United Nations A/76/595

General Assembly

Distr.: General
13 December 2021

Original: English

Seventy-sixth session
Agenda items 136 and 146

Review of the efficiency of the administrative and financial functioning of the United Nations

Report on the activities of the Office of Internal Oversight Services

Audit of demand and source planning for peace operations

Report of the Office of Internal Oversight Services

Summary

The General Assembly, in its resolution 72/266 B, requested the Secretary-General to entrust the Office of Internal Oversight Services (OIOS) with continuing to monitor United Nations procurement and report thereon biennially. Pursuant to that resolution, OIOS conducted audits of demand and source planning at United Nations Headquarters in New York, the United Nations Multidimensional Integrated Stabilization Mission in the Central African Republic, the United Nations Multidimensional Integrated Stabilization Mission in Mali, the United Nations Interim Security Force for Abyei, the United Nations Disengagement Observer Force, the United Nations Peacekeeping Force in Cyprus and the United Nations Interim Force in Lebanon. The audits assessed the adequacy and effectiveness of activities and information management systems used to develop demand and source plans as part of the supply chain management process.

The demand and source planning function involves anticipating entities' demand for goods and services and planning how they would be sourced, acquired and delivered in a timely manner and at the lowest possible cost. The progress to date in this area has enabled the Department of Operational Support to improve the visibility of field missions' requirements for goods and services. However, to date, missions were unable to develop demand plans that were: (a) realistic enough to serve as a basis for budget proposals; and (b) granular enough to be effectively used for acquisition and delivery planning and for category management, which is a systematic approach to manage a range of similar or related goods and services with a greater understanding of both the needs of clients and the dynamics of supply markets. A high number of year-end purchases and the suboptimal use of internal sourcing options and system contracts showed that demand and sourcing strategies remained ineffective.

21-17078 (E) 140122

In order to address the issues identified in the audits, OIOS made 9 recommendations to the Department of Operational Support and 16 recommendations to the six field missions. All the recommendations were accepted and four of them have been implemented.

I. Background

1. The General Assembly, in its resolution 72/266 B, requested the Secretary-General to entrust the Office of Internal Oversight Services (OIOS) with continuing to monitor United Nations procurement and report thereon biennially. In implementing that resolution, OIOS has developed a plan to audit the Secretariat procurement process and, more broadly, supply chain management. The present report details the results related to United Nations Headquarters,[1] the United Nations Multidimensional Integrated Stabilization Mission in the Central African Republic (MINUSCA),[2] the United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA),[3] the United Nations Interim Security Force for Abyei (UNISFA),[4] the United Nations Disengagement Observer Force (UNDOF),[5] the United Nations Peacekeeping Force in Cyprus (UNFICYP)[6] and the United Nations Interim Force in Lebanon (UNIFIL).[7]

2. The United Nations introduced the supply chain management process in 2015 to develop integrated end-to-end processes for planning and managing all activities related to the sourcing and procurement of goods and services, as well as other logistics activities such as the delivery, storage and disposal of goods. For supply chain management to be effective, it needs to begin with accurate supply chain planning, which consists of demand, source and delivery planning. Demand planning involves peace operations developing plans or forecasts of their requirements for goods and services for the ensuing fiscal year, based on the needs identified to support mandate implementation. Individual mission plans are aggregated into a global demand plan for peace operations by the Global Service Centre in Brindisi after a preliminary review of the accuracy and completeness of data. The proposed modalities for fulfilling the demand requirements are prioritized through source planning, including: (a) internal sources or use of existing reserves; (b) use of system contracts; (c) establishment of local contracts; (d) the establishment of letters of assist with Member States; and (e) memorandums of understanding with and contracts of agencies, funds and programmes. The Global Service Centre performs a clearing-house function to facilitate the redeployment of mission surpluses, United Nations reserves and strategic deployment stock to fulfil the demand.

3. Since 2018/19, field missions have developed annual demand plans using a web-based demand and acquisition planning tool. Demand requirements included in the global demand and source plans are shown in the table below.

[1] Audit of demand and source planning in the United Nations Secretariat (report 2020/059).
[2] Audit of demand and source planning in MINUSCA (report 2021/007).
[3] Audit of demand and source planning in MINUSMA (report 2021/010).
[4] Audit of demand and source planning in UNISFA (report 2021/036).
[5] Audit of supply chain management in UNDOF (report 2021/028).
[6] Audit of supply chain management in UNFICYP (report 2021/024).
[7] Audit of procurement and contracts management activities in UNIFIL (report 2020/061).

Evolution of developing demand requirements using the demand and acquisition planning tool

Fiscal year	*Entities covered*	*Number of items*	*Amount (billions of United States dollars)*
2018/19	13 peacekeeping missions	10 362	2.34
2019/20	13 peacekeeping missions, Global Service Centre and replenishment of strategic deployment stocks	9 066	2.17
2020/21	13 peacekeeping missions, 20 special political missions, Global Service Centre and strategic deployment stocks	15 805	2.50
2021/22[a]	13 peacekeeping missions, 19 special political missions, 11 non-field Secretariat entities, Global Service Centre and strategic deployment stocks	28 000	2.45

[a] Extracted from the article entitled “It all starts with a plan! Global Supply Chain Plans for 2021-22” published on iSeek (14 July 2021) for information purposes only. The plan was not covered by the present audit.

