



# General Assembly

Distr.: General  
4 October 2019

Original: English

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## Seventy-fourth session

Agenda items 135 and 148

### Proposed programme budget for 2020

**Administrative and budgetary aspects of the financing of  
the United Nations peacekeeping operations**

## **Eleventh progress report on the enterprise resource planning project**

### **Report of the Secretary-General**

#### *Summary*

The present report is submitted pursuant to General Assembly resolution [64/243](#), in which the Assembly requested the Secretary-General to provide annual updates on the progress of the enterprise resource planning project, Umoja. The report provides an update since the issuance of the tenth progress report ([A/73/389](#)) in September 2018.

The Umoja user base is currently 43,639 users across 422 locations. The user base has diversified significantly owing to the expansion to completely new categories of users.

The deployment of Umoja Extension 2, comprising 41 per cent of Umoja processes, has progressed steadily in the form of six key subprojects, significantly expanding the functional scope and technical complexity of Umoja. In parallel, existing functionality is also being continuously improved, with the notable addition of a mobile version of Umoja to improve the user experience and increase user adoption. Besides Umoja Extension 2 solutions, 2019 also witnessed the first major upgrade of the Umoja hardware and software since their first installation in 2011.

The present report also contains updates on benefit realization, total cost of ownership, mainstreaming and risk management and a request for resources for 2020.

The General Assembly is requested to take note of the progress of the project and to approve the resource requirements of \$22,644,000 for 2020.



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## I. Introduction

1. The present report is submitted pursuant to General Assembly resolution [64/243](#), in which the Assembly requested the Secretary-General to provide annual updates on the progress of the enterprise resource planning project, Umoja. It provides an update on the project since the issuance of the tenth progress report ([A/73/389](#)) and addresses the decisions of the Assembly in its resolution [73/279 A](#).

## II. Project management, governance and oversight

### A. Governance overview

2. Umoja continues to benefit from the strengthened governance model, first described in the fifth progress report ([A/68/375](#) and [A/68/375/Add.1](#)). The Secretary-General remains a proactive champion of the project. The Management Committee, chaired by the Chef de Cabinet, reviews the project status periodically and provides guidance on strategic issues as needed. The Umoja Steering Committee, chaired by the Under-Secretary-General for Management Strategy, Policy and Compliance, oversees the strategic and operational management of the project.

3. As reiterated by the General Assembly in its resolution [73/279 A](#), the successful implementation of Umoja requires the full support and commitment of senior management, as well as close and continuous engagement with key stakeholders. Senior managers therefore continue to play a key role in setting the tone for an enterprise approach and require an openness to re-engineer their current processes and practices to support the Secretary-General's reforms to make the Organization more nimble, effective, transparent, accountable, efficient, pragmatic and decentralized to better support its normative and operational activities, achieve greater efficiency and effectiveness in the management and utilization of financial, physical and human resources and ultimately enhance support to programme delivery.

4. The Umoja Project Director will continue to brief the Information and Communication Technology Executive Committee on a regular basis to ensure that the information and communications technology (ICT) strategy can fully leverage the growing functional footprint of the Umoja solution and also to ensure that the Umoja technology road map is aligned with the global ICT strategy. The project will receive feedback and implement requests from the Management Client Board in respect of the Umoja Foundation and Extension 1 functionality while continuing to accord the highest priority to ensuring the deployment and user adoption of Umoja Extension 2 (UE2).

### B. Implementation of oversight bodies' recommendations

5. During the reporting period, the project was audited by the Board of Auditors. In its eighth annual progress report on the implementation of the United Nations enterprise resource planning system (see [A/74/153](#)), the Board observed that UE2 processes would transform and provide added value to the Organization through the addition of new strategic functions and processes in the areas of strategic planning and budgeting, supply chain and logistics management and programme and project management. The Board also noted that, during the reporting period, the Secretary-General's management reforms had brought in large-scale structural and functional changes, and that the Umoja team and Umoja, as the enterprise resource planning system, had a significant role to play in implementing those changes. It further noted that there were multiple parallel UE2 deployments that affected the same set of

business process owners and Umoja resources that were also engaged in the implementation of the management reforms. The Board also noted that there was a quantum of UE2 work that remained to be completed and that there was a material risk that implementation of the full scope might not be achieved by 31 December 2019. In addition, the Board recommended continual reviews of risks that were associated with the full deployment of the Umoja solution. Lastly, it should be noted that since mid-2016, the project has managed its timelines and costs remarkably well despite the aggressive schedules, the breadth of functionality, technical complexities and the concurrent downsizing and reorganization of resources, resulting in the project having been under budget and on time to date.

6. The Board has made 89 recommendations since the inception of the project. Of the 31 recommendations pending as at the end of 2018, 8 have been fully implemented and 23 are under implementation. Of the 22 recommendations in its most recent report covering project governance and management, Umoja application controls, support functionalities and the Umoja business case, 3 have already been fully implemented.

7. The Office of Internal Oversight Services has conducted 22 audits and made 216 recommendations since the beginning of the project, of which 16 recommendations are under implementation. In 2019, the Office conducted a detailed Umoja system security audit, including of the security architecture and design. The final report is pending as at the end of September 2019.

### **III. Project status**

#### **A. Overview**

8. The Umoja solution has 43,639 users in 422 locations. The major milestones achieved by the project since 2018 are presented in annex I. Since the previous progress report, the Umoja team has been focusing primarily on UE2 solutions, major hardware and software upgrades and continuous improvements that have no dependency on UE2 solutions.

9. Umoja supported the successful implementation of the three-pillar reform agenda of the Secretary-General (management reform, peace and security reform and development reform), which went into effect on 1 January 2019. Umoja facilitated the creation of new departments and the closure of legacy departments. The effort had an impact on over 2,500 staff and entailed considerable planning, extensive data collection and validation and significant testing of the new master data elements; the execution required close collaboration with numerous business stakeholders to ensure a smooth transition, including timely payroll processes for all impacted staff and the processing of transactions by the new departments from the first day. Discussions are continuing on the operating models and requirements for planning and executing the additional deployment activities for the development reform during 2020, applying the lessons learned from the first year.

10. UE2 is extensive in volume and scope, covers many new complex functions in interdependent work streams and involves several new categories of users. The significant progress in UE2 deployments during 2018 and 2019, summarized in annex I, was achieved, along with the project having:

(a) Successfully rolled out a unique set of SAP technologies to complement and supplement existing SAP modules in combinations not previously implemented by any other SAP customer, thereby providing the United Nations with a solution that goes beyond the functionality of a traditional enterprise resource planning system;

(b) Downsized the project resources as planned, while restructuring the project and honing and enriching the technical skills of Umoja staff through internal cross-training and supplementary SAP technical training;

(c) Reinforced autonomous capacity by reprofiling posts or jobs for specific sets of required SAP skills and then filling the posts with suitable resources, thereby mitigating the need for consultants and obviating time and expense for knowledge transfer;

(d) Controlled costs so that the project is well within budget for the third successive year.

11. The Board of Auditors, in the overall conclusions of its sixth annual progress report on the implementation of the United Nations enterprise resource planning system (A/72/157), noted that the implementation of Umoja Integration globally across more than 40,000 staff in 400 locations was a significant achievement, given the project's complexity and difficult start. The additional functionality introduced with UE2 has increased this complexity very significantly, expanding the substantive user base of Umoja and enabling the transformation of the way the Organization manages its programmes and operations.

12. Table 1 provides a summary of the UE2 projects. The progress in their deployment is comprehensively explained in the sections that follow.

Table 1  
**Umoja Extension 2 projects**

<i>Project</i>	<i>Description</i>
Strategic planning, budgeting and performance management	Strategic planning, budgeting and performance management supports the full programme management life cycle, covering strategic planning, resource planning, programme execution and performance management. Programme management includes the development of detailed plans by programme and consolidation within results-based-budgeting and management frameworks. Budgeting covers a wide range of functionality over the life cycle of a budget, including modelling of resource requirements, review of standard costs and recosting. It facilitates better resource planning by linking resource estimates to standard rates to improve the reliability of estimates. Performance management and reporting functionality facilitate monitoring of progress and linking resource utilization to results
Implementing partner management	Implementing partner management streamlines the interaction between the Secretariat and implementing partners (United Nations agencies, funds and programmes and non-governmental organizations, among others) and end beneficiaries by providing a portal and tools for interaction with the Secretariat before and during their partnership, including recording the progress of implementation and other performance details, and requesting payments

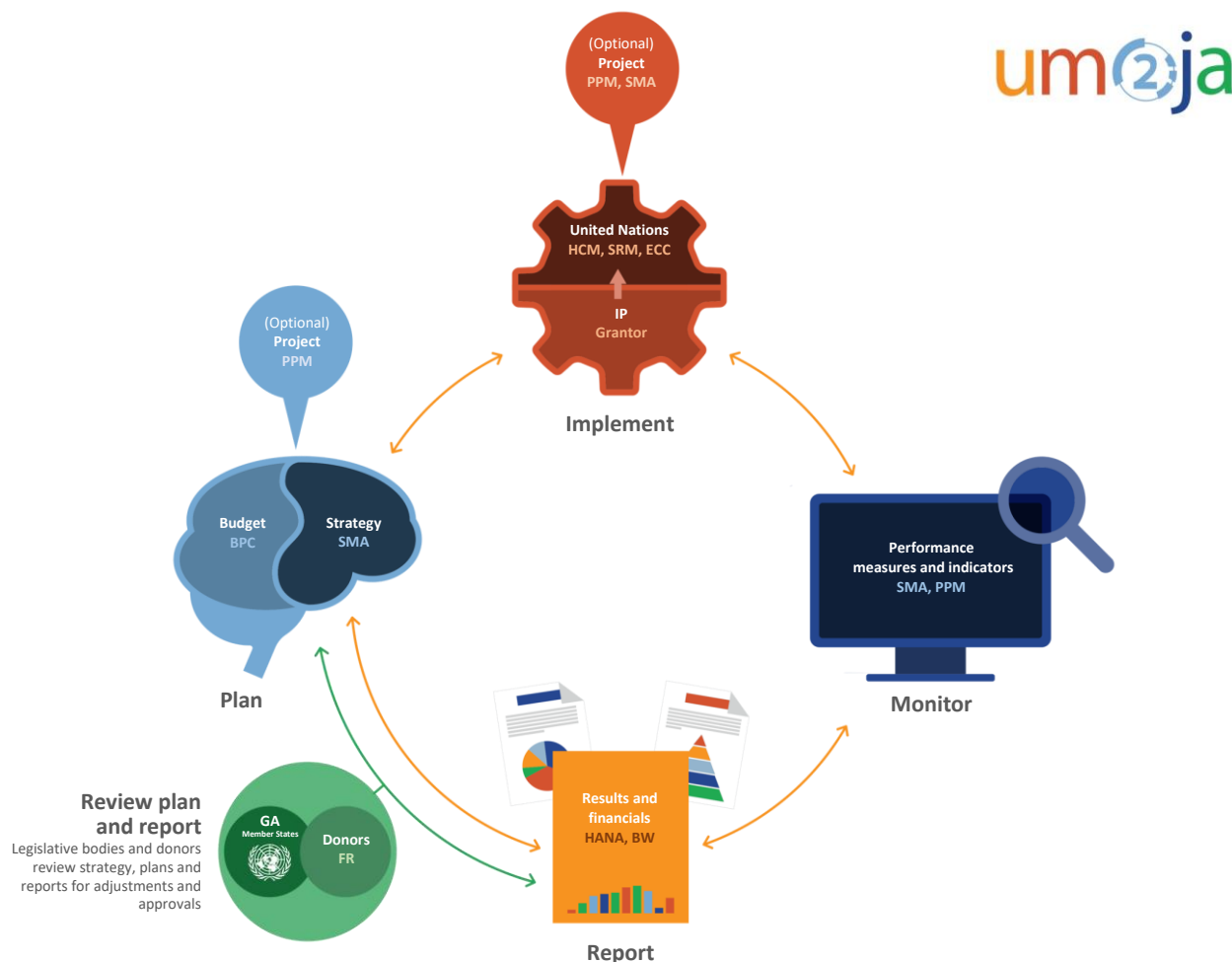
<i>Project</i>	<i>Description</i>
Fundraising and donor relations	The fundraising and donor relations module provides the functionality to register and maintain donor profiles and interact with donors throughout the life cycle, from the appeals for funds to the signing of the grant agreement. It supports programme managers in analysing their prospective donors, launching the appeals, planning media events and following through with interested donors until the conclusion of a grant agreement. It provides a holistic view of the resource mobilization efforts and also enriches the planning for implementation by providing better funding and cash flow forecasts and by monitoring the revenue pipeline
Supply chain management (phases 2 and 3)	The second and third phases of supply chain management cover the tracking and tracing of materials and transportation management, as well as demand planning (providing visibility to future requirements for materials and services) and supply network planning (planning for supplier networks, replenishment and safety stocks, among other things)
Uniformed capabilities management	Uniformed capabilities management focuses on diverse needs for the management of troops, police and contingent-owned equipment and reimbursements to troop- and police-contributing countries. It consolidates multiple non-integrated systems, such as the electronic contingent-owned equipment system, the government claims management system and the troops database system, to provide an end-to-end solution integrated fully with the other Umoja modules
Conference and event management	Conference and event management includes the entire life cycle of conferences and events, from planning to execution and follow-up. The conference and event management solutions provide end-to-end meeting support, from requests to planning, service management, billing, cost recovery and property management, among other things, simplifying the process for event requestors and for the internal and external service providers. The meeting participant management module of conference and event management streamlines communications between event organizers and participants before, during and after events for thousands of participants, including for registration, access to event documentation and printing security badges for events

## **B. Strategic planning, budgeting and performance management**

13. The strategic planning, budgeting and performance management solution supports the Secretary-General's management reform vision of empowering managers and staff, increasing transparency and accountability for results and improving on the delivery of mandates. The solution has significant potential to

transform the Organization to focus on institutional results, strengthen transparency and create a culture of empowerment and accountability across the Organization through results-based management. It delivers the functionality to plan, implement, monitor and report on programmatic deliverables, as illustrated in figure I.

