



# General Assembly

Distr.: General  
21 November 2022

Original: English

Seventy-seventh session

Agenda item 138

Proposed programme budget for 2023

## Information and communications technology strategy

### Twenty-third report of the Advisory Committee on Administrative and Budgetary Questions on the proposed programme budget for 2023

#### I. Introduction and background

1. The Advisory Committee on Administrative and Budgetary Questions has considered the report of the Secretary-General on the information and communications technology (ICT) strategy ([A/77/489](#)). During its consideration of the report, the Committee met with representatives of the Secretary-General, who provided additional information and clarification, concluding with written responses received on 15 November 2022.

2. The report of the Secretary-General is submitted pursuant to General Assembly resolution [76/245](#), in which the Assembly endorsed the recommendation of the Advisory Committee that the Secretary-General submit a new, comprehensive ICT strategy (*ibid.*, para. 4). The strategy would chart the future direction of ICT activities across the Organization, taking into account existing shortcomings, emerging challenges, opportunities and lessons learned, including related to the pandemic, threats posed by the increasingly challenging cybersecurity landscape, and new initiatives, such as the Data Strategy of the Secretary-General for Action by Everyone, Everywhere, and the use of innovative technologies (see [A/76/7](#), para. VIII.60).

3. The Advisory Committee recalls that the recommendation endorsed by the General Assembly also included the request that the Secretary-General submit a final, full and accurate report on the implementation of the concluded ICT strategy (*ibid.*, para. VIII.60). The previous strategy ([A/69/517](#)), which was endorsed by the Assembly in resolution [69/262](#), had a duration of five years, ending on 10 February 2020. The Secretary-General submitted five progress reports on the implementation of the strategy, with the most recent issued in September 2019 ([A/74/353](#)). The Committee previously expressed serious concern that the Secretary-General had not submitted a final report, considering that the status of implementation of several projects under the strategy was unclear and multiple critical ICT issues remained unaddressed (see [A/75/564](#), para. 8; see para. 5 below).



## II. Previous information and communications technology strategy and remaining challenges

### 1. Comprehensive report on the previous information and communications technology strategy

4. In his current report, the Secretary-General indicates that, in the wake of the previous strategy, significant improvements have been made to the ICT landscape throughout the Secretariat towards the goal of coherent, reliable and efficient ICT. Governance, policies and standards have been strengthened, operations have been solidified and new structures have been established to make ICT services more effective, efficient and resilient. The application landscape has been simplified and information security has been reinforced. The progress made in modernizing and transforming ICT across the Secretariat has also created a foundation for innovative solutions, using frontier technologies to enable the core work of the United Nations. However, as indicated in the report, further progress is needed in many areas ([A/77/489](#), para. 10). Upon enquiry, the Advisory Committee was informed that the challenges requiring ongoing attention and underpinning the new strategy related mainly to: legacy ICT infrastructure and aged equipment; the need for strengthened ICT governance, including with respect to the role of the Chief Information Technology Officer and in the areas of accountability, monitoring and oversight; growing cybersecurity threats; and the scale of hybrid and remote work, which was often supported by personal devices, with related security and privacy risks.

5. **While the report of the Secretary-General outlines some achievements and remaining challenges at the completion of the previous strategy, the Advisory Committee expresses regret that a final, full and accurate report thereon, as requested by the General Assembly, was not provided (see para. 3 above). Given the lack of sufficient detail and analysis on the progress made against the intended objectives, results achieved, challenges and lessons learned, and stressing the importance of an appropriate baseline for the new ICT strategy, the Committee reiterates that the Secretary-General should provide a comprehensive assessment of the previous strategy, with a compilation of lessons learned, in his next revised report on the ICT strategy (see para. 12 below; see also [A/75/564](#), paras. 8–9).**

### 2. Implementation of recommendations of oversight bodies

6. Upon enquiry, the Advisory Committee was provided with a list of outstanding recommendations related to ICT issued by the Board of Auditors, the Joint Inspection Unit and the Office of Internal Oversight Services (see annex). The pending recommendations highlighted weaknesses in the areas of governance, global sourcing and asset management, costs and cost recovery, and data privacy and protection, as well as human resources, among other matters. **The Advisory Committee trusts that the Secretary-General will make every effort to implement expeditiously the recommendations of the oversight bodies and effectively address the underlying root causes. The Committee also trusts that the Secretary-General will provide updated information on the status of open recommendations and an explanation of the challenges in their implementation in his next report on ICT (see para. 12 below).**

### III. General comments on the proposed information and communications technology strategy

7. In his report, the Secretary-General indicates that the ICT strategy identifies five strategic technology areas, which are currently at varying levels of maturity: enterprise infrastructure and systems; experience and alignment; data and information; technology innovation; and technology and data ecosystems ([A/77/489](#), para. 5). ICT activities will align to achieve three main strategic outcomes, as follows: (a) serve the United Nations entities to help them deliver on their mandates; (b) enable the digital transformation of the United Nations through innovation and partnership; and (c) safeguard and secure the Secretariat's information assets (*ibid.*, para. 6). Optimization, alignment, integration and adaptation have been identified as key tenets of the strategy (*ibid.*, para. 20). The strategy will set a common direction for the services and solutions to be provided and will underpin the operating model for the Organization's ICT. Client engagement at both the strategic and operational levels will ensure that solutions enable the Organization to more effectively and accountably deliver on its programmes and mandates (*ibid.*, para. 19). In recognition of the different business models existing across the Secretariat, as well as the decentralization resulting from the management reform, the strategy will balance central control and operational freedom (*ibid.*, paras. 11 and 23). Upon enquiry, the Advisory Committee was informed that the strategy would apply to all Secretariat entities, including offices away from Headquarters, regional economic commissions and field missions.