4. The Supply Chain Planning Service in the Logistics Division of the Office of Supply Chain Management in the Department of Operational Support manages the integrated supply chain planning function. The Service provides guidance to field missions and coordinates cross-functional reviews of the aggregated demand and source plans with various stakeholders, including procurement officers and category managers,[8] to verify the underlying data and enhance the quality of demand and source plans. The guidance includes: (a) a supply chain management blueprint; (b) supply chain operational guidance; (c) standard operating procedures for the global supply chain; and (d) various other related instructions and memorandums issued from time to time.

5. Supply chain planning, which entails demand, source and delivery planning through an integrated cross-functional planning process, has so far been rolled out to peacekeeping operations, special political missions, offices away from Headquarters and regional commissions. When fully established and properly implemented, it is expected to result in: (a) a more accurate indication of entities’ demand requirements to be reflected in their proposed budgets; (b) more effective secretariat-wide inventory management, including strategic deployment stocks; (c) a reduction in financial losses due to overstocking and stock obsolescence; (d) the aggregation of requirements to achieve economies of scale; and (e) better streamlined procurement actions.

6. While responsibility for the preparation of accurate demand plans, the implementation of source and delivery planning initiatives and the ownership of risks lie with individual field missions, the Department of Operational Support plays a critical enabling function and second line of defence role by providing guidance, capacity development, risk management and monitoring for the successful implementation of supply chain initiatives so as to achieve the intended benefits. The Business Transformation and Accountability Division in the Department of Management Strategy, Policy and Compliance monitors and strengthens Organization-wide performance and accountability. Therefore, it works with the

[8] A category manager heads a cross-functional team to implement the category management approach, through which a range of similar or related goods and services that an entity acquires are grouped and managed with a greater understanding of both the needs of the clients and the dynamics of the supply markets.

Department of Operational Support to develop key performance indicators to measure and manage supply chain planning performance, among other areas.

II. Audit objective, scope and methodology

7. The objectives of the audits included the assessment of the adequacy and effectiveness of the activities and information management systems used to develop demand and source plans as part of the supply chain management process. The audits focused on demand and source planning for peace operations and addressed three main audit questions:

(a) How accurate are the demand plans and the information used for demand planning purposes?

(b) How efficient and effective are the demand and source planning processes and clearing-house function?

(c) How effective is the performance and risk management of the demand and source planning function?

8. OIOS conducted these audits at Headquarters and six field missions during various periods from December 2019 to March 2021. The audits covered the period from 1 January 2018 to 31 December 2020. Where readily available, data for subsequent periods have been indicated.

9. The audit methodology included: (a) interviews of key personnel; (b) a review of relevant documentation; and (c) the reconciliation of relevant data across data sources including Umoja, the demand and acquisition planning tool, the online catalogue of system contracts and dashboards.

10. In order to address the issues identified in the audits, OIOS made 9 recommendations to the Department of Operational Support and 16 recommendations to field missions. The recommendations are grouped into major themes and the status of implementation is included in the annex to the present report.

III. Audit results

A. Accuracy of demand and source plans

1. Visibility of global annual demand and source plans

11. The Department of Operational Support implemented several initiatives to improve the visibility of global requirements of goods and services by peace operations and to streamline the acquisition thereof. The introduction of the demand and acquisition planning tool and its subsequent enhancements to capture demand data has facilitated the collection and consolidation of field missions' annual requirements in an organized manner, improved data quality and helped to better identify and analyse the requirements that can be fulfilled through a new procurement exercise, from an existing contract or from internal stock holdings. The global annual demand and source plans were also segmented into major categories of products, which notably allows for reviews by supply chain planners[9] and category managers to optimize the acquisition process. The online catalogue of system contracts provides

[9] Supply chain planners are responsible for planning activities related to demand, source and delivery planning that entail, inter alia, identifying demand drivers to prepare the demand plan and establishing courses of action to develop optimal sourcing and delivery options to meet the demand requirements.

users with visibility concerning the available global and regional contracts. The Department also created a dashboard to enhance the visibility of the global demand plan.

2. Granularity and forecasting accuracy of global annual demand plans

12. The audits conducted at Headquarters and field missions, however, identified opportunities to further improve the accuracy and effectiveness of global annual demand and source planning so as to fully derive its intended benefits.

13. The Department of Operational Support has yet to develop a methodology to measure the accuracy of the global annual demand plan, which is key to properly identifying, prioritizing and aggregating Secretariat-wide requirements of goods and services so as to achieve economies of scale and optimize sourcing options.

14. A comparison of the requirements in the global annual demand plans and actual procurement for 2018/19 and 2019/20 indicated that goods and services: (a) were purchased that had not been forecasted ($539 million and $166 million, for 2018/19 and 2019/20, respectively); (b) had been forecasted but were not purchased in 2018/19 because they were ultimately not needed (totalling about $200 million); and (c) were purchased in quantities that more than doubled the planned requirements (2,482 individual items, totalling $328 million, in 2019/20).

15. The inaccuracies in the global annual demand plans may have contributed to significant overstocking of inventory. In MINUSCA, approximately $20 million of its $45 million stock value (44 per cent) had not moved for more than a year, while new items were bought without verifying whether they were already part of the Mission's inventory holdings. Similarly, in MINUSMA, as of 1 March 2021, 24 per cent of stock, valued at $19 million, out of a total holding of $80 million had not moved for more than a year. In UNDOF, as at June 2020, categories of stock totalling $1.1 million, or 48 per cent of the total stock of $2.3 million, had not been used in the year and 33 per cent of items had a stock coverage of more than a year. In UNFICYP, the value of stock items that exceeded more than one year's requirements amounted to $1.4 million, or 42 per cent of the total stock of $3.3 million. In UNISFA, 33 items such as chemical kits, communication systems and metal-cutting discs amounting to $4.4 million were purchased in 2019/20, although such items were already held in stock. Seven of those items, including communication system analysers and audio amplifiers, had exceeded their expected lifespans, leading to stock obsolescence.