Figure I  
United Nations programme management cycle, with legislative bodies and donor review cycle and Umoja solution components



*Abbreviations:* BPC, business planning and consolidation; BW, Business Warehouse; ECC, ERP Central Component; FR, fundraising and donor relations management; GA, General Assembly; HANA, SAP HANA business data platform; HCM, human capital management; IP, implementing partner management; PPM, portfolio and project management; SMA, strategic management application; SRM, supplier relationship management.

14. Strategic planning, budgeting and performance management has added programme and project planning capabilities to Umoja. Strategic plans and results frameworks of different types and durations can be created and linked hierarchically. For example, an annual results-based-budgeting framework could link to a three-year plan outline, which could link in turn to a medium-term or long-term strategic plan. The next release will also accommodate additional strategies or frameworks that are not mandated by the General Assembly. This will provide programme managers with robust tools to plan and monitor their programmes of work comprehensively and to link multiple frameworks, where appropriate. Once results frameworks or strategic

plans are in place, budgets can be formulated, linking resources to different elements of the plans to provide the business justification for the proposed resources.

15. The budgeting module harmonizes processes and functionality, to the extent possible, across funding sources. It includes detailed position planning related to staffing tables that ensures consistency in the application of standard salary and vacancy rates, retrieves the prices from current contracts to budget more accurately for goods and services, enables recosting of both post and non-post resources and preserves the iterations of budget proposals to track the evolution of budgets from formulation to approval. For peacekeeping, the functionality covers budgeting for resources provided by military and police units and resources supporting those units, as well as planning for goods and services, fuel and air transport.

16. The budgeting module will also be used throughout the legislative process to reflect the recommendations of the Advisory Committee on Administrative and Budgetary Questions and the decisions of the General Assembly.

17. Organizational performance management will be strengthened by assigning deliverables and milestones to organizational units and tracking and reporting progress periodically to diverse internal and external stakeholders, including Member States and donors. Internal data can also be synthesized with authoritative external data sources to support the narratives and visualization of the goals accomplished.

18. As both programmatic and resource data are being entered in the same system, new dashboards help managers to record and monitor programme delivery in real time, align financial and physical progress and visualize the link between their entity's work and the larger goals of the Organization, such as the Sustainable Development Goals.

19. In October 2018, two applications for strategy definition and strategy approval were launched for 13 peacekeeping missions, the Global Service Centre and the Regional Service Centre in Entebbe, Uganda. The applications were then adapted in December 2018 for the annual programme budget results framework and were deployed in April 2019. Umoja now holds the proposed annual results frameworks for the programme budget for 2020 as well as the approved results-based-budgeting frameworks for peacekeeping budgets for the 2019/20 period.

20. In July 2019, the performance monitoring application was deployed to all peacekeeping missions and entities supporting them, enabling the assignment of outputs and indicators of achievement to the respective responsible organizational units for the 2019/20 budgets. The functionality enables managers to regularly monitor and record progress against objectives and to maintain performance data across financial periods for multi-year trend analyses. Performance monitoring will also be rolled out for the programme budget in 2020 when the budget execution data becomes available.

21. In January 2019, the budgeting module was deployed to all programme budget-funded entities to formulate resource proposals for the proposed programme budget for 2020, and supported the production of the budget documentation. Over 200 staff from duty stations around the globe attended instructor-led training in New York and Geneva in January 2019, and the Office of Programme Planning, Finance and Budget of the Secretariat and the Umoja project team provided post-deployment hypercare support to facilitate the timely submission of budget proposals. Additionally, the recosting functionality was launched in time for the initial phase of recosting in March 2019, with a final phase planned for the end of 2019.

22. In December 2018, 16 planning forms for budgeting for peacekeeping missions were released. Those forms were enhanced and deployed in September 2019 for use by peacekeeping missions in the development of their budgets for the period 2020/21, and those missions will be supported by over 400 hours of hypercare, during a period

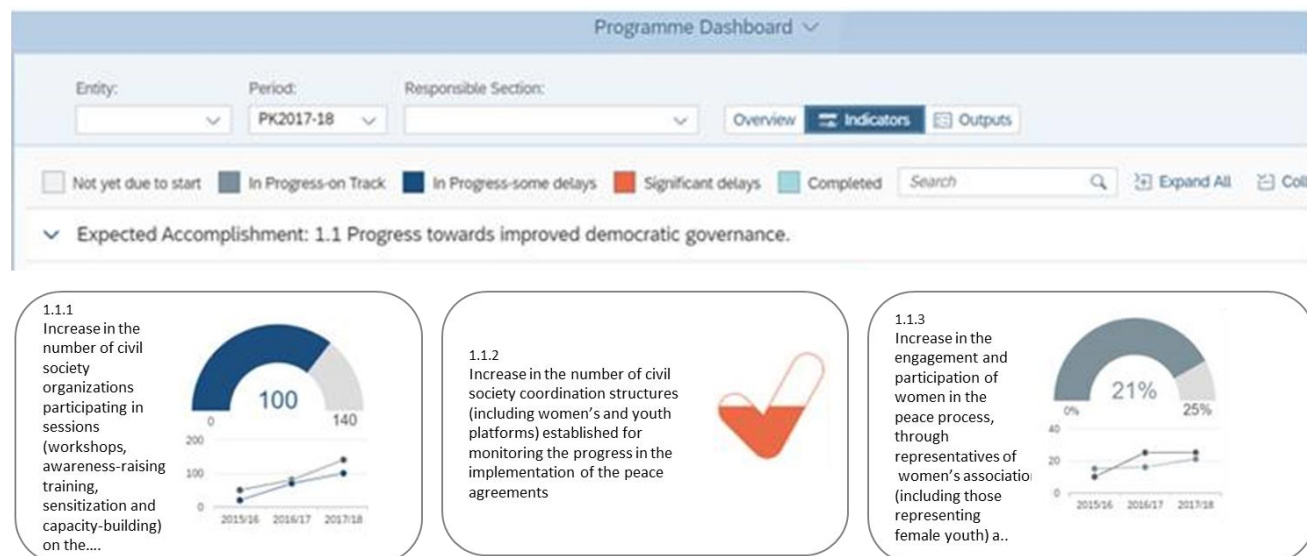


of 13 days in September and October 2019, to assist peacekeeping staff in their budget preparations.

23. The strategic planning, budgeting and performance management solution also includes portfolio and project management functionality to facilitate the planning, control and monitoring of projects, small or large, simple or complex. Large-scale projects, such as constructing a building or promoting and protecting human rights in a given country, and smaller-scale projects, such as organizing a workshop, require robust planning with many detailed activities. Project managers in the Secretariat can now leverage this capability to plan and manage project resources, linking staff, consultants and other resources, including implementing partners, to planned activities. The project management solution was deployed to three pilot entities in February 2019. Feedback received from those pilot entities will be considered before the solution is extended incrementally to other Secretariat entities.

24. In the fourth quarter of 2019, a performance monitoring dashboard (a sample of which is shown in figure II) will be launched in peacekeeping missions to provide a 360-degree view of programmes or frameworks and performance monitoring. The result will be a series of transparent, comprehensive views of programme and mandate implementation data, linked with the use of resources wherever it can be meaningfully presented. The design of the first release of the dashboard was informed by extensive consultations with representatives of several peacekeeping missions in May and June 2019. Similar consultations with regular budget entities in the first quarter of 2020 will drive an anticipated launch of dashboards in the second quarter of 2020. Those dashboards will be enhanced iteratively, as they are being custom-built for the United Nations, and will enhance the reporting for programme performance reports to Member States, the data cubes for reports of the United Nations System Chief Executives Board for Coordination and the International Aid Transparency Initiative.

Figure II  
Performance monitoring dashboard



25. The strategic planning, budgeting and performance management solution, in its totality, is at the heart of the Secretary-General's commitment to increased transparency and accountability for the use of resources to contribute to the achievement of the expected outcomes from the programmes mandated by the General Assembly.

### **C. Fundraising and donor relationship management**

26. The fundraising and donor relationship management solution enables better forecasting of prospective contributions and helps resource mobilization officers to analyse and prioritize efforts. It will provide managers with a comprehensive view of funding gaps vis-à-vis planned programme activities and will facilitate strategic decision-making to broaden target donor groups. As its deployment progresses globally, the solution will provide the Secretariat with a holistic view of its resource mobilization efforts and greater visibility into the revenue pipeline.

27. Release 1 was rolled out in September 2018 to the Department of Economic and Social Affairs of the Secretariat, the Economic Commission for Africa, the Economic Commission for Latin America and the Caribbean, the Mine Action Service, the United Nations Conference on Trade and Development, the United Nations Environment Programme (UNEP) and the United Nations Office on Drugs and Crime.

28. Release 1 focused on donor relationship management, which provides resource mobilization officers with a platform to maintain donor profiles and record and manage their interactions with donors. The donor organizations (sponsors) within the solution are integrated with Umoja through an interface that updates the sponsor business partners daily. In addition to incorporating modules for contact management and donors, release 1 includes a functionality for managing fundraising programmes and opportunities to track activities and keep information in a common repository. Resource mobilization officers can manage their planned and unplanned programmes to provide a comprehensive view of funding gaps. Negotiations between donors and resource mobilization officers can also be managed within the solution, providing senior management with an overview of revenue goals and promised contributions.

29. An existing non-SAP enterprise software platform, Siebel, was leveraged for the solution, and the development was led by in-house experts from the Office of Information and Communications Technology. The deployment of the solution to other Secretariat entities by the fourth quarter of 2019 may be delayed owing to competing priorities, including an essential upgrade of the Siebel software, the low user adoption of release 1 and the non-availability of a suitable, dedicated business lead and extended business teams. Additional efforts are being planned and will have to be prioritized in order to strengthen the business engagement and user adoption for the successful deployment of the solution.

### **D. Implementing partner management**

30. The Secretariat uses implementing partners, such as United Nations system agencies, funds and programmes, governmental agencies and non-governmental organizations, to implement projects and programmes. In such partnerships, the Organization normally transfers financial resources to the partners when it is in its best interests to leverage their capacity to implement activities that support or supplement the Organization's mandated activities.

31. The implementing partner management solution encompasses the full life cycle of collaboration with implementing partners and will improve the collaboration by providing prospective implementing partners with a portal and tools to apply to become eligible partners, request scheduled payments, record the progress of implementation and submit other performance details. The solution provides a case management functionality for each partner. Although it is standard SAP software, the United Nations is the first SAP customer to implement the software along with the SAP grants management software. The implementing partner management solution has been integrated with the existing Umoja solution for the creation of funding

commitments for budgeting and funds certification prior to the release of advances and for making payments to implementing partners.

32. In December 2018, release 1 was deployed to a limited number of representative entities, including UNEP, the United Nations Human Settlements Programme (UN-Habitat) and the Mine Action Service to reduce the risks in implementing this highly complex, pioneering solution. The cautious deployment strategy proved prudent and allowed gradual stabilization. By July 2019, \$156 million in agreements had been created for 384 implementing partners, with \$40 million in related payments. In July 2019, an enhanced release, “1.1”, was deployed to the same entities, paving the way for deployment to the entire Secretariat by the end of 2019.

33. The implementation was successful despite the non-availability of expertise in the market, as the gap was addressed by blending the expertise of the Umoja team with SAP experts procured temporarily. The strategy proved prudent as it resulted in the successful testing and deployment of the implementing partner management module, which now integrates with the Umoja grants management, funds management and other finance modules to provide the Organization with a globally unique solution to meet its implementing partner management needs. Ongoing investment in SAP training and continued access to SAP experts for troubleshooting provide the Umoja team with the capability to maintain the solution in the absence of systems integrators with such expertise.

## **E. Supply chain management**

34. The Secretariat’s vision for supply chain management calls for efficient, agile, responsive and accountable end-to-end supply chain solutions for its global clients. Supply chain management processes cover four broad functional areas: planning for the demand for goods and services, determining the sources of supply, managing the transportation, and tracking the movement of and tracing goods. The supply chain management solutions build on existing Umoja supply chain modules and processes, such as source to acquire, logistics execution and property management, including integration with finance components, and eventually link to both budget formulation and force management functionalities. The new supply chain management functionality would improve data-driven decisions in the planning processes, but its success relies on the transformation and enrichment of supply chain master data to support target operating models.

35. Implementation of the UE2 supply chain management functionality requires operational alignment with existing, new and restructured business processes in supply chain management, as well as the already deployed Umoja solutions such as budgeting and performance management. The resulting process and system linkages have broken down traditional silos, such as between the transportation management for logistics and contingent-owned equipment. The associated processes have been both a driver and an enabler for business transformation under the management reform to closely integrate supply chain management across the global Secretariat.

### **Transportation management**

36. Transportation management supports the planning and execution of transportation of contingent-owned equipment, personnel (troops and police) and goods procured commercially. It provides global visibility to the Organization’s transportation network and operations, and an early warning system for delays. In December 2018, release 1 of the solution was ready, and its deployment in January 2019 marked an important step towards an integrated transportation management and tracking solution. With the release, the transportation movements of contingent-

owned equipment and rotation of personnel (troops and police), as well as the transportation of vehicles procured commercially, are now planned and executed through Umoja, enabling in-transit visibility of movements, the consolidation of information and the capture of cost and movement data for reporting, analysis and future planning.

37. The movement of contingent-owned equipment and personnel for deployment, rotation and repatriation activities is captured by movement control focal points and uploaded into the transportation management solution, which automatically creates the transportation requirements that are subsequently used for planning and execution, including the generation of transportation cost estimates and statements of work for solicitation purposes. For commercial purchases of vehicles, the solution automatically retrieves the related Umoja purchase orders and inbound deliveries to create the transportation requirements.