8. The successful implementation of the proposed strategy is predicated on addressing the gap between the ICT systems, solutions and services that are currently achievable and those that are required for the United Nations going forward (*ibid.*, paras. 7 and 31). Upon enquiry, the Advisory Committee was informed that, to achieve its goal, the strategy was based on a maturity model. The current maturity level was understanding how well ICT was performing in its present state. The target maturity level of the five strategic areas had not yet been set and would be identified based on the strategy's implementation plan (see para. 9 below).

9. Upon enquiry, the Advisory Committee was also informed that the proposed implementation timeline would be five years, from 2023 to 2028, with an annual update report for the consideration of the General Assembly. Subject to the endorsement of the strategy by the Assembly, an implementation plan would be developed accordingly, in consultation with Secretariat entities, and presented with the first update report.

10. In his report, the Secretary-General does not provide information on baseline ICT resources or the cost of implementing the strategy. Upon enquiry, the Advisory Committee was informed that the ICT strategy implementation plan would take into consideration the efforts and resources required for the implementation of central initiatives but would not include detailed estimates. The Committee notes that the report of the Secretary-General on capital investment planning ([A/77/519](#)), submitted pursuant to resolution [76/245](#), contains, *inter alia*, information on global spending on ICT across all funding sources, including capital expenditures, and seeks to establish a baseline of ICT expenditure and assets for a more detailed analysis that could result in a capital investment proposal at a later stage. With respect to cybersecurity, the report provides a proposal for additional resources. The Committee was informed that the reports on the ICT strategy and capital investment planning were considered complementary activities in the definition of a holistic approach to ICT. Moreover, the ICT strategy implementation plan and the ICT operating model to be developed would show clear connections between the directions endorsed in the strategy and the additional analysis of needs and funding gaps needed to justify the capital investment

proposals for ICT. The Committee makes related observations and recommendations in its report on capital investment planning ([A/77/7/Add.23](#)).

11. The Advisory Committee acknowledges that ICT is a critical enabler of the mandates of the Organization (see also [A/75/564](#), para. 10) and considers that the ICT strategy, which is intended to define the high-level strategic vision, principles and expected outcomes of ICT activities across the Secretariat, is a key instrument in the fulfilment of this role. The Committee is, however, of the view that the proposed strategy, in its current formulation, is not adequately articulated and developed to chart the direction for all ICT activities of the Organization for the next five years. The Committee notes that essential elements of the strategy, such as its baseline, objectives and governance, and the expected balance between central control and operational freedom, as well as the accountability framework, remain undefined, ambiguous or to be developed and provided at a later stage. Additionally, the strategy does not offer a sufficiently rigorous, expounded and concrete vision of how it will address the long-standing issues that it seeks to resolve, nor does it include any information on the estimated resources needed for its implementation. Lastly, no clear and comprehensive picture is provided as to how the strategy dovetails with other ongoing or planned initiatives related to ICT.

12. Given the lacunae of the proposed strategy and the importance of a holistic, sound and coherent approach to ICT objectives, the Advisory Committee recommends that the General Assembly request the Secretary-General to submit for its consideration at the main part of its seventy-eighth session a comprehensive report on ICT containing: (a) a revised ICT strategy, stating with clarity and precision its vision and intended objectives, and identifying for each objective concrete actions to achieve them, taking into account current status, existing and envisaged challenges and risks, efficiencies, lessons learned and interlinkages with related initiatives; (b) a detailed time-bound implementation road map, with key performance indicators, deliverables and comprehensive and well-defined governance arrangements, inclusive of an accountability framework; and (c) baseline information, including on resources, and indicative cost estimates for the implementation of the strategy (see also para. 5 above and para. 24 below). The Committee further recommends that the report on ICT contain clear linkages with the next report on capital investment planning, relevant budget proposals and other related reports of the Secretary-General. In section IV of the present report, the Committee highlights critical areas that, in its view, require further clarification, development and update in the revised strategy and implementation road map (see also [A/77/7/Add.23](#)).

13. The Advisory Committee recommends that the General Assembly request the Secretary-General to ensure that all relevant Secretariat entities fully support and cooperate and engage with the Chief Information Technology Officer in the formulation of the revised ICT strategy, implementation road map and related resource estimates.

14. The Advisory Committee further recommends that the General Assembly request the Secretary-General to implement critical measures aimed at addressing significant risks and weaknesses noted by the oversight bodies and the Committee over the years, as endorsed by the Assembly, in the context of the implementation of the programme budget for 2023 and pending the Assembly's consideration of the revised strategy (see also [A/77/7/Add.23](#)).

## IV. Specific elements of the ICT strategy

### A. Governance

15. The Advisory Committee recalls that a key driver that led to the development of the previous ICT strategy were governance deficiencies identified by the Board of Auditors, including: (a) the absence of an effective governance and accountability framework for ICT; (b) the lack of a clear definition and understanding across the Secretariat of the role and authority of the Office of Information and Communications Technology (OICT) and the Chief Information Technology Officer; (c) an insufficient number of ICT professionals with the skills required to lead business transformation initiatives; (d) insufficient consideration of the decentralized and autonomous nature of the entities that constitute the Secretariat; and (e) the lack of a clear identification of genuinely Organization-wide activities that require strong central control and those that require or merit operational freedom (A/69/610, paras. 5 and 6).