16. Inaccuracies in demand plans were attributable to the factors explained in paragraphs 17 to 20 below.

(a) Inadequate analyses

17. Missions did not prepare gross demand plans reflecting the total requirements for goods and services necessary for mandate implementation based on the size of operations, estimated level of activity and other considerations. This was due to the absence of a suitable forecasting model that incorporated historical demand and consumption patterns, stock level metrics such as safety stock and inventory holdings, and evolving circumstances in the mission, including changes in mission mandates. Instead, missions prepared net demand plans that represented goods and services they planned to purchase through different sourcing solutions, mostly guided by costing sheets of the current or previous year's budgets. Without gross demand plans, missions were unable to demonstrate that their demand plans were in alignment with the mandate and size of operations, thereby increasing the risk of excess stocks, as described above. In addition, the Office of Supply Chain Management was unable to validate the reasonableness of missions' requirements based on troop and staffing strength and other operational information or to compare requirements over time and

between similar missions to ensure acquisitions were optimal. The supply chain operational guidance requires the preparation of gross demand plans adjusted for projected inventory holdings at the beginning of the planning period and ongoing procurement in order to arrive to the net demand plan on which missions' budgets should be derived, but this process was not followed. Failure to follow the guidance could lead to misalignment between budgets and missions' realistic requirements.

18. In addition, OIOS found inadequacies in missions' estimates for developing net demand plans. For example, in order to estimate requirements for information and communications technology and vehicle spare parts, UNDOF used a factor of 2 per cent of its total information and communications technology assets and light passenger vehicles, without any basis for this assumption. In UNISFA, some critical items, including wastewater treatment plants, totalling $3.9 million, and spare parts for heavy duty engineering equipment, totalling $600,000, were omitted from the demand plan of 2019/20; subsequently, those demand requirements were fulfilled through the reallocation of funds. UNFICYP and UNIFIL had not documented the underlying assumptions supporting the projected requirements in the demand plan and had not established maximum and minimum stock levels, reorder quantities and reorder points, to better manage inventory and enhance demand planning. It is envisaged that the demand and supply network planning solution of Umoja Extension 2 will support the preparation of demand plans based on underlying demand forecasting parameters.

(b) Inaccurate inventory records

19. The ability of missions to prepare gross demand plans and adjust them by deducting projected inventory holdings to arrive at net demand plans was also impeded by inaccurate Umoja inventory data. In MINUSMA, there were sizeable discrepancies between physical quantities and Umoja records; out of the sample of 465 expendable line items recorded in Umoja, 58 could not be located and discrepancies were identified for 235 items. In MINUSCA, inaccuracies in inventory records were attributed to incomplete physical count and data cleansing following the migration of records from a legacy system, as well as limited access to inventory due to inadequate warehousing facilities. Inaccurate and incomplete inventory data in field missions posed challenges for effective demand planning.

(c) Insufficient granularity of the demand plan

20. The demand plans were not sufficiently granular to allow for the monitoring of purchases against the plans and identifying and following up on deviations. The plans were largely based on dollar amounts and generic descriptions of items. Quantities and subcategories of goods and services were not always specified, making the consolidation of items difficult. In addition, field missions entered services and turnkey[10] contracts in the demand and acquisition planning tool as single line items, with a quantity of one unit. For example, the United Nations Support Office in Somalia and MINUSCA entered their requirement for fuel as a one-line item costing $53 million and $7.2 million respectively, without indicating the gallons of fuel and specifying subcategory levels such of aviation, gasoline, diesel or lubricants. Considering that the global demand plan for 2019/20 was mainly composed of services (65 per cent, $1.42 billion) and turnkey contracts (23 per cent, $0.49 billion), such imprecisions led to significant variances between the demand plan and actual purchases of specific types or categories of goods and services, impeding the development of optimal sourcing solutions.

[10] Hybrid of goods and services like fuel and rations, where the contractors are responsible for the supply, storage and distribution of goods to end users.

21. Overall, OIOS estimated the forecasting accuracy by missions for goods and services grouped by product categories to be about 13 per cent against the target of 80 per cent (a 20 per cent deviation was allowed, considering the volatility of demand and purchases due to evolving circumstances in peace operations). With such a low forecasting accuracy, the potential benefits of demand planning, such as (a) exploiting internal inventory holdings before making new purchases, (b) consolidating purchases through system contracts for economies of scale and (c) consolidating delivery, will not be achieved.

22. The Supply Chain Planning Service stated that if forecasting deviations were aggregated for all missions and weighted based on purchases of seven categories of high-value goods and services that comprised 80 per cent of the demand requirements, then the forecasting accuracy would have been 83 per cent. OIOS was of the view that this method of determining forecasting accuracy lacked specificity and would not allow the Service to monitor deviations in acquiring goods and services based on product categories, and to leverage the benefits of all aspects of supply chain planning.

23. Change management was therefore required for missions to develop data-driven demand plans that would accurately forecast requirements, drive budget formulation and guide the acquisition of goods and services.

24. OIOS recommended that the Department of Operational Support improve the granularity of demand plans, develop a methodology to calculate the forecasting accuracy of missions' demand plans and strengthen change management initiatives to ensure that annual demand plans are data-driven. The Department accepted the recommendations and stated that the granularity of demand plans would be addressed by the roll-out of Umoja Extension 2, and that a new methodology to calculate forecasting accuracy would be considered as part of the development and deployment of the demand and supply network planning functionality in Umoja. The Department also indicated that it would strengthen change management initiatives despite having to cope with the challenges of the Organization's financial situation and the coronavirus disease (COVID-19) response. The Department has started implementing the recommendations.