38. The transportation management solution also leverages a geographic information system for geocoding, route and distance calculations and map visualizations of global transportation operations, including capabilities for local entities to track and monitor incoming and outgoing shipments and alerts for contingency planning. Transportation management also includes an externally facing portal for vendors and carriers to update real-time information to enable “track-and-trace” capabilities, monitoring and reporting. As the solution grows with time, the expanding transportation network intelligence will create a valuable source of logistical planning data.

39. In December 2019, the deployment of release 1 will be expanded to include all goods procured commercially, data related to transportation networks and lanes will be enriched and the solution will be rolled out to all Secretariat entities.

40. Release 2, which will also be deployed in December 2019, will expand functionality to also cover inter-mission and intra-mission movements and support the use of global freight-forwarding contracts and transportation capabilities for troop movements involving long-term chartered aircraft. The latter functionality is envisaged to decrease the workload of movement control staff by facilitating the recording, execution and monitoring of long-term charter aircraft operations.

41. Release 1 has also been enhanced through four electronic data interchange interfaces for the transmission of information between Umoja and external goods vendors and freight forwarders. They include interfaces managing the outbound flow of purchase order and freight order information and the inbound flow of advanced shipping notifications and event information. The interfaces reinforce end-to-end execution and tracking of the supply chain, from vendor to delivery, through electronic data exchanges, which will reduce manual interventions and provide real-time tracking.

42. The transportation management SAP software was configured and delivered as a solution for the Organization’s needs by the Umoja team, leveraging specialized training and supplementing capacity with contractors engaged temporarily, obviating the need for a systems integrator and time-consuming knowledge transfer later. Coordination of the business engagement, requirements gathering and deployment activities was led by the Umoja Coordination Service in the Department of Operational Support of the Secretariat.

#### **Demand planning and supply network planning**

43. Demand planning enables forecasts for procurement and logistics planning for materials and services, and can help to reduce stock holdings while ensuring the availability of materials and services. Supply network planning provides tools to analyse supply fulfilment strategies in terms of cost, time, quality and risk.

44. SAP decided recently to discontinue enhancements to Advanced Planning and Optimization, its mature, on-site software for demand planning and supply network planning, and instead to offer a cloud-based subscription service called Integrated Business Planning. The decision by SAP complicated the software selection of the United Nations for demand planning and supply network planning, as the Organization had to undertake additional due diligence for ensuring proper integration of the on-site Umoja SAP software with the cloud-based SAP software and ensuring that the Integrated Business Planning software could satisfy the Secretariat's business requirements, especially since the software did not have any public sector users.

45. As described in the previous progress report, following a 10-month period of multiple engagements, culminating in July 2018 with the confirmation of the suitability of Integrated Business Planning for the Secretariat's requirements, the Organization initiated negotiations for the Integrated Business Planning subscription service and planned for a pilot implementation of demand planning by the end of 2018.

46. While the negotiation of the financial terms progressed well before the end of 2018, the contract for the Integrated Business Planning subscription service was delayed until September 2019, owing to numerous challenges in negotiating legal terms and conditions for the use of the SAP cloud-based service that were acceptable to the United Nations, especially considering the legal and contractual precedents for cloud-based solutions that the Organization will most likely need in the future. This was also in line with the recommendation of the Board of Auditors to identify risks associated with the installation of Integrated Business Planning in the cloud with respect to data, hosting and legal jurisdiction for applicable laws (see [A/74/153](#), para. 53).

47. As the contractual negotiations continued for longer than anticipated, the project and business teams focused on ensuring the prerequisites that had been identified during the fit-gap review of Integrated Business Planning conducted in 2018 for the effective delivery of the solution. Among other things, the prerequisites included the enrichment of material master data, including the definition of hierarchy structures for the aggregation or disaggregation of material master records, and the cleansing of historical consumption data.

48. When a successful contractual outcome seemed probable, the project revived the engagement with SAP supply chain architects and the business team to commence detailed prototyping and building of the foundation solution. While this parallel engagement saved about two months, it cannot make up for the nine months that were lost owing to contractual negotiations. SAP and the Umoja team are collaborating closely with the business team to build the foundation components of the cloud and on-premises elements of the United Nations demand planning and supply network planning solution, with the target of completing the first phase by the end of 2019. The process owner for supply chain management and the project are collaborating to adjust the dates of the deployments to all entities after reviewing a revised plan in consultation with SAP experts.

49. Since this is the first public sector implementation of Integrated Business Planning, the United Nations and SAP are adopting a cautious approach to ensure a successful implementation.

## **F. Uniformed capabilities management**

50. The uniformed capabilities management solution has evolved from its original scope of reimbursements and payments to troop- and police-contributing countries thanks to the significant efforts invested by the business teams in re-engineering and standardizing numerous processes that could then be delivered through an integrated

solution. The uniformed capabilities management solution ties together the end-to-end planning and associated processes of uniformed capabilities management, such as the definition of unit requirements, memorandums of understanding with troop- and police-contributing countries, field inspections and verifications of contingent-owned equipment, troop strength reporting, the calculation of claims and reimbursements to troop- and police-contributing countries.

51. The solution will enable military and police planners, force generators, finance officers and logisticians to undertake core activities related to troop- and police-contributing countries in a common system that automates several labour-intensive processes and eliminates redundant data re-entry, clearly links input and output documents and facilitates reporting on contingent-owned equipment and military and police personnel. It will improve process efficiency through standardized templates for data entry, better access to centralized data, improved process workflows and streamlined verifications and payments. The solution also avails itself of the opportunity to cater for the management of pledges, force generation and selection criteria for and performance evaluation of troop- and police-contributing countries.

52. As anticipated in the previous progress report, release 1 of the uniformed capabilities management solution was deployed in December 2018. The release included the master data and foundation modules, including functionality to enable military and police planners to develop Statements of Unit Requirements for a formed unit on the basis of a standard unit classification and naming structure and using standard unit templates to alleviate the need to plan for a bespoke unit from scratch. The release also introduced several significant enhancements to the contingent-owned equipment inspection and verification modules of the uniformed capabilities management solution (previously known as the electronic contingent-owned equipment system), thereby improving the work of contingent-owned equipment units in field missions and further facilitating automation in claims processing.

53. Release 2 of the uniformed capabilities management solution was deployed in August 2019. The release features the memorandum of understanding and the calculations and claims modules to facilitate contract management of contingent-owned equipment and reimbursements for claims based on verification reports. It also features functionality to facilitate ad hoc claims such as death and disability, damage to contingent-owned equipment owing to hostile action and painting or repainting. The release includes an outbound interface that transfers Umoja purchase order data to the uniformed capabilities management solution and an inbound interface that processes claims relating to uniformed capabilities management against the purchase orders. With the successful use of release 2 for payments in September 2019, the government claims management system is now restricted to the closure of legacy claims and historical reporting. The uniformed capabilities management solution currently has over 270 users, comprising military and police planners, finance officers, contingent-owned equipment inspectors and other logisticians.

54. The solution was developed in close collaboration with the field missions and the Department of Peace Operations, the Department of Operational Support and the Department of Management Strategy, Policy and Compliance; the Umoja Coordination Service in the Department of Operational Support led the coordination of the business teams and supported project management, change management and the deployment. The uniformed capabilities management software has been developed jointly by the Office of Information and Communications Technology and Umoja teams as it leverages existing Siebel software, and is integrated with the SAP elements of Umoja. The Siebel system is already used by the Office to support fuel and rations management and the electronic contingent-owned equipment system; thus, the uniformed capabilities management solution leverages two enterprise systems to provide an integrated end-to-end solution.

55. The uniformed capabilities management solution as deployed lays the foundation for the force management solution. The evolution of the uniformed capabilities management solution to accommodate force planning and uniformed capabilities management needs will be guided by the following: troop strength reporting and payment requirements defined by the Uniformed Capabilities Support Division in the Department of Operational Support; needs of military and police entities across the Secretariat; management of pledges (capabilities and readiness evaluation); criteria for the selection of troop- and police-contributing countries; performance evaluation of troop- and police-contributing countries; assessment and advisory visits; predeployment visits; and force deployment schedules. A key priority is to standardize the workflow in field missions for troop strength reporting to facilitate troop cost reimbursements, while also standardizing the approach for preparing and maintaining force deployment schedules to fill the current gaps in the holistic management of uniformed capabilities.

56. The evolution of the scope of the uniformed capabilities management solution reflects the benefits of process re-engineering that precedes software development. Such process re-engineering, and the accompanying standardization, are critical to ensure an optimal solution in the absence of standard software that already incorporates best practices. The development and deployment of additional uniformed capabilities management functionality during 2020 will also have to factor in the impending upgrade to the Siebel software towards the end of 2019 and in early 2020.

## **G. Conference and event management**

57. The conference and event management solution includes the entire life cycle of conferences and events, including conference and event planning, requests and pre-session activities, resource allocation, participant management, event execution and follow-up, cost recovery and accounting, and master data management. All or many of those activities take place for the tens of thousands of conferences and events hosted annually by the United Nations and comprise both calendar and non-calendar events. The activities have been managed through multiple information technology systems and manual processes that vary from location to location.

58. The conference and event management solution seeks to provide a single, integrated suite of applications to be used by all conference organizers to perform the associated processes. Since there is no suitable SAP module or any single solution in the market to cover the Organization's requirements, the agreed-upon solution will bring together selected non-SAP applications that integrate with one another and with the Umoja SAP software.

59. The first conference and event management solution to be implemented is the meeting participant management module, which uses an open-source platform called Indico, developed by the European Organization for Nuclear Research (CERN) and configured by the United Nations Office at Geneva to meet the Organization's requirements. Indico was endorsed by the Architecture Review Board of the Office of Information and Communications Technology as an enterprise solution, subject to certain enhancements, and was embraced by Umoja as part of the Umoja suite of solutions. Therefore, the Indico infrastructure is being relocated from Geneva to the enterprise data centres to be managed along with all the other Umoja infrastructure components.

60. The meeting participant management module enables conference managers to create a conference or event website with associated workflows, including communication, which is uniquely branded and designed to facilitate user-facing self-registration and subsequent conference badge printing. The module is accessible

from any mobile device, supports online event registration for participants and streamlines access to premises, including through passes on mobile devices. It provides easy access to important event documentation and streamlines communications between event organizers and participants before, during and after events for the thousands of participants in over 33,500 United Nations conferences and events every year.

61. Over 50 United Nations entities have adopted the meeting participant management module globally, including the United Nations Office at Geneva, the United Nations Conference on Trade and Development, the Department of Economic and Social Affairs, UNEP, the Economic and Social Commission for Western Asia, the Department of Operational Support, the United Nations Entity for Gender Equality and the Empowerment of Women (UN-Women) and the World Health Organization. Between March 2016 and August 2019, 2,419 conferences and events with 18,145 meetings were held, totalling 332,771 participant registrations and 175,646 printed badges. Indico has confirmed its capability to handle even the largest United Nations conferences, such as the sixty-third session of the Commission on the Status of Women, having registered 9,227 participants.

62. To deliver the end-to-end integrated solution for conference and event management, especially for meetings management, gMeets has been endorsed as the preferred solution. gMeets is a suite of products managed and maintained by the Department for General Assembly and Conference Management and includes products such as One-Stop Shop. It has been evaluated and enhanced to ensure that it meets the technical standards prescribed by the Office of Information and Communications Technology. Furthermore, expanding on its initial integration with Indico, additional integration with iNeed for service management and with Umoja for billing, cost recovery and property management, among other things, is being carefully evaluated to explore the business benefits of such integration and balancing them with the change management impact for Member States arising from any system changes.

## **H. Mobile platform**

63. Although it was not planned in the original scope, Umoja has started to leverage an SAP software framework, Fiori, as part of its continuous improvement programme to enhance user adoption and to align its technology road map with that of SAP to ensure that the technical platforms are kept up to date. SAP Fiori applications provide a better user experience, and the framework would enable Umoja to provide a consistent user interface (look and feel) across functional pillars and across devices – desktops, laptops, tablets and smartphones – with an overall simplification of functions.

64. Umoja Mobile (see figure III) was launched in July 2019, leveraging SAP Fiori, with three applications, for leave request, leave approval and pay statements. The leave applications give staff and managers the flexibility to take leave-related actions quickly and conveniently, including on mobile devices. They can also track the status of submitted requests and check leave balances. Staff can use the pay statement application to easily view and print monthly pay statements.



Figure III  
Umoja Mobile



65. Umoja Mobile was initially rolled out to the Economic and Social Commission for Asia and the Pacific, the Department of Economic and Social Affairs, the Office of the Special Coordinator for the Middle East Peace Process, the United Nations Truce Supervision Organization and the United Nations Office on Drugs and Crime and its regional office in East Africa; those entities were selected as a diverse sample to validate the performance of the solution. In October 2019, it will be deployed to United Nations Headquarters, offices away from Headquarters, the regional commissions and the International Residual Mechanism for Criminal Tribunals and then will be extended to the remaining field missions by the first quarter of 2020. The scope of Umoja Mobile will also be gradually extended to replace all employee and manager self-service functionalities.

66. The Fiori framework has also been used to build the strategic management application and will be leveraged whenever the project resorts to custom development to meet unique United Nations requirements. The Fiori framework also underpins the migration of the status of contributions portal to Umoja, which will mark the first Umoja application to be accessed directly by Member States in early 2020.

## I. Delegation of authority

67. Umoja has been one of the key enablers of the new system of delegation of authority introduced by the Secretary-General on 1 January 2019. To implement the new delegation of authority and accompanying accountability framework, the project has supported: (a) the mapping of Umoja roles through specific delegated authority; (b) the development of new management dashboards; and (c) the extraction of data from Umoja to support the monitoring of delegation of authority by the Business Transformation and Accountability Division in the Department of Management Strategy, Policy and Compliance. This work has been undertaken in collaboration with the Business Transformation and Accountability Division, the Department of Operational Support and the Office of Information and Communications Technology while applying the lessons learned from various Umoja deployments.