16. At the conclusion of the previous ICT strategy, the Board of Auditors continued to note governance weaknesses, particularly regarding the policy compliance and monitoring role of OICT, which had resulted in significant shortcomings, including with respect to budget oversight (A/75/156, para. 244), implementation of the disaster recovery plan (ibid., paras. 111–120), detection of and response to information security incidents (ibid., paras. 91–94) and website rationalization (ibid., paras. 145–154). Furthermore, in its latest report on the United Nations (Vol. I), the Board noted, among others: (a) deficiencies in the governance framework, including a lack of clarity on the roles and duties of the Chief Information Technology Officer and the absence of governance bodies responsible for cross-cutting issues such as ICT asset management, global sourcing and cybersecurity (A/77/5 (Vol. I), paras. 549–550); (b) the lack of an independent monitoring and accountability mechanism to enforce ICT governance (ibid., paras. 559–560); and (c) the incomplete review and revision of ICT policies (ibid., 554–557).

#### 1. Role of the Chief Information Technology Officer

17. Upon enquiry, the Advisory Committee was informed that the Chief Information Technology Officer had very poor or no visibility of the overall Secretariat global ICT landscape, from an activity, budget or expenditure perspective. For example, the Chief Information Technology Officer controlled only about 21 per cent of the overall ICT budget and did not control 79 per cent of the annual ICT expenses. Furthermore, the Chief Information Technology Officer did not have accountability and responsibility for ICT data centres, other than the data centre at Headquarters. The Board of Auditors, in its 2021 audit of the United Nations (Vol. I), noted that the existing ICT governance framework did not make clear the roles and duties of the Chief Information Technology Officer as the key figure of ICT governance (ibid., para. 549). In addition, with respect to the visibility and control of financial resources, the Board noted that, notwithstanding repeated requests from governing bodies, only 10 entities had submitted their proposed ICT budget to OICT for review during the period 2016–2020. In 2021, only the United Nations Office at Geneva and the United Nations Office at Nairobi had consulted OICT regarding their programme budget for 2022 (ibid., paras. 559–560).

18. Upon enquiry, the Advisory Committee was provided with examples of ICT governance and management mechanisms, in particular related to the Chief Information Technology Officer, that, according to the Secretariat, should be strengthened, as follows:

(a) The Chief Information Technology Officer must have oversight over both the global ICT budget and expenditure to ensure that ICT spending complies with ICT governance processes. Periodically, the Chief Information Technology Officer should review the global ICT spending and propose areas for optimization, including through greater standardization;

(b) To ensure that all important ICT investments comply with the ICT governance processes: (i) budget proposals should not be entertained for projects that are not approved by the relevant ICT governance mechanism; (ii) projects that cost more than \$1 million over four years, which are reviewed by the ICT Steering Committee, chaired by the Under-Secretary-General of the Department of Operational Support and the Under-Secretary-General of the Department of Management Strategy, Policy and Compliance, should be subjected to better quality control review, before submission to the Steering Committee; (iii) the ICT Project Review Committee, which currently reviews projects costing between \$500,000 and \$1 million over a four-year period, must be chaired by the Chief Information Technology Officer, instead of the OICT Director of Enterprise Applications; (iv) projects costing less than \$500,000 over four years must be reviewed by an entity-level ICT committee that must be co-chaired by the Head of that entity and the Chief Information Technology Officer or his/her representative;

(c) The Chief Information Technology Officer should be able to review ICT projects during their implementation for compliance with the terms of their approval by the relevant ICT governance mechanisms;

(d) The Chief Information Technology Officer should have oversight, accountability and responsibility for the Secretariat-wide ICT landscape, including communications networks and data centres;

(e) The Chief Information Technology Officer should be consulted when new job titles or classifications are created in the ICT job family.

19. The Advisory Committee recalls that the General Assembly, in its resolution [69/262](#) (sect. II, paras. 16 and 18), acknowledged the responsibilities and the importance of the strong central leadership of the Chief Information Technology Officer for the overall direction and performance of information and communications technology activities within the Organization; emphasized the need for appropriate delegation of authority and procedures for ensuring compliance with the revised ICT strategy guidelines on, inter alia, operations, security, investment and oversight at United Nations offices, in particular those related to the field; and requested the Secretary-General to ensure that all entities of the Secretariat report to the Chief Information Technology Officer on all issues relating to ICT activities, resource management, standards, security, architecture, policies and guidance. **The Advisory Committee emphasizes that the effective leadership of the Chief Information Technology Officer is critical to reduce fragmentation of ICT resources and to ensure that the Organization receives coherent and efficient ICT support to deliver on its mandates. Taking into account the scarce visibility and control over the ICT global landscape and the current lack of clarity on the roles and duties of the Chief Information Technology Officer, the Committee recommends that the General Assembly request the Secretary-General to ensure that the Chief Information Technology Officer is fully involved in the technical review of key ICT projects and initiatives, entities' budget proposals and global expenditures, to verify compliance with the ICT governance and normative framework, alignment with the overall direction of ICT activities, as well as to maximize efficiencies and avoid duplication. In order to further strengthen the coherent overview of ICT resources, the Committee suggests that the Secretary-General consider granting authority to the Chief Information Technology Officer to**



review the procurement of ICT resources above \$1 million, while noting the dual reporting line of this position and without prejudice to the relevant procurement rules and regulations. The Committee trusts that the authority, responsibilities and accountability of the Chief Information Technology Officer will be fully clarified in the governance framework of the revised strategy (see also para. 18 above and para. 23 below).