25. OIOS also recommended that UNDOF, MINUSCA, MINUSMA, UNFICYP, UNIFIL and UNISFA improve the accuracy of forecasted demand using historical patterns of consumption adjusted for existing inventory holdings. This would drive the formulation of the missions' results-based budgeting. The missions have started to implement the recommendations.

3. Staff capacity-building

26. There were many errors in the annual demand plans submitted by missions that required several iterations of data validation checks by the Global Service Centre before they could be finalized. The major categories of data entry errors included incomplete or incorrect information on ongoing procurements or projects, missing information such as product identification numbers, incorrect contract status and incorrect calculations. Such errors could lead to inappropriate sourcing decisions and prevent items from being uniquely identified.

27. The demand and acquisition planning tool, used as an interim solution for demand planning until the deployment of the demand and supply network planning solution in Umoja Extension 2, was being enhanced continuously with added functionalities that also required staff training to be updated. Data entry errors at the mission level increased the administrative burden on the Global Service Centre and the Supply Chain Planning Service to rectify erroneous data, thereby consuming scarce resources. OIOS recommended that the Department of Operational Support

build staff capacity to ensure the accuracy and completeness of data related to the global annual demand plan. Accordingly, the Global Service Centre has conducted several training sessions to build the capacity of users responsible for entering data in the demand and acquisition planning tool. Based on the action taken by the Department, OIOS closed the recommendation.

4. Material master data architecture

28. Effective and accurate supply chain planning is dependent on a robust material master data architecture, comprising a variety of elements including product identification number, product description and technical specifications. However, at the time of audit, the issues outlined below were identified.

(a) Product identification number governance

29. Product identification numbers were created in Umoja to identify materials, but they were not in line with the United Nations Standard Products and Services Code, a global reference taxonomy or classification framework used to categorize products and services and facilitate their unique identification. The Code is composed of four levels of classification: segment, family, class and commodity, with each level representing a greater degree of specificity. However, only around 9 per cent of products in Umoja were classified up to the commodity level. With so few materials classified at the commodity level, missions were not able to properly define their requirements and identify existing stock with the granularity required for demand and source planning. For example, medical gloves were classified up to the family classification level as medical apparel and textiles, but their classification at the commodity level as gloves was not done. Furthermore, the materials were yet to be described based on their attributes such as size and capacity, thereby impeding unique identification for planning purposes.

30. In addition, out of 109,296 product identification numbers, only around 4,000 were included in the consolidated demand plan during the audit period. Although the Department of Operational Support explained that additional product identification numbers were in use relating to items in contracts, shopping carts, purchase orders and in stock, the wide disparity between the number of product identification numbers in existence and those used for current demand requirements indicated the presence of old and redundant product identification numbers. This made it difficult for users to scan, identify and assign the correct product identification number to a specific material included in the demand plan. The Department was yet to establish a systematic product identification number life cycle management process to periodically retire old, obsolete and unused identification numbers.

31. A material master transformation project had been launched in October 2018 to enrich the material master architecture by cleansing product identification numbers, mapping them to the commodity level and assigning product attributes. The project had a planned completion date of 30 June 2019 but had been delayed owing to multiple challenges and competing priorities. However, the project plan had not been formally revised to facilitate the monitoring of progress. Therefore, OIOS recommended that the milestones in the plan be updated and resources prioritized to complete the project.

32. After the audit, the Department of Operational Support advised that it had completed the mapping of product identification number to the commodity level, while the cleansing of product identification numbers and assigning of product attributes were ongoing. As part of the material master transformation project, the Department had blocked around 46,000 product identification numbers from further use. The Department also clarified that it would take until 2023 to complete the entire

project and that it had updated the milestones in the project plan and discussed and circulated the revised dates to various stakeholders and members of the project board. Based on the actions taken by the Department, the recommendation has been closed.

(b) Use and management of product identification numbers

33. Owing to systemic data migration issues, some materials of various fits, functions and characteristics had the same generic product identification number in Umoja, affecting their correct identification. For example, gaskets for different types of vehicles were mapped to the same generic product identification number. As at 31 March 2020, 26,615 individual stock items, totalling $45.1 million, in 13 peacekeeping missions were mapped to generic product identification numbers. While MINUSCA had reduced the use of generic product identification numbers from 534 line items in 2018/19 to 303 line items in 2019/20, further attention was needed, as those line items were used to raise purchase orders totalling $8.7 million in 2019/20. Similarly, in MINUSMA, there were items with multiple product identification numbers, and different items assigned the same product identification numbers. According to the Department of Operational Support, the use of generic product identification numbers may be appropriate under certain circumstances, such as procurement bidding for products with similar functions and characteristics; however, relevant staff needed to be further guided and trained on their use.

34. The Office of Supply Chain Management took an average of 44 days during the audit period to issue new product identification numbers requested by field missions. This was attributable to missions not providing the required information, such as material description and product specifications, and to the backlog of requests. Out of 67,291 mission requests for new product identification numbers during the audit period, 3,409 were duplicated and 5,540 were cancelled owing to the inadequate management of requests for new product identification numbers at field missions. Delays in processing requests for new product identification numbers affected the demand plan as the mission planners were not able to enter the product identification numbers for the new items that were required.

35. OIOS recommended that the Department of Operational Support improve the management of product identification numbers. The Department accepted the recommendation and stated that it would issue additional guidance on the use of non-generic product identification number. Implementation of the recommendation is in progress.