68. Guidance documentation for heads of entities and end users was updated, ensuring that all roles requiring delegated authority are clearly identified, including any prerequisites that must be satisfied to assign such roles. The accountability framework that supports the new system of delegation of authority encompasses 16 key performance indicators, most of which are based on data extracted from Umoja and Inspira. Additional work will be undertaken to enrich and align Umoja reports and dashboards with the key performance indicators of the accountability framework as the framework evolves on the basis of feedback from clients and other sources.

69. Umoja data has been invaluable to the Business Transformation and Accountability Division in exercising its monitoring functions and to the Department of Operational Support for providing operational support to the various entities. Additional projects are envisaged to further enhance and integrate the solutions that support delegation of authority and to provide more integrated end-to-end monitoring.

## **J. Infrastructure upgrades**

70. The growing functional complexity of the Umoja solution is also reflected in the increased technical complexity of the Umoja infrastructure. All Umoja SAP systems, which form the core of the Umoja system, are hosted in the enterprise data centre in Valencia, Spain, with the disaster recovery site in Brindisi, Italy. For disaster recovery readiness, Umoja transactions are replicated live, as they change, from the Valencia enterprise data centre to the Brindisi data centre.

71. SAP systems are groupings of multiple servers which cover logically consistent sets of business functions, such as ERP Central Component and Supplier Relationship Management. Each such SAP system used by Umoja requires a dedicated set of servers, typically a minimum of four in a standard architecture, the maximum being guided by user and data loads on the system; for instance, the Umoja ERP Central Component comprises 12 servers. A total of 58 servers are used for all the Umoja SAP systems.

72. In addition to the “production”<sup>1</sup> environment, comprising the primary site in Valencia and the secondary site in Brindisi, the Umoja project requires several non-production environments for different purposes. A development environment is used for software developers to configure the system, build and test software solutions and fix bugs. A quality assurance environment is used for end-to-end product integration testing once the configuration and code changes have been migrated from the development environment. A pre-production environment is then used for user verification testing as a final sign-off before the changes are migrated to production. Additionally, the infrastructure includes a “training environment” to support end-user training programmes, and a sandbox for certain experimental projects, especially those involving new technology or inherently risky solutions.

73. From the third quarter of 2018 through August 2019, the entire Umoja infrastructure was upgraded, which entailed the replacement of hardware approaching end of life with new, more sophisticated hardware. It was the first major upgrade of Umoja hardware since the first deployment of Umoja and was a very complex project requiring meticulous planning and execution to minimize risks and avoid disruptions to operations.

74. Joint teams from Umoja and the Office of Information and Communications Technology delivered a total of 348 system migrations staggered over more than six months. These complex migrations at times required 60 people from 14 teams in four locations globally, besides online support from multiple vendors. The migration operations typically took 10 hours each, with the largest and most critical one taking 50 hours of non-stop work. Like any initiatives of this degree of complexity, the hardware upgrade had its share of challenges, including a significant problem with the backup solution that was eventually resolved through a concerted effort from the multiple vendors supporting the infrastructure.

75. As part of the project, the teams also enabled replication of non-production environments in Brindisi, thereby providing better business continuity for development, testing and training activities, which previously had been negatively impacted by infrastructure failures owing to the absence of a secondary site.

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<sup>1</sup> The “production” system usually refers to the system used for live recording of transactions and does not include those used for development or testing, among other things.

76. After some additional work by the end of 2019 to configure “high availability” for the core components of the production environment, a full disaster recovery simulation will be undertaken to confirm that the new infrastructure components are functioning as planned, pursuant to an outstanding recommendation of the Board of Auditors (see A/73/169, para. 117).

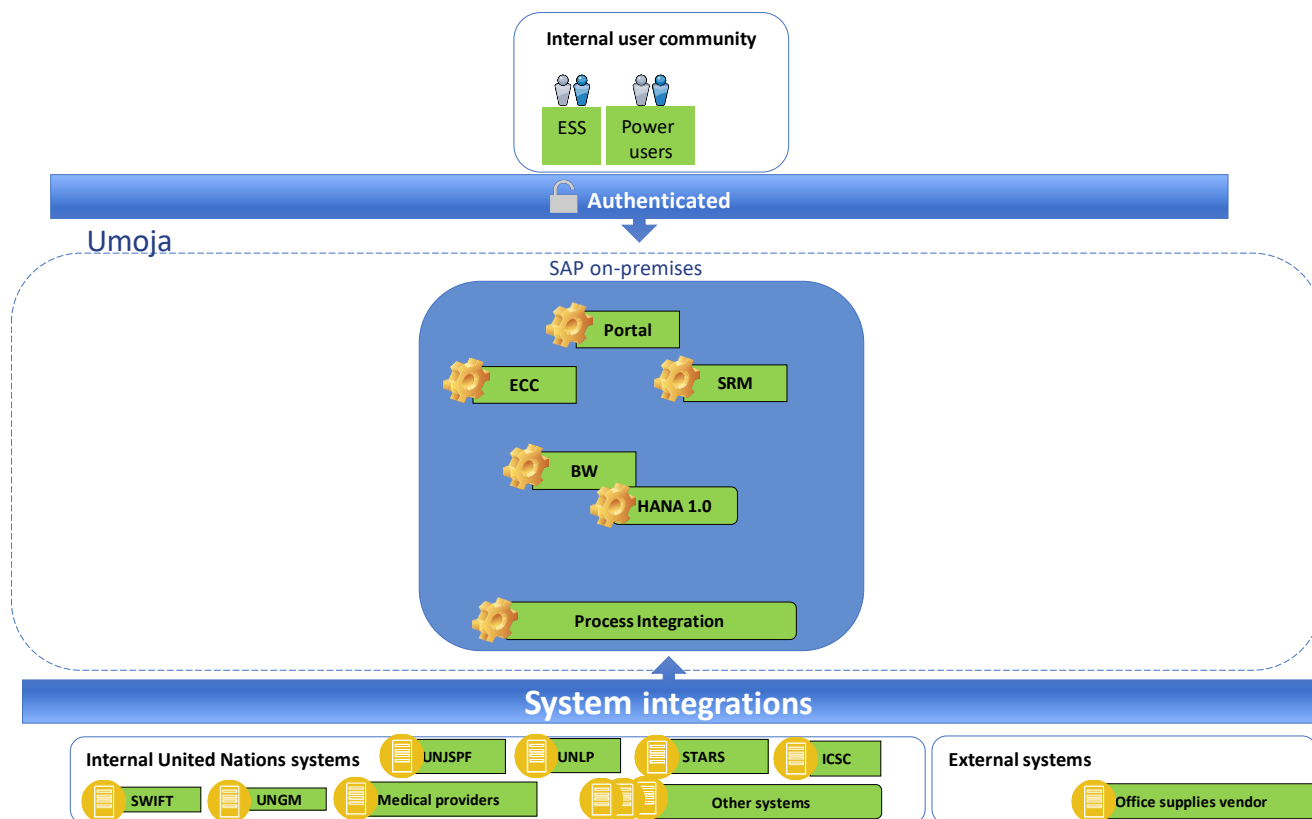
77. Several software upgrades were also undertaken concurrently with hardware upgrades to minimize system downtime, ensure continued support for existing functionalities and enable additional capabilities needed for UE2 solutions. They included the upgrade of 92 Oracle database systems which underpin all Umoja solutions.

78. Another major software upgrade involved SAP HANA, the in-memory database supporting both Umoja business intelligence reporting and the business planning module needed for UE2 budget formulation. Conflicting priorities of successive UE2 deployments had delayed the HANA upgrade in 2018, resulting in instability in the environment and increased risk of disruptions. The Umoja team, on the advice of SAP experts, delivered a series of enhancements to upgrade and stabilize HANA by March 2019.

79. While the aforementioned upgrades were necessary to keep the Umoja system up to date for proper performance and support, UE2 requirements added a new level of technical complexity to the Umoja architecture. That complexity is illustrated through figures IV and V, which reflect the Umoja technical landscape before and after UE2.

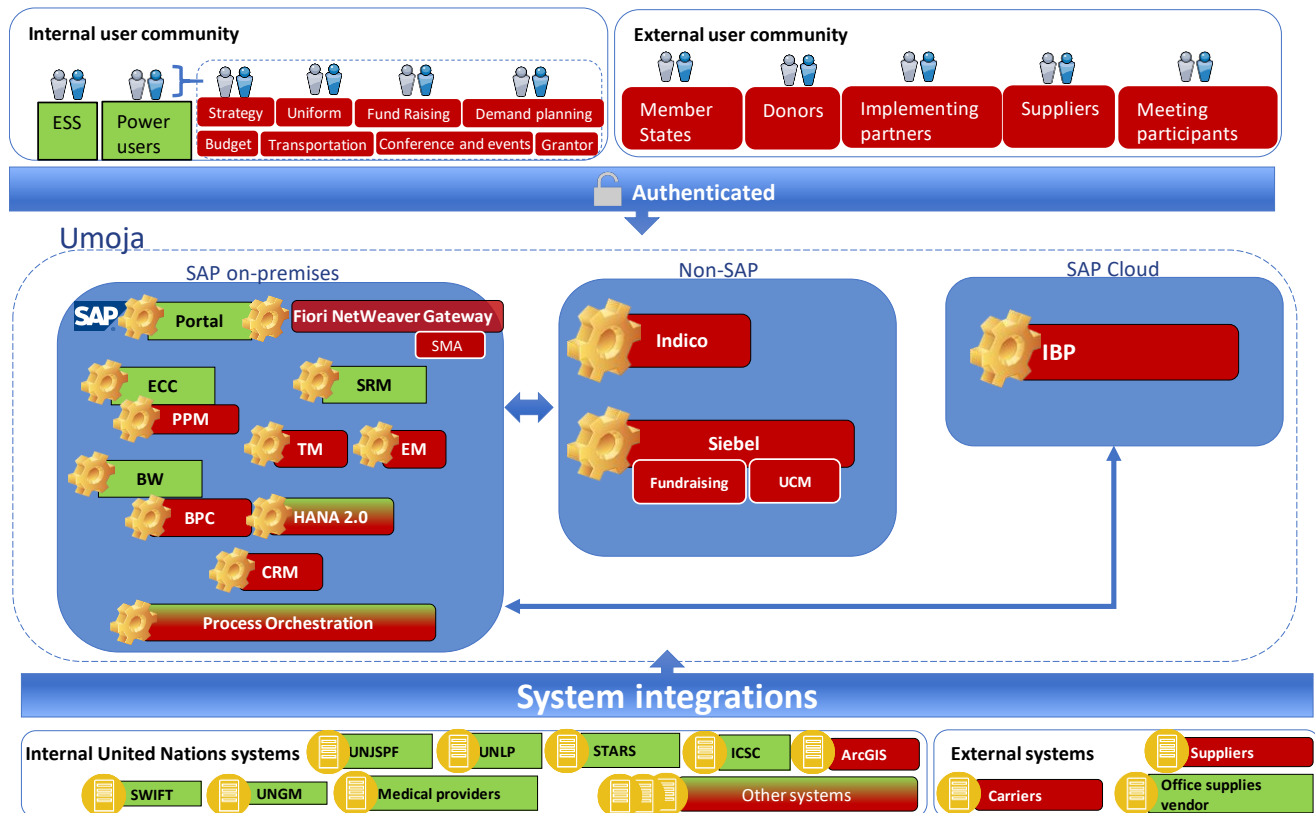
Figure IV

#### Umoja technical landscape before Umoja Extension 2



*Abbreviations:* BW, Business Warehouse; ECC, ERP Central Component; ESS, employee self-service; ICSC, International Civil Service Commission; SRM, Supplier Relationship Management; STARS, settlement of tax advances and reimbursement system; SWIFT, Society for Worldwide Interbank Financial Telecommunication; UNGM, United Nations Global Marketplace; UNJSPF, United Nations Joint Staff Pension Fund; UNLP, United Nations laissez-passier.

Figure V  
Umoja technical landscape after Umoja Extension 2



*Abbreviations:* BW, Business Warehouse; BPC, Business Planning and Consolidation; CRM, Customer Relationship Management; ECC, ERP Central Component; EM, Event Management; ESS, employee self-service; IBP, Integrated Business Planning; ICSC, International Civil Service Commission; PPM, Portfolio and Project Management; SMA, strategic management application; SRM, Supplier Relationship Management; STARS, settlement of tax advances and reimbursement system; SWIFT, Society for Worldwide Interbank Financial Telecommunication; TM, Transportation Management; UCM, uniformed capabilities management; UNGM, United Nations Global Marketplace; UNJSPF, United Nations Joint Staff Pension Fund; UNLP, United Nations laissez-passer.

80. The most significant changes introduced by UE2 can be summarized as follows:

(a) The core Umoja solution now comprises an SAP environment hosted internally within the United Nations (called “SAP on-premises”), an SAP cloud-based system connected securely with the on-premises system, and multiple non-SAP technologies and systems leveraged as part of Umoja and integrated with Umoja;

(b) The SAP on-premises solution now comprises many more SAP systems and technologies than before to support the new functionalities of UE2;

(c) Umoja now integrates with more external non-United Nations systems than before, especially for electronic data interface with vendor systems for supply chain management;

(d) The Umoja user community has become significantly more diverse, with many categories of first-time Umoja users, such as strategic planners, event planners, resource mobilization officers and movement control users, among others;

(e) A new and diverse external Umoja user community has formed with the launch of solutions including implementing partner management, meeting participant management, transportation management and the contributions portal. These diverse

user groups access the Umoja system through secure but different methods involving different technical components.

81. The growth in complexity also compounds the challenges in building and maintaining the development, testing, quality assurance, pre-production, training and sandbox environments. The increasing number of SAP systems and technologies also implies that the Umoja team has to sustain the specialized skills for maintaining those systems.