## 2. Central control, operational freedom and accessibility

20. The Advisory Committee recalls that the previous ICT strategy placed emphasis on the optimal utilization of ICT resources, which was to be achieved through the defragmentation and harmonization of existing infrastructure and processes (see [A/69/517](#), sect. V). The new strategy, drawing from lessons learned, seeks to achieve a balance between central control and operational freedom, through risk management and monitoring, in alignment with the key tenets of the management reform and in recognition of the different business models of the various entities in the Secretariat ([A/77/489](#), paras. 11 and 23). Upon enquiry, the Committee was informed that the strategy included strategic directions for all Secretariat entities to follow and the implementation level would vary on the basis of the entities' priorities. Accordingly, each entity would be accountable for managing ICT activities in line with the strategy, on the basis of the provision of operational freedom and in compliance with the normative structures established centrally. **The Advisory Committee is of the view that greater clarity on the balance between central control and operational freedom should be provided in the revised strategy, taking also into account existing challenges in ensuring accountability and oversight, including on the ICT resources of field missions (see also para. 21 below).**

21. As the Secretary-General indicates in his report, the proposed strategy is designed to improve coherence through all layers of ICT services and will establish a global operating model for ICT, allowing for the overlay of an accountability framework that clearly identifies those aspects of ICT that require operational freedom and those that benefit from central control ([A/77/489](#), para. 30). Upon enquiry, the Advisory Committee was informed that the accountability framework, which would be defined in consultation with the United Nations Secretariat entities, would establish clear roles and responsibilities, fill existing gaps and clarify which ICT activities are undertaken locally and which are implemented centrally. The Committee was further informed that there was no specific ICT delegation of authority. According to the Secretariat, the ICT delegation of authority could not be defined as such, since ICT was not governed by the United Nations rules and regulations. Therefore, authority and associated accountability would be addressed through the forthcoming accountability framework and the operating model for ICT. **The Advisory Committee notes the lack of specific delegation of authority on ICT matters and trusts that further clarity will be provided in the revised strategy (see also para. 23 below).**

22. Upon enquiry, the Advisory Committee was also informed that there was no formal reporting line between OICT and other ICT teams located in the various Secretariat entities. However, it was anticipated that the existing performance management framework would be strengthened and expanded to provide a common set of benchmarks and universal baseline for ICT services. In addition, compliance with ICT governance policies and standards could be strengthened, if needed, through senior management compacts. The Secretariat considered, nevertheless, that without a central, independent monitoring and compliance capacity, the level of compliance could not be ascertained and the utility of the normative framework was diluted. The Committee recalls that the Board of Auditors also recommended that an independent

monitoring and accountability mechanism be in place to enforce ICT governance, policies and standards (A/77/5 (Vol. I), para. 560).

**23. The Advisory Committee stresses that strengthened governance and oversight mechanisms, supported by a clear and effective accountability framework, are necessary to address the longstanding weaknesses in the delivery of ICT services and are critical for the successful implementation of the ICT strategy and its objectives. The Committee therefore recommends that the General Assembly request the Secretary-General to fully articulate in the revised strategy the elements of the ICT governance framework, present a well-defined accountability framework, and provide clear explanations of how effective monitoring and compliance will be ensured in the context of the envisaged balance between central control and operational freedom.**

### **3. OICT structure and staffing**

24. Upon enquiry, the Advisory Committee was informed that the Secretariat would undertake a detailed review of the existing ICT capacities. The review would inform a proposal to redesign and refine the structure and organization of OICT, improve capabilities and ensure that ICT management and service delivery are effective and optimized. OICT planned to submit a new organizational structure in 2023. The Committee has previously noted the difficulty of obtaining a complete and clear overview of ICT human resources and repeatedly called for the provision of comprehensive, detailed, transparent and accurate information on ICT resources, including ICT personnel (A/76/7, para. VIII.62; A/75/7, para. VIII.63; and A/75/564, para. 24). In his report on capital investment planning, the Secretary-General provides information on ICT personnel spending based on a review of job titles associated with the Information and Telecommunications Technology Network. However, the presented analysis might include personnel within this network who do not carry out ICT functions and exclude personnel who perform ICT functions but whose job titles fall under different job networks (A/77/519, paras. 9–12). **The Advisory Committee stresses that detailed information on the planned review of ICT capacities, along with a workload assessment of existing resources taking into account relevant industry standards, and any proposal to redesign and refine the structure and organization of OICT should be included in the revised strategy (see also A/77/7, para. 44).** The Committee further discusses matters related to ICT personnel in its report on capital investment planning.