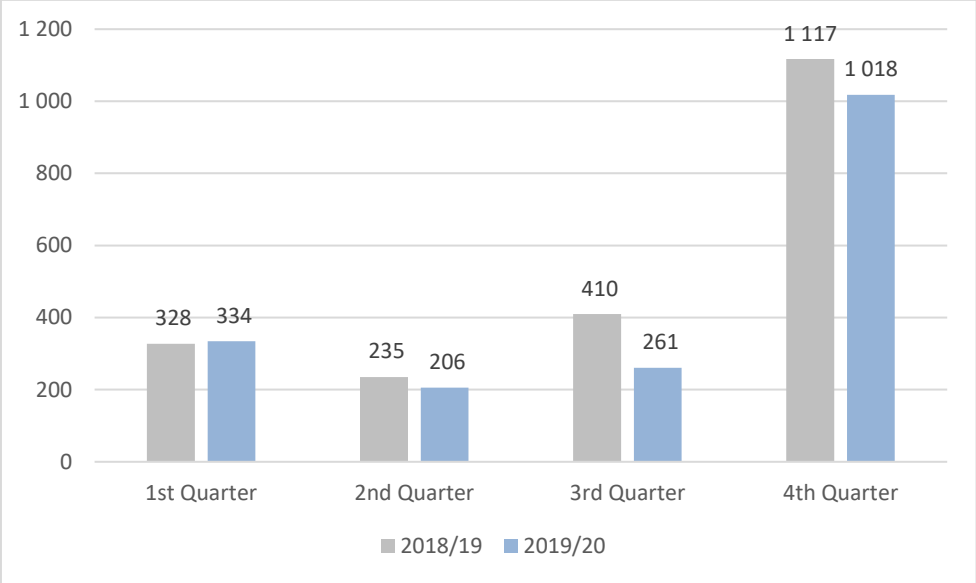
5. Year-end purchases

36. Procurement expenditures in the last quarter of the year were significantly higher than the first three quarters combined. The high year-end purchases raised questions about whether such spending was necessary or done to utilize unspent budgeted funds at the end of the fiscal year. Such an approach in field missions may also result in an increased risk of overstocking.

37. In 2018/19 and 2019/20 for example, expenditures were 3.4 and 3.8 times higher, respectively, than the average quarterly spending in the first three quarters of the year for the 13 peacekeeping missions as shown in the figure below. In 2020/21, the volume of purchases in missions during different quarters of the year may have been affected by the COVID-19 pandemic.

Procurement values per quarter for 2018/19 and 2019/20

(Millions of United States dollars)



38. There were also wide deviations between demand requirements and actual purchases. For example, actual procurement in the first quarter of 2019/20 was $334 million against a demand requirement of $1.6 billion. Conversely, the actual procurement in the last quarter was $1 billion against a demand requirement of $154 million. The spike in purchases in the last quarter could not be fully attributed to the delayed establishment of contracts, as 58 per cent of demand requirements could be met from existing contracts, while 42 per cent required new procurement actions. There was therefore a risk that demand requirements could have been overstated and high year-end spending done to utilize unspent budgeted funds at the end of the fiscal year, leading to overstocking.

39. The Business Transformation and Accountability Division advised that it was in the process of developing a key performance indicator to monitor the timely implementation of the demand plan by product category. The Global Asset Management Policy Service in the Office of Programme Planning, Finance and Budget of the Department of Management Strategy, Policy and Compliance, had established an indicator to reduce waste and loss of items in stock, and determined that 70 per cent of equipment was in stock for over six months, against the key performance indicator of no more than 50 per cent of equipment held in stock for a period longer than six months. Since the Department is already monitoring the ageing of assets in stock, OIOS did not make a recommendation, but strongly encouraged the Department of Management Strategy, Policy and Compliance and the Department of Operational Support to monitor high rates of year-end purchases and coordinate efforts to reduce the risk of overstocking and obsolescence of assets and inventory.

B. Efficiency and effectiveness of demand and source planning

1. Utilization of system contracts

40. System contracts, meant to be used to achieve faster procurement and economies of scale, were not being used optimally. Out of 310 system contracts that were in place during the audit period, 110 contracts with an aggregate not-to-exceed amount of

$1.3 billion had a utilization rate of less than 50 per cent. These included 27 contracts, with an aggregate not-to-exceed amount of $257 million, that were not utilized at all.

41. The reasons for the low utilization of system contracts include: (a) longer lead time for delivery from overseas; (b) higher costs of goods under system contracts than under local contracts, when freight costs are factored in; (c) system contracts not meeting the specific local requirements of field missions; and (d) excessive not-to-exceed amounts due to overstated demand requirements. For example, MINUSMA requested approval in November 2019 for local procurement of tyres and batteries because delivery time through the system contract was more than 8 months. For the procurement of tents, although the related system contract delivery period was 30 to 90 days, the Mission faced uncertainty over border closures during the COVID-19 pandemic and could procure urgently needed items locally at a slightly lower price. In MINUSCA, available system contracts for generators did not always meet requirements because they did not include some necessary spare parts. In March 2020, the Procurement Division revised the system contract for generator spare parts to include mission requirements. In UNDOF, the system contracts could not always be used owing to trade restrictions. In UNISFA, the delivery time for items, such as power generation systems and wastewater treatment plants, purchased through system contracts was significantly longer than for stand-alone contracts. The lead time for goods purchased from system contracts and delivered in the second quarter of 2019/20 were on average 330 days from the time shopping carts were raised, compared to 196 days for stand-alone contracts.