## **K. Integration and future improvements**

82. The deployment of each UE2 solution into the Umoja landscape has required multiple integrations of new SAP modules with existing modules and/or with non-SAP software. This reflects the added value of an enterprise solution, as such integration eliminates redundant data entry and provides a better, integrated, end-to-end solution for the business. As the functional scope of Umoja continues to broaden into non-traditional areas, opportunities for more complex integrations for Umoja processes are becoming apparent, opening up possibilities for business value that had not been evident when the original scope was defined.

83. For strategic planning, budgeting and performance management, dashboards and integration points will continue to be enhanced to provide a holistic view across multiple frameworks and funding sources, as well as linking results with external data sources, and will be a key contribution to the Secretary-General's efforts to increase transparency and accountability.

84. The implementing partner management solution could also integrate in future with the strategic planning, budgeting and performance management solution, which could then link implementing partner programmes to the high-level strategy of a Secretariat entity and performance monitoring.

85. The functionality for managing appeals and related events in the fundraising solution could potentially link to meetings management, while the finalization of the grant agreement could trigger an integration with the existing Umoja grants management module, thus providing a more complete end-to-end flow of related processes.

86. For supply chain management, relevant Umoja data will be shared in both directions with the cloud-based Integrated Business Planning solution for demand planning and supply network planning and also for transportation management. In subsequent releases, it is envisaged that Integrated Business Planning could also integrate with the strategic planning, budgeting and performance management solution for the purposes of strategic planning. Potential for integration between other supply chain modules and with the uniformed capabilities management solution could be assessed after the deployment of Integrated Business Planning as part of continuous improvements.

87. gMeets could be further integrated with various Umoja finance, human resources and property management modules and with Siebel for service management to improve end-to-end process management.

88. In order to continue to realize the benefits of Umoja, the periodic review of integration opportunities will be undertaken. Continuous improvement plans will be developed after the complexity and benefits of such integrations are analysed, and adjustments made to effect process improvements, as also recommended by the Board of Auditors (see [A/74/153](#), para. 28).

## L. Continuous improvements monitoring programme

89. As reported in 2018 (A/73/389, sect. III.D) and in 2017 (A/72/397, paras. 134–138), a programme for monitoring continuous improvements was created to ensure the sustained realization of Umoja benefits, whereby benefits are directly correlated to the degree at which the system performs at its best, and to ensure that the critical administrative functions of the Organization supported by Umoja processes can be optimally executed to meet operational needs.

90. The monitoring approach is aimed at providing continuous insight into key operational questions, such as the number of activities executed, the number of users involved, the number of tasks needed to complete an activity, the duration and volume of tasks for the activity and performance trends for the activity. The capability to answer these questions is based on intense data analysis.

91. For 43 of the 51 workflows monitored in 2018 and 2019, the number of transactions plateaued at an annual rate of approximately 3.7 million completed transactions. Of the 41 workflows monitored in the past three years, 22 processes are at or near peak efficiency, showing a stable trend over the past years, and they have sustained a duration within the optimum range at less than two days. A total of 16 workflows have improved performance, with 12 experiencing performance improvements by more than 10 per cent.

92. For example, the general ledger document approval rate shows an increase of more than 30 per cent in speed, with more than double the volume. The approval of travel expenses and travel requests for human resources entitlement increased speed by more than 10 per cent for a higher volume of transactions. Beginning in mid-July 2018, a new feature was introduced that allowed travellers meeting specific criteria to confirm the approval of travel expenses in a single click. In addition to workflows monitored in previous years, eight new workflows are included in the monitoring programme that will be measured in future. The 2019 report on the programme for monitoring continuous improvements is the result of analysing all recorded workflow transactions, totalling approximately 52 million records, with an in-depth analysis of the volume, duration, steps and those involved in the process.

### *Change control management*

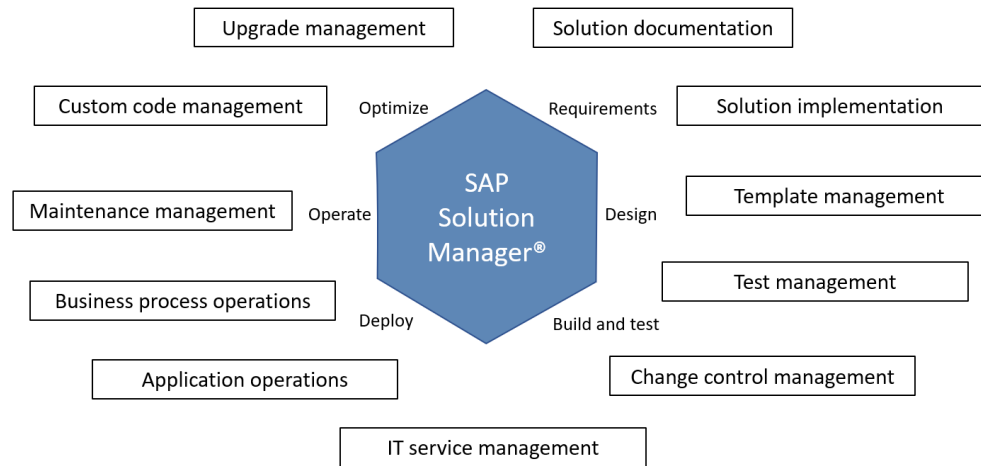
93. As part of the adoption of best practices to improve the management of Umoja software development, the project has introduced a SAP integrated monitoring tool, ChaRM (Change Request Management), to support the complex technical environment and streamline the end-to-end process of managing change requests. The implementation of the integrated monitoring of change requests through ChaRM also addresses an important recommendation of the external auditors. Importantly, it provides greater transparency to the business community about the progress of their change requests and better capability for the project to manage its workplan for software development.

94. ChaRM is part of the SAP Solution Manager, which is a recommended best practice for managing complex SAP landscapes. The roll-out of Solution Manager has been complex, time-consuming and involved significant learning and change management within the project and the extended business teams, given that it replaced many familiar tools. Its adoption was nevertheless necessary for better managing the continuous improvements monitoring programme and the mainstreaming of several important functions that will have to reside outside the core team.

95. Figure VI shows the numerous tools available in Solution Manager, which have manifold benefits for software developers, testers and trainers. It allows for

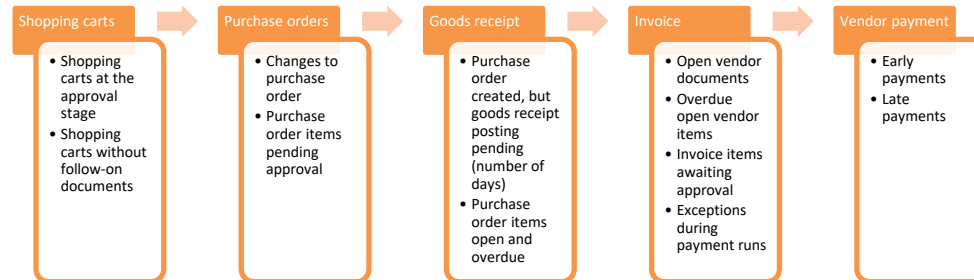
consistency, given that test scripts are executed and defects are tracked in the same system, while the solution documentation and business process operations modules could significantly improve the development and maintenance of training content and the monitoring of process improvements.

Figure VI  
SAP Solution Manager



96. Solution documentation allows the tracking of all business processes implemented in Umoja. Solution Manager allows the monitoring of any business process to discern areas for improvement. Figure VII provides an example.

Figure VII  
SAP Solution Manager: solution documentation – Procure to Pay



97. Solution Manager allows the monitoring of the process from a key performance indicator and alerting perspective, using standard or custom key performance indicators. The work involved to allow Umoja to properly monitor all business processes, however, requires a revisiting of most business processes and migrating them into the Solution Manager tool. This will also provide an opportunity to revisit and review the business processes, as needed, and to seek improved business value by simplifying processes and pursuing additional automation whenever feasible.

## M. Business intelligence

98. By leveraging the organizational changes introduced through the management reform, in collaboration with the Department of Operational Support, the Office of Information and Communications Technology and the Business Transformation and

Accountability Division of the Department of Management Strategy, Policy and Compliance, an updated governance model has been created to gather requirements and build, validate and certify reusable data models. These certified reusable data models will be available for use throughout the Organization under the umbrella name “UNBI Certified Layer.”

99. Since May 2019, the collection, prioritization and scoping of business intelligence and reporting requirements has been mainstreamed to the Business Transformation and Accountability Division. The Division works with the Umoja process owners to consolidate and process requests before passing them to the Umoja team for implementation. This also takes into account the recommendation of the Board of Auditors in its sixth annual progress report to prepare a comprehensive plan for the configuration of business intelligence reporting with the objective of incorporating frequently used reports into the standard corporate reports ([A/72/157](#), para. 42).

100. A major upgrade of the underlying hardware and software (HANA) has now made it possible to provide real-time data updates for reporting. New data models are also available, enabling the creation of critical tools such as a cash flow dashboard, which helps to forecast and monitor the cash situation. As a platform for end-to-end reporting and analytics, HANA contains data from different systems in the UNBI Certified Layer, providing users with Umoja and non-Umoja information required for holistic reporting. It is expected that key data from systems such as Inspira (e-Performance, e-Recruiting and Training) and information from other entities that are not part of Umoja (e.g., the United Nations Development Programme, the United Nations Relief and Works Agency for Palestine Refugees in the Near East, the Office of the United Nations High Commission for Refugees and the United Nations Entity for Gender Equality and the Empowerment of Women) will be brought into HANA to enrich the existing data models and provide additional capabilities for reporting. These developments will enable the business community to leverage Umoja and non-Umoja information more flexibly to meet their strategic and operational needs.

101. Following UE2 deployment, new types of data are now available, which are being modelled and will be merged with the UNBI Certified Layer. The programmatic dashboard is one of the key solutions using information from these data models. Data are being visualized in the dashboards using advanced graphics components in order to facilitate better programme management. These developments address the recommendation of the Board of Auditors that the Administration leverage the improved capability to deliver enriched business intelligence reports, which are able to combine data across functional pillars and applications ([A/74/153](#), para. 112). These enriched reports will enable increased transparency and the ability to publish relevant financial and performance data, as required.

102. The Board of Auditors also noted, in its most recent report, that the upgrade to SAP HANA and integration between SAP Business Warehouse and SAP HANA had been achieved and that this would enable the extraction of data from various SAP modules/applications into HANA, which can then be combined, using the semantic layers, to create analytical models within each functional pillar or across pillars in accordance with business requirements. The management dashboards launched early in 2019 attest to such capabilities. At the same time, the newer modules of Umoja, such as the strategic management application, are also using embedded reporting capabilities to improve the ease of access to relevant information in the appropriate business context. The enrichment of the semantic layers in tandem with UE2 solutions also addresses the Board’s recommendation in its seventh annual progress report ([A/73/169](#), para. 150).



## **IV. Change management**

103. With UE2, the project's change management strategy has shifted from focusing on business process changes and intense transactional training to enabling the strategic management of programme delivery and more informed decision-making with greater availability of data. UE2 enables planning, execution, monitoring and reporting capabilities that have an impact on internal and external users whose familiarity with Umoja is limited mainly to its employee self-service functionality. UE2 also leverages multiple technologies with varying user experiences. Owing to its transformational potential, UE2 also requires much stronger business engagement than ever before.

104. The Business Transformation and Accountability Division is integral to the business transformation vision of the Secretary-General, and its functions are closely linked to UE2. Close collaboration and partnership with the Division began early in 2019, and the change management function, along with several business-led functions, will be increasingly coordinated by the Division.

105. To support the development of processes and structures by which policies are implemented, the Department of Operational Support and its global process improvement advisory group will play a key role in enabling business units to drive a culture of continuous improvement and innovation.

### **A. Business engagement**

106. Learning from earlier deployments, extended business teams were created to increase early user adoption of the UE2 solutions. The extended business team model ensures that business users are engaged early in the requirement-gathering and solution design stages, followed by the testing and training phases of each deployment. During the hyper-care and post-deployment phases, the extended business teams also provide production support. This early and sustained business engagement is critical to continuing to improve adoption and ensure future ownership of the solution. As UE2 continues to stabilize and evolve, it is anticipated that some staff in the extended business teams will become the change champions and global process experts to lead the business changes and improvements in the relevant functional areas.

107. In addition, change management plans will continue to factor into the segmentation of stakeholders and the differentiation of target user groups in order to tailor the plan for each project and deployment. As a major transformation effort, the Umoja project, in close collaboration with the Business Transformation and Accountability Division, extended business teams, Umoja process owners and the Department of Operational Support, will have to strengthen a change agent network by thematic area and/or regional grouping to enable business units to embrace the changes. While these change agents drive informal peer networks for sharing knowledge, well-respected senior managers throughout the Organization will also have to be change ambassadors to visibly demonstrate support for and champion the Umoja solutions underpinning the reform agenda of the Secretary-General.

### **B. Communications**

108. Building on an established visual brand, the Umoja communications team developed a revamped visual identity for the UE2 project phase and the six projects in its scope, as illustrated in figure VIII. In addition, key messages were developed highlighting the benefits of each UE2 solution and stressing the significance of Umoja as a key business transformation enabler for the United Nations.

Figure VIII  
Umoja Extension 2 branding



109. Using the renewed branding, different communications artefacts such as posters, banners and informational flyers were created to raise awareness of UE2 solutions. These were used in a comprehensive communications campaign targeting end users and business stakeholders. In addition, on the basis of the deployment schedule, the communications team collaborated with business and technical teams to prepare and publish articles and broadcasts to support the release of UE2 solutions through various media platforms.

110. The Umoja communications team continues to closely follow the project's developments and implement activities in all areas that contribute to the overall success of Umoja deployments.

### C. Training

111. In section XVII of its resolution [73/279](#), the General Assembly reaffirmed the importance of effective and high-quality training for the successful implementation of Umoja and requested the Secretary-General to continue to ensure that senior managers adopt a comprehensive and sustained approach to training and capacity development in their work units and make certain that all users were properly trained before the deployment of any functionality of the project. In addition, the Assembly requested the Secretary-General to provide further information on the cost-efficiency and effectiveness of the revised training strategy and the new online learning platform.