25. In its 2021 audit on the United Nations (Vol. I), the Board of Auditors noted that more than 100 personnel employed with OICT under financial agreements with the United Nations Office for Project Services (UNOPS) were performing core functions, including cybersecurity and physical security, ICT/Umoja infrastructure management, enterprise-level application development and transformation, hybrid cloud computing and remote mission support services for peacekeeping. In addition, 102 OICT personnel contracted by third-party service providers had been working with the Secretariat for more than 5 years, including 47 for more than 10 years (A/77/5 (Vol. I), paras. 292–299 and 307). The Advisory Committee notes that, in his report on capital investment planning, the Secretary-General proposed a staffing plan related to cybersecurity aimed to increase staff capacity and reprofile the existing pool of contractors to support an expanded scope of work. In the context of that report, the Committee was informed that the use of third-party providers, as well as individual contractors and consultants, was a cost-effective and an operationally agile modality to conduct normal business and deploy new technologies in a rapidly evolving environment. **The Advisory Committee recommends that the General Assembly request the Secretary-General to include in the planned review of ICT personnel the use of consultants, contractors and personnel employed by third-party**



providers, such as UNOPS, United Nations International Computing Centre and commercial vendors, and present an analysis of the related operational, security and legal risks, cost implications and operational efficiencies (see also [A/77/574](#), paras. 53 and 57; see para. 24 above).

26. In its last report on the previous ICT strategy, the Board of Auditors reviewed the functions and activities of the three integrated divisions of the restructured OICT following the management reform and observed instances of duplication and unclear delineation of responsibilities, leading to a blurring of accountability in several areas. The Board recommended that OICT map the functions, roles and responsibilities of its divisions, sections and services ([A/75/156](#), paras. 17–34). That recommendation remains under implementation, with a delayed target date of the fourth quarter of 2022; and the functions and responsibilities of each of the divisions of OICT are included in the draft Secretary-General's bulletins for the Department of Management Strategy, Policy and Compliance and the Department of Operational Support, which are in the final stages of review ([A/77/322](#), paras. 574–575). **The Advisory Committee trusts that an update on the issuance of the Secretary-General's bulletins delineating the functions and responsibilities of the divisions of OICT will be provided to the General Assembly at the time of its consideration of the present report. Furthermore, the Committee trusts that the revised strategy will outline how the functions and responsibilities defined in the bulletins relate to any proposal to refine and redesign the structures of OICT (see para. 24 above).**

27. The Secretary-General indicates, in his ICT strategy report, that through active and ongoing engagement with ICT entities globally, a cadre of ICT professionals from a range of locations and entities will create capacity in core ICT areas ([A/77/489](#), para. 68). Upon enquiry, the Advisory Committee was informed that the capacities and capabilities required in specialized areas of ICT would combine their expertise in virtual groups that are not necessarily co-located. The Committee was also informed that there was no specific strategy for the movement of ICT staff and resources to Valencia, Spain, and that the ICT strategy did not address this issue or present information pertaining to staff movements or resources at the current juncture. **The Advisory Committee recalls that the General Assembly requested the Secretary-General to submit a clear strategy on the ongoing transformation of the United Nations presence in Valencia, including an overview of resources and efficiency measures, for its consideration (resolution 76/277, para. 2; see also [A/76/760/Add.5](#), para. 30; and [A/77/7](#), para. VIII.60). The Committee trusts that the strategy on Valencia will be provided at the earliest occasion.**

#### 4. Review process

28. In his report, the Secretary-General underlines an approach based on a continuous improvement process to strengthen ICT governance ([A/77/489](#), para. 82). Upon enquiry, the Advisory Committee was informed that partial and global reviews would be undertaken on a regular and ad hoc basis to ensure that governance is adequate, agile and effective both at the central and local levels and continuously improve to respond to emerging needs and address risks and challenges. **The Advisory Committee is of the view that the revised strategy should describe with greater detail the envisaged review processes to continuously strengthen ICT governance.**

## B. Other matters

### 1. Cybersecurity

29. In 2013, the Secretariat established a 10-point action plan to strengthen information security and address the most urgent shortcomings identified by the Board of Auditors ([A/67/651](#)). In his report on the proposed ICT strategy, the Secretary-General indicates that many elements of the action plan have been implemented to completion or adopted into the work programme of the United Nations ([A/77/489](#), para. 16). Upon enquiry, the Advisory Committee was informed that five initiatives had been only partially implemented: the segmentation of network zones had occurred only in several locations; the intrusion system had been adopted in 11 locations and replaced in 2021 with a more advanced proactive threat-hunting solution, whose deployment was ongoing; the subscription to a cyberintelligence service/feed had been partially implemented; the classification of United Nations data remained low, despite multiple outreach and awareness activities; and the mandatory reporting of information technology incidents and sharing of actionable information had been also partially implemented, owing to the lack of an enforcement mechanism.

30. In its 2021 audit on the United Nations (Vol. I), the Board of Auditors noted: (a) 25 per cent of applications and 11 per cent of websites were not in full compliance with security requirements; (b) 47 per cent of security advisories sent by OICT were still not acknowledged by 106 participating entities; (c) 19 per cent of active staff had not completed a mandatory security training course; (d) security updates had not been installed at 386 servers and workstations in a timely manner; and (e) the network segmentation project did not generate solid progress and the newest target finish date had been postponed to the middle of 2023. The Board also noted that the risks of and damages caused by cyberattacks were worsening, owing to recurring critical cybersecurity incidents not being addressed in a timely manner. The Board recommended, *inter alia*, that the Administration enhance centralized technical monitoring of ICT security at the entity level and establish accountability mechanisms to ensure full compliance with the security-related policies and standards ([A/77/5 \(Vol. I\)](#), paras. 562–569).

