does not calculate opportunity cost of capital. Hence the market-based logic behind the P/S principles seems to be more obscure for noncommercial supply chains. Based on information from the Nordic Battlegroup, Table 4 lists

Table 3
Postponement, Speculation and entry mode. Examples from Nordic Battle Group

	Logistics speculation	Logistics postponement
Manufacturing speculation	<p><i>Full speculation strategy</i></p> <p>Tinned food/field rations: manufactured in advance, can be stored for a long period of time.</p> <p>Bring 30 DOS of food along when deploying.</p> <p><i>Entry mode: bring along when deploying (export from home country)</i></p>	<p><i>Logistics postponement strategy</i></p> <p>Tinned food/field rations manufactured in advance. Have 60 DOS in pipeline when deploying. Biweekly flights from Sweden.</p> <p><i>Entry mode: resupply from home base (export from home country)</i></p>
Manufacturing postponement	<p><i>Manufacturing postponement strategy</i></p> <p>Water: deploy with well-drilling equipment and/or water purifying equipment. Produce bulk water and bottled water at site. Fresh food: establish bakery in/near camp</p> <p><i>Entry mode: bring manufacturing equipment along when deploying</i></p>	<p><i>Full postponement strategy</i></p> <p>Fresh food and water: buy in local market</p> <p><i>Entry mode: buy local/use contractors</i></p>

some preliminary observations related to postponement, speculation, and entry modes.

The P/S strategies for commercial supply chains expanding into new geographical markets can be based on both high-control and low-control entry modes. A logistics postponement strategy in a high-control entry mode situation could mean for example that stocks are kept at a central warehouse, owned by the expanding firm within the new market. A logistics postponement strategy in a low-control entry mode situation could mean that stocks are kept at home until demand in the new market is known and then transported into the market.

Military units in general must utilise the nonequity low-control alternatives. Although the example of food supply is rather simplified, it highlights the restricted choices available within military supply chains: the units must bring with them sufficient supplies when deploying; establish supply chains from their home countries; produce goods/services utilising their own

equipment; rely on supply chains of units from other nations in the area of operations; or use contractors or local businesses. Except for fairly standardised and easily available supplies, there will always be a substantial element of speculation in these supply chains. Hence supply chains in complex crises might be described as logistics and manufacturing speculation of necessity.

Conclusion and further work

In this paper the principles of postponement and speculation have been combined with entry mode alternatives to describe available choices when extending noncommercial supply chains into new areas. Whereas the choice of entry mode determines how to get access to distribution and/or production capacities within the new area, the P/S strategy decides how these resources will be exploited.

It has been shown that a military unit preparing for peacekeeping operations follows different logics when entering new markets, and also

has different alternatives regarding how to enter the market compared to commercial actors. Military units have to pursue the low-control alternatives. Whereas commercial firms can choose what markets to enter and when to enter new markets, military standby units need to prepare for a wide range of potential missions.

Slow-onset man-made disasters also activate supply chains of humanitarian organisations. These organisations are diverse in size, structure, and mission. What many of them have in common with the military is that profit opportunities are not the main goal when entering a crisis-affected area.

A difference between military and humanitarian supply chains is that humanitarian supply chains need to handle supplies not only for their own units and personnel but also in conjunction with a local population. Hence volumes will be bigger and needs will be different. Another difference is that humanitarian organisations have the opportunity to specialise in a few kinds of aid

operations or to focus on a few geographical areas, whereas the composition of the military elements in peacekeeping operations vary from operation to operation; each operation is a new temporary structure.

Both humanitarian and military supply chains are non-commercial, operating in "markets" characterised by high levels of uncertainty about where demand will occur, what will be demanded, and how much will need to be supplied. As has been demonstrated in this paper, when extending supply chains into new areas, the P/S strategies depend on how an organisation chooses to enter the area. Whereas military forces have to apply nonequity modes, humanitarian organisations do not have this restriction. For example, the IFRC preposition stocks closer to anticipated demand. Further, humanitarian organisations involved in slow-onset man-made crises can invest in local businesses within the area. How does this influence the design of P/S strategies?

Thus far the concept of noncommercial supply chains has been described at an aggregated level (military supply chains, humanitarian supply chains). The structure or composition of the supply chains has not yet been addressed, for example, how suppliers are included in P/S strategies, what role suppliers play when deciding on entry mode, how suppliers are perceived to contribute to effective supply chains in preparedness organisations, and so on. For military supply chains-being governmental bodies-it is of interest also to study the supplier's role from a public private partnership (PPP) perspective.

More in-depth interviews with personnel involved in the planning of the Nordic Battlegroup will be conducted. Lessons identified and reports on experiences during the planning and stand-by periods of the NBG will be analysed. The aim is to reveal to what extent the principles of postponement and

speculation can be recognised in the planning processes, how the restriction on available entry modes influences the logistics planning, how postponement and speculation are dealt with in a multinational constellation of units (coordinating multiple supply chains), and how suppliers are involved in the chosen P/S strategy.

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