112. iLearn Umoja, the online learning platform launched with a web portal in September 2018, focuses heavily on continuous self-learning and easily accessible self-contained and modularized training courses and learning materials, including bite-sized videos and a user guide. This approach allows the staff to learn “just in time” to effectively deliver their work using Umoja and not depend on the availability of trainers or travel funding. As at 31 July 2019, there were 59 published UE2 courses across 6 thematic areas and 1,602 enrolments.

113. During the period from 1 August 2018 to 31 July 2019, the number of overall enrolments covering foundation, UE1 and UE2 courses was 21,658. Of those, 90 per cent were for computer-based learning, compared with 74 per cent during the same period covered by the tenth progress report, showing an encouraging trend for self-learning.

114. In section XVII, paragraph 17 of its resolution [73/279](#), the General Assembly requested the Secretary-General to adopt appropriate qualitative and quantitative indicators of achievement to assess the effectiveness of the training received. Beginning in May 2019, Umoja launched a survey methodology requiring learners to complete a two-minute survey after they complete each course. The survey includes multiple choice questions aimed at capturing learners’ feedback. The survey is followed by an optional follow-up questionnaire containing open-ended questions. As at 31 July 2019, 702 participants had completed the survey, 79 per cent had agreed that the course fulfilled the stated learning objectives, 73 per cent had agreed that the course was effective in teaching new skills/concepts and 78 per cent would recommend iLearn Umoja to colleagues.

115. With the implementation of the management reform in January 2019, the Capacity Development and Operational Training Service was established in the Office of Support Operations of the Department of Operational Support. The Service is responsible for assisting clients in building and improving the capacities necessary to integrate resources, accountability and programme delivery in line with priorities. As indicated in the tenth progress report on the enterprise resource planning project ([A/73/389](#), sect. V.C, para. 100), the existing training materials of Umoja foundation and UE1 will be gradually converted and migrated to iLearn Umoja. Ongoing efforts to redesign foundation and UE1 courses into self-paced and blended learning is being led by the Service, starting with courses relating to human resources modules. This transition will be phased and, when complete, will allow for the full integration of Umoja learning within the wider operational support capacity development needs of the business. This will also result in a further increase in the number of learners using iLearn Umoja and a continuing decrease in instructor-led training. This approach is in line with the recommendation of the Board of Auditors to converge all training material on one common platform ([A/74/153](#), para. 115). Furthermore, the training content will continue to integrate policies and processes in order to enhance the accountability framework under which staff work and expedite the onboarding of new staff through comprehensive training delivery and capacity development.

## V. Umoja benefits realization

116. In April 2008, the Secretary-General stressed that the main value of an enterprise resource planning system would be the opportunity to streamline and improve the operations of the entire Organization through process reengineering, the sharing of common data and the implementation of best practices and standards ([A/62/510/Rev.1](#), para. 18). The General Assembly, in section II, paragraph 2, of its resolution [63/262](#), stressed that the system should aim at consolidating the management of all financial, human and physical resources under a single integrated

information system for the entire Organization, including for peacekeeping and field missions. The overall expectation was that a successful enterprise resource planning project could enhance decision-making capability and help the Organization to rethink and refine its entire business strategy.

117. The benefits to be derived from the project were identified at the beginning of the project and were incorporated into the plan for the design and development of each process. The identification of a business owner for each process early in the life of the project and the active participation of relevant business users throughout the development and implementation cycles served to ensure that the final product met business needs and aligned with the desired outcome of the relevant stakeholder in order to ensure the achievement of desired benefits.

118. Umoja is a global and integrated system with state-of-the-art technology and functionality that provides operational (productivity improvements), managerial (improved resource management, decision-making and performance improvements), strategic (planning and programme management), information technology infrastructure (providing business flexibility and increased capabilities) and organizational (supporting organizational change, empowerment and building common visions) benefits. It serves as a catalyst for business transformation and enables and provides the means through which to implement United Nations reforms, as was evident earlier in 2019 when Umoja had enabled the effective and nimble implementation of organizational restructuring to facilitate the implementation of the peace and security, management and development reform measures.

119. Umoja's improved, harmonized and standardized financial, administrative and management processes and the real-time visibility of global and granular information have also supported the greater delegation of authority, promoting a culture of empowerment throughout the Organization for decentralized decision-making.

120. The Board of Auditors, in its sixth annual progress report, emphasized that Umoja remained central to the successful reform and modernization of the administration of the United Nations and had the potential to generate major benefits for the Organization and for Member States ([A/72/157](#)). In its ninth annual report on the enterprise resource planning project, the Advisory Committee on Administrative and Budgetary Questions reiterated its earlier views that "Umoja Extension 2 comprises some of the more strategic functions, including planning and programming, budget formulation and supply chain management, and that the poor coverage of such functions under the previous systems was one of the main factors leading to the decision to shift to an enterprise resource planning system" ([A/72/7/Add.31](#), para. 20).

121. The UE2 solutions deployed to date have modernized administration through process reengineering, streamlining, automation and enhanced reporting. The implementation of these solutions has been a major achievement and a very important step in realizing the original vision of enhancing decision-making capability and helping the Organization to refine its business strategy.

122. In its seventh annual progress report on the implementation of the United Nations enterprise resource planning system, the Board of Auditors appreciated the efforts made by process owners to identify business processes and build a basis for the quantum of benefits realized from year to year ([A/73/169](#), para. 30). The Board also observed that there was scope for improvement in maintaining documentation and preserving the institutional memory of the overall process of benefit realization and that there was no continuity in earmarking resources to monitor that process. The Board further observed that there was no documented plan in place to aid the Secretariat in establishing a clear and transparent record of the realization of qualitative and quantitative Umoja benefits.

123. The Board of Auditors recommended, in its seventh annual progress report, that the Administration should: (a) develop an Umoja benefit realization plan, with an emphasis on improvements resulting from Umoja-based business processes and monitoring of the processes to leverage further benefit realization; (b) maintain adequate documentation supporting the computation of quantitative figures for benefit realization; and (c) identify a coordinating division/unit as a primary process owner of benefit realization responsible for (i) monitoring the process of benefit realization, (ii) engaging stakeholders of the various units and divisions and (iii) continuous monitoring (A/73/169, para. 38).

124. A Umoja benefits realization plan was drafted in 2018 that took into consideration the recommendations of the Board of Auditors mentioned in paragraph 123 above. SAP was also consulted for the best practice for value realization among its customers to ensure that investments yielded the business benefits and accomplish the targeted transformational goals. The benefits realization plan includes management actions required to maintain and execute it through the value realization process. This process calls for a summary of main milestones for each detailed benefit to ensure that all anticipated benefits are effectively established and actively managed. The key activities for initiating, planning, tracking, measuring and evaluating benefits to manage their successful achievement are also described in the benefits realization plan.

125. The recent release of the benefits management framework under “United to Reform” sets an Organization-wide standard for benefit management systems. The structure of identifying, defining, planning, tracking and realizing business benefits, which was followed by Umoja through the development and continuous improvement cycle, as briefly described above and as captured in the Umoja benefits realization plan, is in alignment with this framework. The value realization processes described in the plan are also in close alignment with the framework. Nevertheless, the framework enriches and adds value to this structure by providing a standard benefits management protocol for the Organization to follow and by providing additional rigour to the process to ensure that benefits can be tracked, documented and evaluated in a consistent manner and in alignment with the strategic objectives of United Nations reform. This presents an opportunity for the Umoja project to quickly review the benefits realization plan, to enhance and align it with the new framework and to transfer it to the Business Transformation and Accountability Division for implementation, in keeping with the recommendation of the Board of Auditors in its most recent report that the division responsible commence work on the measurement of benefits realization for all project phases that have been implemented (A/74/153, para. 121).

#### *Total cost of ownership*

126. In section XVII, paragraph 23, of its resolution 73/279, the General Assembly noted the effort made by the Secretary-General to estimate the indirect costs and total cost of ownership of the project, and in that regard requested the Secretary-General to continue to refine the estimates of the total cost of ownership of the project. The Board of Auditors recommended that indirect costs needed to be reassessed by considering a uniform standard cost across all process owners and considering the right baseline for continuous improvements (A/74/153, para. 144). The Board also recommended that estimates for training costs for the period 2019–2030 be included in the total cost of ownership, along with a comprehensive estimate of maintenance costs for the period up to 2030 to present a full picture of the total cost of ownership to the Assembly.

127. The estimates for the total cost of ownership have been updated, as presented in table 2, considering the most recent observations of the Board of Auditors, also to the extent feasible.

Table 2  
**Total cost of ownership (estimated to 2030)**

(United States dollars)

<i>Cost category</i>	<i>Period</i>	<i>Amount</i>
Direct costs (Umoja) <sup>a</sup>	2008–2020	566 385 611
Indirect costs <sup>b</sup>	2013–2019	144 150 496
	2020–2030 <sup>c</sup>	38 693 696
Training costs <sup>d</sup>	2013–2019	83 195 065
	2020–2030	4 221 044
Maintenance costs	2016–2019	79 349 102
	2020–2030	513 771 016
<b>Total</b>	<b>2008–2030</b>	<b>1 429 766 030</b>

<sup>a</sup> Includes resources for 2020 proposed in the present report.

<sup>b</sup> Includes \$11,079,300 for UE2 and \$2,434,700 for continuous improvements during the period August 2018–July 2019.

<sup>c</sup> Estimated at \$10 million for UE2 deployment for 2020 based on the experience from 2019. Continuous improvement for foundation and UE1 for 2020 is estimated to be equal to 2019 and to trend downwards at a slow step rate. Continuous improvement for UE2 is estimated from 2021 onwards. This estimate is subject to a high degree of variation owing to the lack of reliable precedents.

<sup>d</sup> Includes \$1,621,147 for training-related travel for the period 2014–2019.

## VI. Mainstreaming

128. In order to continue to reap the benefits of Umoja, a sustainable business model is needed for managing and implementing continuous improvements and business transformation-related changes. The Board of Auditors has also recommended that the Administration prioritize the preparation and implementation of the Umoja mainstreaming plan (A/74/153, para. 156). While the back-end information technology infrastructure and security type functions have already been mainstreamed into the Office of Information and Communications Technology, including the associated budgets and management of contracts, the business-facing or business-leaning functions for a typical “steady-state” of the enterprise resource planning programme, when its functional scope has been delivered, would include the functions described in this section.

### Business demand management

129. As the experience of Umoja has already shown, the solution will have to be adapted continuously to respond to evolving business needs, on the one hand, and to technological developments, on the other. As the Organization evolves to respond to mandates and implement reforms, Umoja will need to support the change requests triggered by the simplification of policies, the reengineering of business processes and improvements in standard operating procedures, on the basis of priorities set by its governing body. The relevant process, data and technical impacts need to be analysed and the resources and effort required have to be considered during the implementation planning.

130. The Umoja Steering Committee and the process owners set the direction and prioritization of Umoja within the current governance model. Subject to the overriding priority for UE2 established by the General Assembly, demand management will be led by the Management Client Board for foundation and UE1 functionality. After the

deployment and stabilization of UE2, the Management Client Board will lead all demand management for Umoja. The impact analysis of changes will be performed by the relevant business areas, coordinated by the Department of Management Strategy, Policy and Compliance and the Department of Operational Support.

#### **Business requirements analysis and documentation**

131. Once the priorities have been set and the implementation plan completed, the corresponding business requirements and the results of the detailed impact analysis need to be documented. The activity of collecting and developing business requirements should be done through a centralized team that should coordinate with the selected subject matter experts across all functional areas, taking note of the interdependencies of the approved changes.

132. The process owner teams are responsible for the development and coordination of the documentation of business requirements, working closely with the relevant Umoja functional team(s). This model will continue in the future.

#### **Process improvement and standardization**

133. On the basis of new or revised business requirements, the corresponding business processes need to be reviewed and updated to ensure that both process efficiency and standardization are achieved to maximize the benefits offered by Umoja.

134. The process owner teams and the selected subject matter experts are responsible for analysing, designing and implementing the process standardization in their relevant functional areas. Going forward, this function will be coordinated by the Department of Operational Support and its global process improvement advisory group in a phased manner, beginning with the continuous improvements for foundation- and UE1-related processes early in 2020, followed by the UE2-related processes after they are stabilized.

#### **Functional solution design and architecture**

135. The functional solution design has to address the business requirements, process changes and data management impact to ensure that the solutions being designed are the most appropriate and effective for the business needs.

136. The Umoja functional expert teams are performing this function in collaboration with the subject matter experts and will continue to do so in the future.

#### **Technical solution design, development and architecture**

137. All aspects of the technical design and development, based on the approved business requirements, process design and functional design, should be done by a team of technical experts following best practices in solution development and leveraging the appropriate technologies.

138. The Umoja technical experts are performing this function and will continue to do so. Where the technical expertise for any specific technology resides outside the Umoja team, such as for Siebel, Indico or gMeets, this function should continue to reside with such team to ensure the ongoing maintenance of the solution.

#### **Testing and training**

139. The lessons learned from the entire deployment of Umoja over the years have emphasized the criticality of business ownership of the testing and training functions to ensure that the solution meets the business requirements and that the subject matter experts are involved at an early stage for managing changes and increasing user

adoption. Umoja training must also be owned by the business, given that it is the responsibility of the business to keep the training content up to date and aligned with its needs.

140. The process owner teams and the subject matter experts who are responsible for requirements documentation and process design should perform the testing to ensure that the solution developed meets the business needs before it is deployed in production. Going forward, this function will be coordinated by the Department of Operational Support in a phased manner, beginning with the foundation- and UE1-related processes early in 2020, followed by the UE2-related processes after they are stabilized.

### **Deployment**

141. The highly integrated nature of Umoja requires extremely careful planning and execution of deployments of all new Umoja functionalities and improvements. Experience has shown that, if not planned and executed carefully with a strong methodological rigour that the project has established on the basis of the best practice adapted for the Organization, then business disruptions and post-deployment stabilization costs will go up. Deployments should therefore continue to be driven centrally to ensure a coordinated approach to change management and alignment with solution development and delivery.