31. The Advisory Committee notes that section III of the report of the Secretary-General on capital investment planning contains information on the Secretariat's current cybersecurity programme and includes proposals to expand both the scope and the scale of its coverage to ensure its suitability to manage the cyberthreats confronting the Organization ([A/77/519](#), sect. III). **Considering that cybersecurity is one of the main challenges that the ICT strategy seeks to address, the Advisory Committee recommends that the General Assembly request the Secretary-General to include in the revised strategy comprehensive information on ongoing and planned cybersecurity activities, along with indicative related investments.** The Committee further discusses matters related to cybersecurity in its reports on capital investment planning ([A/77/7/Add.23](#)) and the 2022 progress report on the functioning and development of the Umoja system ([A/77/7/Add.21](#)).

### 2. Asset management

32. Over the years, the Board of Auditors and the Advisory Committee have made observations and recommendations on ICT asset management, including with respect to: (a) the lack of an inventory of ICT tangible and non-tangible asset holdings; (b) the need for clear, comprehensive and justified asset plans for required assets; (c) significant amounts of idle ICT assets, with the related risks of obsolescence, waste and additional costs; and (d) the need for an assessment of the replacement cycle and actual usage of mobile devices, laptops and desktop computers across the

Secretariat (see for instance [A/77/7](#), para. VIII.76; [A/77/5 \(Vol. I\)](#), paras. 221–226; [A/76/554](#), para. 37; and [A/77/574](#), para. 41).

33. In his report, the Secretary-General indicates that overall ICT asset management will be strengthened in collaboration with relevant offices ([A/77/489](#), para. 35). One of the key results of the ICT Strategy is to implement a transparent ICT asset lifecycle management and continuously update the global ICT inventory (*ibid.*, annex). The Advisory Committee notes that the proposed ICT strategy report does not provide an inventory of ICT assets. Information and trends regarding ICT assets, equipment and inventory are contained in the report of the Secretary-General on capital investment planning ([A/77/519](#), sect. II). However, the analysis provided in that report is inconclusive on the urgency of, or need for, additional funding for ICT equipment beyond that currently being budgeted on a recurring or periodic basis (*ibid.*, para. 47).

34. In his ICT strategy report, the Secretary-General indicates that an assessment of the replacement cycle and actual usage of mobile devices, laptops and desktop computers across the Secretariat will be conducted, and results will be provided in a subsequent update of the implementation of the ICT strategy ([A/77/489](#), para. 35; see also [A/77/7](#), para. VIII.76). In addition, he notes that the use of personal equipment from diverse locations for business purposes has increased with the pandemic and presents concerns related to cybersecurity and privacy risks ([A/77/489](#), para. 14). Upon enquiry, the Advisory Committee was informed that, in 2022, to mitigate cybersecurity risks associated with personnel relying on private Internet connections, the United Nations Secretariat started to deploy a new suite of security solutions, with the ability to perform web filtering on the device itself, rather than at the network level. **The Advisory Committee considers that the revised strategy should provide comprehensive information on the envisaged strengthening of the management of the ICT assets and an assessment of the replacement cycle of mobile devices, laptops, desktop computers and other ICT devices, taking also into account linkages between idle and ageing assets, costs, evolving technologies, as well as risks and opportunities related to the increased use of personal devices (see also [A/77/7](#), para. VIII.76).** The Committee further discusses matters related to ICT assets in its report on capital investment planning.

### 3. Data centres and cloud services

35. In his ICT strategy report, the Secretary-General indicates that efforts to expand the use of cloud computing, where cost-effective and efficient, will continue in alignment with the management reform and that implementation will be delegated on the basis of an accountability framework to support agility ([A/77/489](#), para. 34). Advancing cloud solutions considering cost, privacy and scalability gains, as well as establishing cloud assessment reporting tools and cloud security-specific training requirements and capacity, are key results of the proposed ICT strategy (*ibid.*, annex).

36. Upon enquiry, the Advisory Committee was informed that the enterprise data centres at the United Nations Global Service Centre, which would continue to provide the United Nations on-premises hosting component and the use a cloud solution, would be assessed on a case-by-case basis and United Nations clients would have the option to choose where to host their applications and data. It was envisioned that one third of the projected storage would be at the enterprise data centres and one third with each of the two public cloud providers. In the context of the report on capital investment planning ([A/77/519](#)), the Committee was further informed that, given the existence of data centres at different duty stations and the engagement of cloud service providers, duplication seemed highly probable but could only be established through a detailed review of the related infrastructure and services. **The Advisory Committee recommends that the General Assembly request the Secretary-General to present a holistic vision on the future use of data centres and cloud**

services in the revised strategy, taking also into account business continuity exigencies, confidentiality, existing weaknesses, risks, costs and opportunities for efficiency gains, including through minimizing duplication and the enhanced use of current capabilities (see also [A/77/574](#), para. 76; and para. 38 below). The Committee further discusses related matters in its report on the 2022 progress report on the functioning and development of the Umoja system.