42. Procurement officers and category managers needed to take the above issues into consideration when establishing system contracts so as to optimize their use and derive the intended benefits. OIOS, in its audit of strategic management of the procurement functions (report 2019/111, dated 19 November 2019), recommended that the Department of Operational Support analyse and prepare an action plan to address the low utilization rates of system contracts. The recommendation was in the process of implementation.

2. Solicitation schedule

43. Demand planning helps to initiate the solicitation process in a timely manner in order to establish new contracts and/or extend the validity or not-to-exceed amounts of existing contracts based on aggregated net demand. The Supply Chain Planning Service maintains a solicitation schedule that indicates the status of ongoing solicitation processes and facilitates monitoring and follow-up. However, solicitations related to information and communications technology, aviation and corporate support services were omitted from the solicitation schedule. OIOS recommended that the Department of Operational Support expand the solicitation schedule to include all commodities, so as to have a consolidated view of expired contracts and to initiate the procurement process in a timely manner, based on needs assessment. After the audit, the Service included information and communications technology, aviation and corporate support services in the solicitation schedule. Based on the action taken by the Department, OIOS closed the recommendation.

3. Strategic supply chain planning and rolling demand plans

44. The supply chain management blueprint envisioned the establishment of a global, long-term strategic plan as one of the core supply chain planning processes. The provisional supply chain operational guidance also required strategic supply chain planning with a 2 to 5 year horizon in order to meet the long-term objectives of the supply chain management strategy. The main outputs of the process would include a global outlook regarding the scope, scale and geographic locations of entities; an annually updated strategic supply chain network design; and a strategic demand plan,

identifying long-term requirements for the Organization. Existing planning processes and practices, however, were limited to the development of global annual demand plans, driven by the field missions' forecasted requirements. Nevertheless, continuously improving demand data and visibility of global requirements have begun to provide opportunities for strategic supply chain planning.

45. The provisional supply chain operational guidance also introduced the concept of the rolling demand plan, which allows flexibility through monthly adjustments of demand plans when requirements for relatively longer periods cannot be forecasted accurately owing to changing circumstances. The rolling demand plan was not, however, implemented in field missions. The Organization was therefore not able to adjust initial plans flexibly to avoid overstocking and/or stock-outs. For example, the rolling demand plan would have allowed flexibility to adjust the 2019/20 demand plan to respond to the change in requirements of field missions due to the onset of the COVID-19 pandemic.

46. OIOS recommended that the Department of Operational Support conduct strategic supply chain planning to meet the longer-term requirements of the Organization and build the capacity of staff to implement rolling demand plans that provide flexibility in planning. The Department accepted the recommendation and stated that it had been providing long-term demand forecasts to category managers to establish system contracts, as well as multi-year demand trend analysis to support the development of category management strategies and action plans. Implementation of the recommendation is in progress.

4. Sourcing from stocks in reserves and surplus inventory

47. The revised concept of operations for strategic deployment stocks (A/72/783, annex III) required stock in reserves and surplus inventory to be recognized as one of the internal sources from which to fulfil demand requirements. The clearing-house function in the Global Service Centre checks for internal sourcing possibilities before exploring external options. When developing demand and source plans, missions also needed to consider existing strategic deployment stocks, the United Nations reserves and other missions' surplus inventory as preferred sourcing options for the economical use of Organization's resources.

48. From the aggregate 2019/20 demand plan, the clearing house identified at least 306 items, totalling $35 million, that could be met from existing reserves and recommended that field missions internally source those requirements. Accordingly, MINUSMA sourced one fuel truck and seven pick-up trucks from global surplus and received various assets from other missions, including 254 modular prefabricated units. However, internal sourcing by all field missions only amounted to $3.1 million (9 per cent).

49. Furthermore, missions were not declaring their idle assets as surplus holdings to enable other missions to source and use such assets. In 2019/20, MINUSCA declared as surplus and shipped 200 radios, valued at $173,000, to another mission. However, the Mission also had a surplus of medical and engineering equipment and supplies, totalling $2 million and $9 million, respectively. OIOS recommended that MINUSCA strengthen the mechanism to identify and communicate information on surplus goods in a timely manner to the Global Service Centre. MINUSCA accepted the recommendation.

50. The limited sourcing from existing reserves was attributed to higher costs for older items. Considering changes in the life cycle of missions and the increased delegation of authority to heads of missions, OIOS plans to audit the management of strategic deployment stocks in the near future; therefore, no recommendation is made on the issue at this stage.

5. Delivery cost

51. The Supply Chain Planning Service developed a conceptual workflow to consolidate the delivery of goods and services by identifying, prioritizing and aggregating delivery requirements. In 2019/20, the potential to consolidate delivery existed only for goods totalling $253 million, or 12 per cent of the total requirements of the 2019/20 demand plan (the rest of the plan was for services and turnkey contracts). Nevertheless, there were missed opportunities to consolidate delivery in missions. For example, in the second quarter of 2019/20, MINUSCA had 10 separate shipments of goods from the same country of origin and with the same Incoterms and delivery dates in the same quarter. Those deliveries were not considered for consolidation. Likewise, in MINUSMA, shipments related to 100 purchase orders that were reviewed were not consolidated and shipped using the same carrier, despite the shipments originating from the same region and with similar delivery dates. In UNISFA, there were inherent logistical challenges to the timely delivery of goods, including impassable roads during the rainy season and bureaucratic entry clearance procedures for goods at one port of entry. These challenges required proper delivery planning for the timely receipt of essential supplies.