142. The Umoja team is performing this function in close coordination with the process owner teams. Going forward, the deployments will be coordinated by the Business Transformation and Accountability Division and the Department of Operational Support, in close collaboration with the process owner teams, in a phased manner, beginning with the foundation- and UE1-related deployments early in 2020, followed by the UE2-related deployments by the end of 2020.

### **Support**

143. Lastly, the support functions need to continue to be strengthened to address issues or requests raised by the users to sustain a steady-state. The support function also includes identifying and analysing commonly raised questions or issues and suggesting appropriate business process or system enhancements for effectively addressing users' needs.

144. The Umoja support model continues to operate in three tiers. Tier 1 is the local or centralized information technology help desk for addressing basic questions or standard issues. Tier 2, comprising process experts and the Umoja Support Centre, addresses the issues or requests that are escalated from tier 1. If they are related to software configuration or technical development, then it is escalated to tier 3 in the Umoja team. While there will be no change to the foundation and UE1 support currently in place, UE2 business support, especially for tier 2, will require expertise in the substantive areas such as strategic planning, budgeting and programme management, resource mobilization, implementing partner management and supply chain management, and will have to be strengthened throughout 2020 as the related Umoja solutions take root.

145. The Umoja project team has been coordinating the functions listed above in close collaboration with extended business teams, subject matter experts and process owner teams. Since early in 2019, with the establishment of the Department of Management Strategy, Policy and Compliance and the Department of Operational Support, the business-led functions relating to foundation and UE1 continuous improvements have been undergoing a transition to the appropriate teams in the two departments, while the Department of Operational Support continues to lead the deployment function of supply chain management. Until these functions are fully transitioned and stabilized, the Umoja team will continue to coordinate all the



functions listed above, owing especially to the significant interdependencies among the UE2 projects and their individual and collective impact on the core finance modules of the Umoja solution.

146. As a part of the end-state business model, a central team consisting of policy, process, data and system experts in all functional areas covered by Umoja must be established. This team will focus on continuous improvements to ensure that Umoja continues to bring business value and to assist the business units in operations review and the enhancement of business models. This team will also focus on change management, which is one of the most critical success factors in business transformation and will ensure that Umoja remains “fit for purpose”. At a more strategic level, the Management Client Board will ensure that business requirements and priorities are channelled to the Umoja team for implementation.

147. The lessons learned from the experiences of deploying and stabilizing foundation and UE1, as well as the recommendations by the external experts who were engaged in 2018 for the organization readiness review, confirm that mainstreaming takes time to ensure a smooth transition. The functions also need to be properly staffed and funded for long-term sustainability. For example, while the functions in the earlier implementations of Umoja have been mainstreamed into various business groups, some are not yet properly funded and are therefore affecting day-to-day operations and leading to an increased backlog of business-owned activities.

148. The mainstreaming of UE2 solutions, which involves more substantive, strategic and programme-driven functions, will require even greater planning and a longer transition period because the functions are broader and touch internal and external user groups that are relatively new to the Umoja solution. While the involvement of extended business teams in the early stages of various UE2 projects has helped early user adoption and change management, the effort is not at its optimal level owing to a lack of adequate resources and the many parallel activities that are being supported by the various resource groups.

### **Funding**

149. As mentioned earlier, the ongoing realization of benefits will require properly resourced and funded functions for the steady-state. In April 2008, the Secretary-General proposed that the financing of the enterprise resource planning solution should not be restricted solely to the regular budget, given that it encompasses all administrative activities of the Organization. It was proposed that it be financed from among the main sources of funds, namely, 15 per cent from the regular budget, 62 per cent from the peacekeeping support account and 23 per cent from extrabudgetary resources, on the basis of the distribution of the estimated resources for 2008–2009. In section II, paragraph 23, of its resolution [63/262](#), the General Assembly endorsed the proposed cost-sharing arrangement.

150. Owing to the diversity of the cost elements for a steady-state enterprise resource planning system, as well as the divergent drivers for some of the cost elements, the cost-sharing arrangement would have to be revisited and modified to a hybrid model using a weighted combination of budget/expenditure and headcount, to be implemented beginning from the 2021 budget period. The methodology and the rationale will be presented as part of the 2021 proposed programme budget after also considering the implications of the recently acquired cloud-based subscription software.

## VII. Risk management

151. In section XVII, paragraph 21, of its resolution [73/279](#), the General Assembly stressed the importance of ensuring that lessons learned from previous deployments continued to be fully taken into account in preparing future roll-outs to ensure smoother deployments and avoid extensive stabilization efforts that would result in further delays, cost escalation and other risks. In its eighth annual progress report ([A/74/153](#), para. 50), the Board of Auditors also recommended that the Administration continuously review the risks to achieving the full deployment of Umoja and implement appropriate mitigation strategies.

152. UE2 solutions continue to be deployed in a phased approach to ensure appropriate business readiness and change management, on the basis of lessons learned and as reiterated by an independent consulting firm in 2018. This approach is also in line with the Board's recommendation to review and address the identified business readiness gaps in a timely manner ([A/74/153](#), para. 52).

153. As mentioned earlier, Umoja's technical complexity increased dramatically with UE2 solutions, several technical infrastructure upgrades and the launch of Umoja Mobile. To mitigate these risks, the project continued to up-skill and cross-train key personnel, utilized specialized expertise from the software vendor as needed and piloted new user experiences in a phased approach with entities containing diverse user bases.

154. The end of life of the Umoja hardware infrastructure required a full replacement of hundreds of servers supporting the current Umoja SAP system landscape. The associated hardware and software upgrades were meticulously planned and successfully coordinated with multiple global, technical teams to ensure the replacement of the hardware before obsolescence.

155. As Umoja continues to deliver UE2 functionality, process owner teams supporting multiple aspects of Umoja continue to be strained by overlapping responsibilities for supporting current functionality, triaging production support requests and supporting UE2 deployments. The prioritization of key business initiatives, not in the original scope, continues to stretch the timelines for some UE2 deployments where business involvement is needed to address new policies or procedures or validate components of the solution. The Umoja project continues its close collaboration with business to discuss these priorities and associated impact on scope and timelines. Concerted efforts in change management will also need to be increased as the user base continues to expand beyond the traditional enterprise resource planning users.

## VIII. Resource requirements for 2020

156. The approved budget for the project through the end of 2019 is \$543,741,600, including \$104,764,800 for 2018–2019. Against the approved budget of \$55,136,400 for 2019, the projected expenditure will be \$42,402,410, leaving an unused balance of \$12,733,990 that can be carried forward towards the resource requirements for 2020. The details are presented in table 3.

**Table 3**  
**Resource requirements for 2019 and 2020**

(Thousands of United States dollars)

	<i>2019 approved budget</i>	<i>2019 expenditure (as at 1 October 2019)</i>	<i>2019 projected expenditure (as at 31 December 2019)</i>	<i>2019 projected unused balance (carry forward)</i>	<i>2020 proposed resource requirements</i>	<i>2020 additional resource requirements</i>
Posts	12 500.0	6 955.6	10 992.4	1 507.6	12 426.2	10 918.6
Other staff costs	8 472.0	4 338.9	6 502.2	1 969.8	3 607.9	1 638.1
Consultants	800.0	122.0	317.0	483.0	404.7	(78.3)
Travel of staff	725.0	414.9	575.0	150.0	452.4	302.4
Contractual services	30 205.0	12 887.4	21 934.5	8 270.5	16 381.9	8 111.4
General operating expenses	2 184.4	1 463.7	1 924.4	260.0	1 951.6	1 691.6
Supplies and materials	100.0	91.6	111.6	(11.6)	112.1	123.7
Furniture and equipment	150.0	31.7	45.3	104.7	41.2	(63.5)
Grants and contributions	–	100.6	–	–	–	–
<b>Total</b>	<b>55 136.4</b>	<b>26 406.5</b>	<b>42 402.4</b>	<b>12 734.0</b>	<b>35 378.0</b>	<b>22 644.0</b>

157. The unused balance at the end of 2019, estimated at \$12.7 million, reflects the trend since 2017 of reducing costs through the continuing reorganization of posts and adjustment of the portfolio of contractors to reduce both the numbers and the hourly rates, the continuing decision to train staff and avoid the use of a systems integrator for UE2 solutions, the deep discounts negotiated for the new cloud-based software and the expenditure deferred owing to the delay in the acquisition of integrated business planning software and the contracting of the related professional services.

158. The justifications for the \$35.4 million proposed for 2020 are outlined in the following paragraphs.

#### *Posts and other staff costs*

159. In section XVII of its resolution [73/279](#), the General Assembly reiterated its earlier request to the Secretary-General to strengthen in-house capacity and expertise on the enterprise resource planning system, ensure knowledge retention and reduce dependency on contractual services. Since 2016, the project has been organizing specialized training for its staff to ensure institutional capacity to support Umoja. From mid-2016 through the end of 2019, nearly 960 technical training courses (e.g., on-site workshops, e-learning, instructor-led courses and virtual lectures) costing approximately \$3.4 million will have been taken by the project staff using customized SAP-curriculum training paths designed for each Umoja expert based on need and specific technology components. The investment in training has eliminated the need for a systems integrator vendor for building all the UE2 solutions and reduced the costs associated with knowledge transfer from contractors.

160. The project has also been reprofiling its resources since 2016 with a view to ensuring the right mix of skills and a suitable grade structure that has entailed the abolishment of 45 positions (4 D-1, 11 P-5, 19 P-4, 4 P-3 and 7 General Service (Other level)) and adding 27 relatively junior positions (2 P-4, 11 P-3, 6 P-2 and 8 General Service (Principal level)) to create a more balanced structure suitable for building and sustaining capacity.

161. The estimated requirement of \$12,426,200 for 2020 will provide for salary and common staff costs for 72 posts, including 1 Assistant Secretary-General, 1 D-2, 3 D-1, 10 P-5, 20 P-4, 16 P-3, 7 P-2, 9 General Service (Principal level) and 5 General

Service (Other level). This structure, presented in annex IV, reflects a continuation of the structure finalized in 2019 over a three-year period from 2016 and is critical for implementing the directive from the General Assembly to create sustainable capacity to support the solution and provide the appropriate leadership for the project until the solution is fully stabilized for steady-state operation.

162. As at 1 October 2019, 60 posts were encumbered, 2 were blocked for staff on internal assignment and 9 were under recruitment. In addition, the estimated requirement does not include any resources for the position of the Assistant Secretary-General, which has been discharged by the Controller since February 2019.

163. During 2020, the estimated requirements for other staff costs will total \$3,607,900, reflecting a provision for 23 temporary positions for the project. The exact number and mix of those positions will be adjusted during 2020 on the basis of evolving needs and the availability of expertise. The overall estimate is based on the discontinuation of 13 temporary positions by the end of 2019 as a part of the overall downsizing of the project resources.

#### *Consultants and experts, and contractual services*

164. As the technical landscape has become more complex and a systems integrator (specialist vendor) is no longer utilized, the core team is being complemented by a mix of consultants with specialized expertise and contractual services through vendors. A provision of \$404,700 will be required for the continued services of four full-time consultants during 2020, two of whom are Siebel developers based with the Office of Information and Communications Technology team in Bangkok. A total of 6 of the 10 consultants used during 2019 will be discontinued by the end of 2019, given that the project team will be able to assimilate the workload into their workplans.

165. Projected resource requirements for 2020 of \$16,381,900 for contractual services cover a variety of products and specialist services. It includes \$557,000 for a small team from the erstwhile systems integrator, providing break-fix support for foundation and UE1. The provision of \$1,700,000 would cover the cost of a premium support service for resolving product-related problems, including performance issues, provided by the software vendor, SAP. A total of \$1,500,000 is budgeted for additional licences to accommodate growth in the use of the numerous UE2 components. Given that the project has taken over most of the UE2 development, it relies on two vendors to provide a team of experienced developers to complement the project staff, at a cost of \$7,734,900, and such individuals are managed by the Umoja technical experts. In addition, \$4,140,000 is the anticipated requirement for specialized SAP expertise for the integrated business planning cloud-based software development, including the integration with the on-premise Umoja solution. Overall, approximately 35 such personnel would be assisting the Umoja team in the first half of 2020, tapering to about 25 by the end of the year. In 2015/16, that number was approximately 110, and the average during 2019 was about 44.

166. An estimated requirement of \$750,000 is included within contractual services for 2020 for SAP technical training for the continued development of the SAP technical skills of the project's core staff. This continued investment in the skills of the core team is critical to sustaining the solution, given that the Organization is no longer using a systems integrator vendor who typically provides skilled personnel. The core team has to be current in its knowledge and skills because technology tends to evolve quickly, and the vendor will be constantly upgrading its software.

#### *Travel and training of project staff*

167. As mentioned earlier, UE2 solutions comprise a wide array of new functionalities and involve a very diverse group of internal and external users, as shown in figure V.

Change management, on-site hypercare support, training for trainers and briefings for external groups, among other things, require the travel of functional experts, sometimes also backed by techno-functional expertise. Such engagement is critical for ensuring proper user adoption and mitigating post-deployment challenges.

168. The requirement of \$452,400 reflects a requirement of \$113,200 towards the projected demand for the travel of process experts during 2020 and \$339,200 for the travel of project staff for specialized SAP training.

#### *General operating expenses*

169. Estimated requirements for general operating expenses for 2020 in the amount of \$1,951,600 will provide for rent (\$1,590,000 based on \$15,900 per person for 100 persons), service-level agreements for computer maintenance, including network accounts and network ports (\$167,500), and communication charges (\$194,100), including VPN and Citrix.