37. In its 2021 audit on the United Nations (Vol. I), the Board of Auditors noted that there was no overarching policy for data centre management to define the roles, responsibilities and coordination mechanisms for key stakeholders, nor were there guidelines to regulate desired outputs from uninterruptible power systems, precision cooling or other non-computing infrastructure components. In addition, the disaster planning technical procedure had not been updated since 2014, and there was no disaster recovery plan for critical ICT services located in the United Nations Headquarters data centre. Such deficiencies were underscored through the power outage incident at the data centre on 19 February 2022, which resulted in the United Nations main website, along with other critical department sites, remaining offline for three days. Moreover, it took OICT seven business days to recover the entire system (see [A/77/5 \(Vol. I\)](#), paras. 571–576). Upon enquiry, the Advisory Committee was informed that, following that critical incident, an after-action review was being compiled; the [un.org](#) website had been migrated to the cloud and database applications were being migrated either to the enterprise data centres or the cloud; required equipment was being identified and costed; and an offsite recovery facility was planned to support systems that would remain at the Headquarters data centre. **The Advisory Committee recommends that the General Assembly request the Secretary-General to enhance his efforts to prevent incidents and ensure appropriate resilience and disaster recovery in the future (see also [A/77/7](#), para. VIII.78).** The Committee also concurs with the recommendation of the Board of Auditors on the need to establish governance instruments to clarify the roles and responsibilities in data centre operations, update the disaster recovery technical procedure in a timely manner and improve its emergency response coordination mechanism (see [A/77/5 \(Vol. I\)](#), para. 576). The Committee trusts that the revised strategy will comprehensively address business continuity and disaster recovery management and provide an update on ongoing efforts.

#### 4. Interoperability of ICT systems

38. Building interoperability across key enterprise platforms and systems is a key result of the ICT strategy ([A/77/489](#), annex). Upon enquiry, the Advisory Committee was informed of current initiatives that were promoting interoperability, such as the Digital and Technology Network, comprising information technology experts across the United Nations system led by the Chief Information Technology Officer, and ongoing coordination on the development of customer relationship management systems. In addition, various platforms and services were facilitating secure access to and the sharing of information and systems among entities, including Umoja interfaces that could be used with the enterprise planning systems of United Nations agencies, funds and programmes. **The Advisory Committee is of the view that the revised strategy should provide a comprehensive vision on the state and future of interoperability across key enterprise platforms and systems and how it plans to strengthen interoperability at all duty stations and between entities, outlining also potential opportunities for synergies and efficiency gains (see also [A/77/574](#), para. 76).**

## 5. Data management

39. In his report, the Secretary-General indicates that the strategy will focus on a three-layered data management plan for the next five years involving: (a) technology solutions that will support United Nations entities in setting up data architectures, including through new data platforms that enable data integration, data cataloguing, metadata and master data management, data protection and privacy, data sharing, data analytics and the use of frontier technologies such as artificial intelligence capabilities; (b) governance, by strengthening the policies, procedures and guidelines that provide oversight to data management; and (c) change management, to support United Nations entities to better transition into a new data-driven environment (A/77/489, para. 52). Upon enquiry, the Advisory Committee was informed that investments in technical platforms, staff and services capacity would be necessary to implement the data management plan and would be developed and proposed in the appropriate budgetary instrument. **The Advisory Committee trusts that the revised strategy will articulate with greater detail the three-layered data management plan, including its interlinkages with existing platforms and initiatives, such as the Data Strategy of the Secretary-General for Action by Everyone, Everywhere, and provide information on estimated related investments.**

## 6. Data protection and privacy

40. Although in his report the Secretary-General mentions privacy standards and the need to support the implementation of data protection and privacy in multiple contexts, these concepts are not fleshed out in the proposed strategy. The Board of Auditors, in its 2021 audit of the United Nations (Vol. I), recommended that the Administration expedite the development of a comprehensive policy concerning data protection and privacy for the United Nations Secretariat (A/77/5 (Vol. I), para. 587). Upon enquiry, the Advisory Committee was informed that the policy was being developed under the leadership of the Office of Legal Affairs, with the active support of OICT. **The Advisory Committee recommends that the General Assembly request the Secretary-General to provide an update on the finalization of the data protection and privacy policy to the General Assembly at the time of its consideration of the present report. The Committee also trusts that fuller information on data protection and privacy will be included in the revised strategy.**

## 7. Modernization and technology innovation

41. In his report, the Secretary-General indicates that the proposed strategy will establish a structured process to scale-up identified innovative technology solutions and transition innovation to a more mature model, making it more predictable, repeatable and efficient. The strategy proposes programmes, such as ICT innovation networks, emerging technology, United Nations smart camps or Internet of things analytics (A/77/489, paras. 58–65). Upon enquiry, the Advisory Committee was informed that a more mature model for technology innovation would rely on a systematic framework to consistently match innovation demands with a supply of scalable solutions and would be aligned with broader strategic initiatives, such as the Secretary-General's strategy on new technologies, the Data Strategy of the Secretary-General for Action by Everyone, Everywhere, the Strategy for the Digital Transformation of United Nations Peacekeeping, the Secretary-General's Road Map for Digital Cooperation, and the United Nations Common Agenda and Quintet of change for a UN 2.0. **The Advisory Committee is of the view that the revised strategy should provide more comprehensive information on the existing and planned use of innovative technologies, including regarding efficiency gains, safeguards and frameworks for their ethical utilization, along with clear explanations on the relationship and alignment with related initiatives (see also A/77/7, para. VIII.77).**