52. OIOS recommended that MINUSCA, MINUSMA and UNISFA develop delivery plans to mitigate logistical challenges, identify shipments meeting the criteria for consolidation, improve coordination among technical sections, and wherever possible, consolidate shipments. After the audit, MINUSCA introduced a spreadsheet as an interim measure to monitor and plan deliveries. Based on the action taken by MINUSCA, the recommendation has been closed. MINUSMA and UNISFA were in the process of implementing the recommendation.

53. The main impediment was the absence of a mechanism for missions to raise shopping carts and consolidate the purchase orders per contract/supplier simultaneously. In addition, Umoja Extension 2 did not include tools to facilitate the consolidation of delivery. The lack of delivery consolidation deterred the Organization from making possible savings and reducing the environmental impact of multiple shipments along the same delivery routes. The Department of Operational Support commented that the consolidation of delivery requirements was beyond its remit. Nevertheless, the Office of Supply Chain Management was considering the establishment of a mechanism for missions to consolidate their delivery requirements, which would require a dedicated central or regional hub capacity, modification of the existing funding mechanism and a specific delegation of authority. OIOS did not issue a recommendation but will continue its consideration of the issue in future audit plans.

C. Effectiveness of performance and risk management

1. Key performance indicators

54. Key performance indicators help to measure and manage performance. The Office of Supply Chain Management had established the indicators against which to assess the benefits of the supply chain planning function, including fewer cases of urgent needs for goods and services, reduced requests for local procurement authority, reduced non-expendable surplus inventory and surplus assets, the provision of required goods when needed, reduced overall delivery costs and the reduced misuse of resources. However, the baseline and targeted performance levels had not yet been determined, which prevented the Supply Chain Planning Service from assessing the benefits of supply chain planning. OIOS recommended that the Department of Operational Support establish key performance indicators for the supply chain planning function and develop a plan to measure and report on the benefits realized. The Department accepted the recommendation and stated that the Enabling and

Outreach Service had drafted key performance indicators as part of the supply chain performance management framework, which were being reviewed. Therefore, the recommendation remained open.

55. In addition, MINUSCA had not established an adequate performance management framework for the supply chain planning function. Furthermore, MINUSCA did not develop key performance indicators to monitor areas such as inventory turnover, order lead times and supply chain response rate, which prevented MINUSCA from taking corrective action on weaknesses in supply chain planning. OIOS recommended that MINUSCA develop key performance indicators to monitor its supply chain planning performance. The Mission was in the process of implementing the recommendation.

2. Risk management programme

56. The Secretariat's risk register identified inadequate planning leading to over- or underestimation of equipment and supplies as an area of risk. The Department of Operational Support risk register of August 2019 indicated failure to respond rapidly to a crisis as a strategic risk. The Global Humanitarian Response Plan for COVID-19 of March 2020 also highlighted various supply chain risks to which the Organization was exposed amid the ongoing pandemic.

57. However, a risk management programme for Secretariat-wide supply chain planning had not been established. The risk registers in MINUSCA and MINUSMA also did not comprehensively cover the supply chain planning process. For example, MINUSCA and MINUSMA risk registers did not include risks related to stock-outs due to inaccurate inventory data in Umoja. In response to the COVID-19 pandemic, MINUSCA had not developed a risk register but had handled the supply chain issues on an ad hoc basis, which led to stock-out of hand sanitizers and handwashing liquids. UNDOF and UNFICYP, in consultation with the Department of Management Strategy, Policy and Compliance, had started reviewing the risks associated with unique events, such as the COVID-19 pandemic, in order to incorporate these risks in their risk register.

58. While the COVID-19 pandemic was a catalyst in highlighting challenges in the supply chain, a risk management programme is essential to addressing supply chain challenges so as to ensure business continuity. The Department of Operational Support advised that it had contributed to the United Nations enterprise risk register where risks pertaining to procurement and supplier management, procurement fraud and theft of fuel, rations and inventory had been identified. The Department had also reflected those risks in the departmental risk register and developed a risk treatment and response plan in April 2020, and was in the process of updating its risk register, with expected completion by 31 December 2021. Therefore, OIOS did not make a recommendation to the Department but encouraged it to implement a risk management programme for Secretariat-wide supply chain planning functions in order to address supply chain challenges and effectively respond to crisis situations. OIOS made recommendations to MINUSCA and MINUSMA to develop adequate risk registers and manage key supply chain management risks. The missions accepted the recommendations and were in the process of implementing them.

Annex

Status of implementation of recommendations

Recommendation	*Implementation status as at 15 October 2021*	*Management comments/Actions taken*
Accuracy of demand plans		
1. The Department of Operational Support should, in consultation with field missions, take measures to improve the granularity of the demand plan and ensure units of measurement for each category of goods and services are recorded, wherever feasible. **Rating**: Important[a] **Response**: Accepted	In progress	The issue will be addressed upon technical completion and roll-out of the Umoja Extension 2 solution for demand and supply network planning in 2021 and the introduction of related supply chain processes. Meanwhile, the Office of Supply Chain Management business guidance for the 2021/22 planning cycle had incorporated instructions to all entities regarding the optimal granularity of demand to be developed in the demand and acquisition planning tool.
2. The Department of Operational Support should strengthen its change management initiatives to ensure that global annual demand planning by field missions is data-driven and based on adequate quantitative and qualitative analyses. **Rating**: Important **Response**: Accepted	In progress	The Department will strengthen its change management initiatives, including the major change associated with the Umoja demand and supply network planning solution, despite having to cope with the challenges of the Organization's financial situation and COVID-19 response.
3. The Department of Operational Support should develop a suitable methodology to calculate the forecasting accuracy of mission demand plans and analyse variances at the end of a planned period so as to identify the improvements needed and develop corrective actions based on lessons learned. **Rating**: Important **Response**: Accepted	In progress	Options for a new methodology to calculate forecasting accuracy will be considered as part of the development and deployment of the Umoja demand and supply network planning functionality. In the interim, in July 2020, the Office of Supply Chain Management developed and deployed the demand and acquisition planning Delta dashboard to support supply chain planners in monitoring the implementation of their supply chain plans on a monthly basis, and in identifying potential issues to be discussed at integrated business planning meetings.
4. UNDOF, MINUSCA, MINUSMA, UNFICYP, UNIFIL and UNISFA should improve the accuracy of forecasted demand using historical patterns of consumption adjusted for existing inventory holdings that would drive the formulation of the missions' results-based budgeting. **Rating**: Important	In progress	The missions indicated that there were limitations in the current demand and acquisition planning tool that prevented critical parameters from being considered in developing the demand plan. The scheduled implementation of the demand and supply network planning solution of Umoja Extension 2 in 2022 would facilitate the development of a demand plan with