#### *Supplies and materials, and furniture and equipment*

170. The estimated requirements of \$112,100 for office supplies and materials includes the cost of communication materials such as posters and brochures that are key ingredients for change management. The provision of \$41,200 for furniture and equipment during 2020 will include the cost of replacing 28 laptops to ensure that the software development team has reliable and powerful computers to do their work. That provision will also cover videoconferencing equipment that is critical for the innumerable meetings and workshops that are integral to the team's work and for the sustained engagement of the business.

171. Taking into account the approved appropriation to the end of 2019 and the resources proposed for 2020, the estimated cumulative budget through the end of 2020 is shown in table 4.

Table 4  
**Cumulative resource requirements, 2008–2020**

(Thousands of United States dollars)

	<i>2008–2019 approved</i>	<i>2020 additional resource requirements</i>	<i>Total resource requirements (2008–2020)</i>
Posts	127 722.9	10 918.6	138 641.5
Other staff costs	64 897.1	1 638.1	66 535.2
Consultants	3 553.5	(78.3)	3 475.2
Travel of staff	7 810.8	302.4	8 113.2
Contractual services	264 402.4	8 111.4	272 513.8
General operating expenses	27 044.8	1 691.6	28 736.4
Supplies and materials	984.8	123.7	1 108.5
Furniture and equipment	47 325.3	(63.5)	47 261.8
<b>Total</b>	<b>543 741.6</b>	<b>22 644.0</b>	<b>566 385.6</b>

## IX. Summary of resource requirements and request for action by the General Assembly

### A. Proposed financing of projected resource requirements for 2020

172. In its resolution 63/262, the General Assembly endorsed the cost-sharing arrangement for the financing of the enterprise resource planning project proposed by the Secretary-General in paragraph 79 of his report on enterprise systems for the United Nations Secretariat worldwide (A/62/510/Rev.1). The approved cost-sharing arrangement is 15 per cent from the regular budget, 62 per cent from the support account for peacekeeping operations and 23 per cent from the special accounts for programme support costs.

173. The Secretary-General requests that the resource requirements necessary to complete the planned activities to be undertaken during 2020 be approved by the General Assembly. The proposed financing of the requirements would be apportioned in accordance with the approved cost-sharing arrangement, as illustrated in table 5.

Table 5  
Summary of proposed resource requirements for 2020, by source of funding

(Thousands of United States dollars)

<i>Source of funds</i>	<i>2008–2019</i>	<i>2008–2020</i>	<i>Proposed resources for 2020</i>	<i>Percentage</i>
Regular budget	81 372.7	84 769.3	3 396.6	15
Support account for peacekeeping operations	337 257.3	351 296.6	14 039.3	62
Extrabudgetary	125 111.6	130 319.7	5 208.1	23
<b>Total</b>	<b>543 741.6</b>	<b>566 385.6</b>	<b>22 644.0</b>	<b>100</b>

### B. Recommended actions to be taken by the General Assembly

174. The General Assembly is requested:

(a) To take note of the progress made in the implementation of Umoja since the issuance of the tenth progress report;

(b) To approve the resource requirements of \$22,644,000 for the project for 2020;

*Programme budget*

(c) To approve an amount of \$3,396,600 under the programme budget for 2020 under component 1, Enterprise resource planning project, of subsection 29A, Department of Management Strategy, Policy and Compliance, representing the regular budget share for the Umoja project costs for 2020;

(d) To revise the appropriation under the proposed programme budget for 2020 by reducing the provisions under subsection 29A, Department of Management Strategy, Policy and Compliance, by an amount of \$1,069,100;

*Support account for peacekeeping operations*

(e) To note that resource requirements in the amount of \$14,039,300 will be included in the subsequent requirements for the support account for peacekeeping operations for the financial period from 1 July 2020 to 30 June 2021;

*Extrabudgetary resources*

(f) **To note that requirements in the amount of \$5,208,100 will be funded from extrabudgetary resources in the financial year 2020.**

## Annex I

## Umoja deployment in 2018 and 2019

## 2018

<p>Q1 <b>INTERNATIONAL CIVIL SERVICE COMMISSION – PHASE 3</b> Education Grant</p> <p><b>DEPARTMENT OF PUBLIC INFORMATION – Migration to Umoja</b> UNDP administered United Nations Information Centre staff in Latin America and Asia</p> <p><b>CONFERENCE AND EVENT MANAGEMENT</b> One-Stop-Shop – Headquarters</p>	<p>Q2 <b>DEPARTMENT OF SAFETY &amp; SECURITY – Migration to Umoja</b> UNDP-administered professional staff</p> <p><b>Umoja Travel – CLUSTER 5</b> National staff, individual uniformed personnel, consultants and individual contractors, United Nations Volunteers, and all other non-staff</p>	<p>Q3 <b>INFRASTRUCTURE UPGRADES</b> HANA upgrade – infrastructure refresh to align HANA technology with UE2 application requirements</p> <p><b>DEPARTMENT OF PUBLIC INFORMATION – MIGRATION TO UMOJA</b> UNDP administered United Nations information centre staff in Africa, Central Asia and Middle East</p> <p><b>SUPPLIER RELATIONSHIP MANAGEMENT AND PORTAL UPGRADE</b></p> <p><b>REAL ESTATE SPACE MANAGEMENT</b> Headquarters, offices away from Headquarters and regional commissions</p> <p><b>FUNDRAISING &amp; DONOR RELATIONSHIP MANAGEMENT</b> Donor relationship management – Cluster 1</p>	<p>Q4 <b>CONFERENCE AND EVENT MANAGEMENT</b> Meeting Participant Management</p> <p><b>STRATEGIC PLANNING, BUDGETING &amp; PERFORMANCE MANAGEMENT</b> Strategic Management Application (Product Launch of RBB – PK and Annual Results Framework – RB)</p> <p>Budgeting Module for PK Entities (Product Launch of 16 Forms)</p> <p><b>IMPLEMENTING PARTNER MANAGEMENT</b> Grantor programme management, management of implementing partner applications, agreements and financials – Release 1 &amp; Cluster 1</p>
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## 2019

<p>Q1 <b>STRATEGIC PLANNING, BUDGETING &amp; PERFORMANCE MANAGEMENT</b> Budgeting Module for RB Entities</p> <p>Portfolio and Project Management Module – Release 1 Pilot Entities</p> <p>Recosting Module – Release 1</p> <p><b>SUPPLY CHAIN MANAGEMENT</b> Transportation Management – Release 1</p> <p><b>UNIFORMED CAPABILITIES MANAGEMENT</b> Statements of Unit Requirements &amp; eCOE Enhancements – Release 1</p> <p><b>REFORM IMPLEMENTATION</b> Management Reform, Peace and Security Reform, and Development Reform</p> <p><b>INFRASTRUCTURE UPGRADES</b> HANA upgrade and enhancements</p>	<p>Q2 <b>STRATEGIC PLANNING, BUDGETING &amp; PERFORMANCE MANAGEMENT</b> Strategic Management Application for RB Entities</p> <p>Strategic Management Application for PK Entities</p>	<p>Q3 <b>STRATEGIC PLANNING, BUDGETING &amp; PERFORMANCE MANAGEMENT</b> Performance Monitoring Application for PK Entities Budgeting Module for PK Entities</p> <p><b>UNIFORMED CAPABILITIES MANAGEMENT</b> Memorandum of Understanding, Claims, Calculations, and Payments for COE and Non-VR Claims, Troop Strength Reporting and Payment – Release 2</p> <p><b>UMOJA MOBILE</b> Leave Request, Leave Approval and Pay Statements Applications – Release 1 for Cluster 1</p> <p><b>IMPLEMENTING PARTNER MANAGEMENT</b> Release 1.1 &amp; Business Intelligence Reporting</p> <p><b>INFRASTRUCTURE UPGRADES</b> Migration to New Infrastructure Oracle Database Upgrade</p>	<p>Q4 <b>STRATEGIC PLANNING, BUDGETING &amp; PERFORMANCE MANAGEMENT</b> Performance Monitoring Dashboard for Selected PK Missions</p> <p>Recosting Module – Release 2</p> <p><b>CONFERENCE AND EVENT MANAGEMENT</b> Indico Infrastructure Migration from Geneva to Brindisi</p> <p><b>IMPLEMENTING PARTNER MANAGEMENT</b> Release 1.2 &amp; Cluster 2</p> <p><b>UMOJA MOBILE</b> Release 1 for Cluster 2</p> <p><b>SUPPLY CHAIN MANAGEMENT</b> Transportation Management – Release 2</p> <p><b>INFRASTRUCTURE UPGRADES</b> High Availability of Core Systems</p>
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**Annex II**

**Umoja deployment in 2020**

2020

<p>Q1</p> <p><b>STRATEGIC PLANNING, BUDGETING &amp; PERFORMANCE MANAGEMENT</b> Performance Monitoring for RB Entities</p> <p><b>CONTRIBUTIONS PORTAL</b> Status of Contributions, for Member States</p> <p><b>UMOJA MOBILE</b> Cluster 3</p>	<p>Q2</p> <p><b>STRATEGIC PLANNING, BUDGETING &amp; PERFORMANCE MANAGEMENT</b> Strategic Management Application and Dashboard – Continuous Improvements</p> <p>Portfolio and Project Management Module – Release 2</p> <p><b>CONFERENCE AND EVENT MANAGEMENT</b> Indico 2.0 Upgrade</p>	<p>Q3</p> <p><b>SUPPLY CHAIN MANAGEMENT</b> Demand Planning &amp; Supply Network Planning</p> <p><b>UNIFORMED CAPABILITIES MANAGEMENT</b> COE 2020 Working Group Implementation</p> <p><b>UMOJA MOBILE</b> ESS Upgrade – Release 1</p>	<p>Q4</p> <p><b>STRATEGIC PLANNING, BUDGETING &amp; PERFORMANCE MANAGEMENT</b> Strategic Management Application and Dashboard – Continuous Improvements</p> <p><b>IMPLEMENTING PARTNER MANAGEMENT</b> Continuous Improvements – Release 2</p> <p><b>UMOJA MOBILE</b> ESS Upgrade – Release 2</p>
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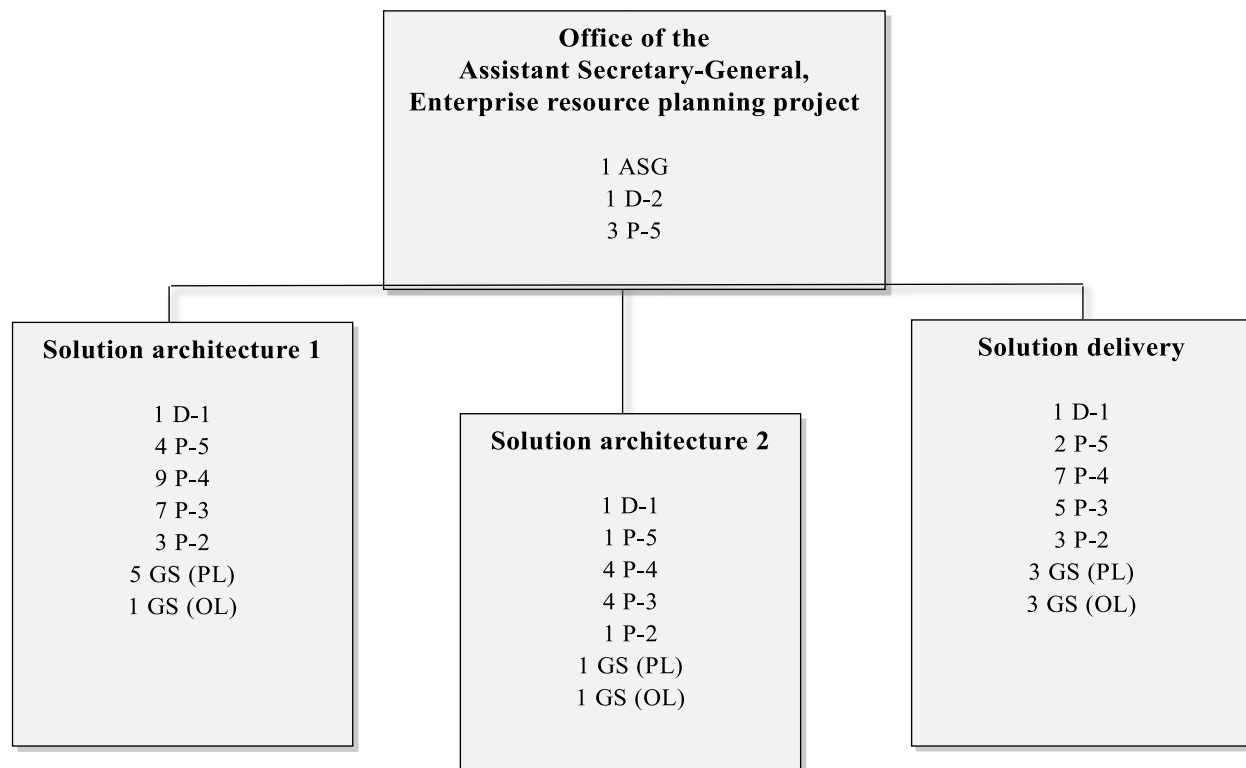
**Annex III****Umoja project expenditures by phase (as at 1 October 2019)**

(United States dollars)

<i>Year</i>	<i>Project phase</i>	<i>Staff costs</i>	<i>Non-staff costs</i>
2008–2009	Project initiation	3 974 084	274,017
2008–2015	Process design	31 468 527	76 495 544
2008–2019	Infrastructure hardware	2 655 881	33 176 143
2010–2019	Infrastructure software licences and maintenance	–	57 166 475
2012–2015	Foundation	12 178 343	51 274 054
2012–2019	Integration	68 543 251	46 966 265
2014–2019	Continuous improvement and production support	38 750 160	36 319 360
2016–2019	Umoja Extension 2	20 032 446	35 684 354
<b>Total</b>		<b>177 602 692</b>	<b>337 356 212</b>

## Annex IV

## Organizational structure and post distribution for 2020



*Abbreviations:* ASG, Assistant Secretary-General; GS, General Service; OL, Other level; PL, Principal level.