Recommendation	*Implementation status as at 15 October 2021*	*Management comments/Actions taken*
Response: Accepted		improved accuracy. In the interim, during the preparation of the budget for 2021/22, MINUSMA has made efforts to base its demand planning on identified operational needs. UNDOF and UNIFIL were in the process of providing interim guidance to the technical sections and enhancing coordination with them, respectively. UNFICYP had requested the Office of Supply Chain Management and the Umoja Information and Communications Technology administrator to develop and implement automated stock triggers.
Staff capacity-building		
5. The Department of Operational Support should, in consultation with field missions, identify the training needs of users responsible for determining and entering data related to demand requirements and build the capacity of staff to ensure the accuracy and completeness of data related to the global annual demand plan.	Implemented	The Department provided demand and acquisition planning training to clients in accordance with their training needs.
Rating: Important		
Response: Accepted		
Material master data architecture		
6. The Department of Operational Support should revise the plan for the material master transformation project with updated milestones and prioritize the resources to complete the project to improve the granularity and applicability of material master data.	Implemented	The Department revised the plan for the material master transformation project and scheduled completion of the project by 2023.
Rating: Important		
Response: Accepted		
7. The Department of Operational Support should improve the management of product identification numbers, including: (a) clarifying to field missions the level of detail required for requesting new product identification numbers; (b) retiring the product identification numbers of obsolete items; and (c) providing additional guidance to resolve the use of generic product identification numbers.	In progress	The material master data management team provided guidance to users regarding the level of details required for requesting new product identification numbers and had a process in place for blocking obsolete product identification numbers as part of regular master data maintenance. The Department would issue guidance on the use of non-generic product identification numbers during the procurement process, such as when creating a shopping cart or contract within Umoja.
Rating: Important		
Response: Accepted		

Recommendation	*Implementation status as at 15 October 2021*	*Management comments/Actions taken*
Sourcing and delivery		
8. The Department of Operational Support should expand the solicitation schedule to include solicitations related to information and communications technology, aviation and corporate support services. **Rating**: Important **Response**: Accepted	Implemented	The work to include such solicitations was completed in the first quarter of 2021.
9. The Department of Operational Support should conduct strategic supply chain planning to identify and prepare to meet the longer-term requirements and sourcing solutions of the Organization, and to build capacity to implement rolling demand plans that provide flexibility for adjustment based on evolving operational requirements. **Rating**: Important **Response**: Accepted	In progress	Strategic supply chain planning had changed in 2019 with the establishment of the Office of Supply Chain Management. The Supply Chain Planning Service had been providing long-term demand forecasts to category managers to establish system contracts, as well as multi-year demand trend analysis to support the development of category management strategies and action plans.
10. MINUSCA, MINUSMA and UNISFA should develop delivery plans to mitigate logistical challenges, identify shipments meeting the criteria for consolidation, improve coordination among technical sections and, wherever possible, consolidate shipments. **Rating**: Important **Response**: Accepted	MINUSCA – implemented MINUSMA and UNISFA – in progress	MINUSCA introduced a spreadsheet as an interim measure to monitor and plan deliveries. MINUSMA initiated actions to introduce robust delivery planning for the 2021/22 demand plan. UNISFA continued to improve coordination with stakeholders to improve efficiencies on delivery Incoterms, delivery routes and the scheduling of deliveries.
11. MINUSCA should identify and communicate surplus goods to the Global Service Centre in a timely manner. **Rating**: Important **Response**: Accepted	In progress	Technical sections have been requested to review all slow-moving items.
Performance and risk management		
12. The Department of Operational Support should establish key performance indicators to measure and monitor the performance of the supply chain planning function and develop a plan to measure and report on the benefits realized. **Rating**: Important **Response**: Accepted	In progress	The Enabling and Outreach Service had drafted key performance indicators as part of the supply chain performance management framework, which were being reviewed.

Recommendation	*Implementation status as at 15 October 2021*	*Management comments/Actions taken*
13. MINUSCA should develop key performance indicators to monitor its supply chain planning performance. **Rating**: Important **Response**: Accepted	In progress	MINUSCA was in the process of developing a plan to implement the key performance indicator targets and benchmarks prescribed by the Department of Operational Support.
14. MINUSCA and MINUSMA should develop risk registers and manage key supply chain management risks. **Rating**: Important **Response**: Accepted	In progress	MINUSCA and MINUSMA were in the process of establishing a revised supply chain-related risk register and reviewing supply chain management risks, respectively.

[a] Important recommendations address those risk issues that require timely management attention. Failure to take action could have a high or moderate adverse impact on the Organization.