## 8. Website rationalization

42. Upon enquiry, the Advisory Committee was informed that the proposed strategy reiterated the efforts already under way by OICT to support the harmonization of United Nations public websites, in compliance with the administrative instruction on United Nations website publishing ([ST/AI/2022/2](#)). One tool for accelerating website harmonization was the web content management platform provided and run by OICT, which enabled entities to develop websites that are fully compliant with that administrative instruction across the areas of branding, multilingualism, accessibility, technology standards and cybersecurity. The estimated cost of the platform is \$3.5 million per year. **The Advisory Committee trusts that the revised strategy will support ongoing efforts and include comprehensive information on future plans for website rationalization and institutional social media accounts, with a view to reducing costs, minimizing exposure to security risks and ensuring accessibility and multilingualism (see also [A/77/7](#), paras. VII.24 and VIII.75; see also para. 43 below).**

## 9. Accessibility, multilingualism and environmental impact

43. Upon enquiry, the Advisory Committee was informed that the ICT strategy would support inclusion, including by identifying, reducing or removing barriers to universal design and addressing gaps in multilingualism. The strategy would also ensure that the negative environmental impacts of ICT, such as carbon emissions and e-waste, are minimized by adopting best practices throughout the lifecycle of ICT solutions. **The Advisory Committee trusts that the revised strategy will articulate clearly these objectives and how they will be achieved, in line with the applicable normative framework, and taking into account existing initiatives and remaining challenges and gaps.**

# V. Conclusion

44. In his report, the Secretary-General indicates that the General Assembly is requested to endorse the ICT strategy set out by the Secretary-General to digitally transform the Organization ([A/77/489](#), para. 103). **Subject to its recommendations and observations above, the Advisory Committee recommends against the endorsement of the proposed ICT strategy in its present form and recommends that the General Assembly request the Secretary-General to submit a revised strategy, along with a detailed implementation road map and indicative cost estimates, for the consideration of the Assembly at its seventy-eighth session (see para. 12 above).**



## Annex

## List of outstanding recommendations issued by oversight bodies

## Board of Auditors, volume I, recommendations

<i>Report symbol</i>	<i>Financial year</i>	<i>Paragraph</i>	<i>Area</i>	<i>Recommendation</i>	<i>Department/Office</i>	<i>Priority</i>	<i>Accepted: Yes/No</i>
<a href="#">A/72/5 (Vol. I)</a> and <a href="#">A/72/5 (Vol. I)/Corr.1</a>	2016	293	Information and communications technology (ICT) affairs	The Board recommended that the Administration ensure that the Procurement Division, in coordination with the other stakeholders, review the process for purchasing standardized ICT commodities in order to strike a balance between the need for standardizing requirements and compliance with procurement principles. In particular, ICT hardware of low complexity and limited operability should be standardized. As a practice, the technical specifications should be standardized or the reasons for the non-feasibility of standardizing technical specifications should be analysed and documented.	Department of Operational Support/Office of Information and Communications Technology	H	Yes
<a href="#">A/75/5 (Vol. I)</a>	2019	360	Human resources	The Board recommends that the Administration prioritize the implementation of a Secretariat-wide modern client relations management system to optimally fulfil the service delivery responsibility of the Headquarters support structure.	Department of Operational Support/Office of Information and Communications Technology	M	Yes
<a href="#">A/76/5 (Vol. I)</a>	2020	178	Assets management	The Board recommends that the Administration formulate and issue a warehouse management guideline for United Nations Headquarters and other non-peacekeeping operations entities and urge all entities to implement the requirements and make unified rectifications accordingly.	Department of Management Strategy, Policy and Compliance/ Office of Programme Planning, Finance and Budget and Department of Operational Support/Office of	M	Yes

<i>Report symbol</i>	<i>Financial year</i>	<i>Paragraph</i>	<i>Area</i>	<i>Recommendation</i>	<i>Department/Office</i>	<i>Priority</i>	<i>Accepted: Yes/No</i>
					Information and Communications Technology		
<a href="#">A/76/5 (Vol. I)</a>	2020	286	Flexible workplace project	The Board recommends that the Administration determine the usage of this ICT equipment as soon as possible to avoid obsolescence and waste resulting from its non-use.	Office of Information and Communications Technology	M	Yes
<a href="#">A/76/5 (Vol. I)</a>	2020	378	Delegation of authority	The Board recommends that the Administration address deficiencies in the linkages among information systems to better support the monitoring of exceptions in coordination with the enterprise resource planning teams.	Department of Management Strategy, Policy and Compliance/ Business Transformation and Accountability Division, Office of Human Resources and Enterprise Resource Planning Solution Division; and Office of Information and Communications Technology	M	Yes
<a href="#">A/76/5 (Vol. I)</a>	2020	721	Information and communication technology	The Board reiterates its recommendation that the Administration clearly define the functions and responsibilities of each division and service within the Office of Information and Communications Technology to avoid duplication and fragmentation within the Office.	Office of Information and Communications Technology	H	Yes
<a href="#">A/76/5 (Vol. I)</a>	2020	730	Information and communication technology	The Board recommends that the Administration issue policies or guidelines to ensure a comprehensive review and analysis of and plan for ICT technical support requirements when considering outsourcing to	Department of Operational Support/Office of Information and Communications Technology	M	Yes

<i>Report symbol</i>	<i>Financial year</i>	<i>Paragraph</i>	<i>Area</i>	<i>Recommendation</i>	<i>Department/Office</i>	<i>Priority</i>	<i>Accepted: Yes/No</i>
				service providers, and ensure that such contracts are established in a timely manner.			
<a href="#">A/76/5 (Vol. I)</a>	2020	731	Information and communication technology	The Board also recommends that the Administration formulate a policy for the ICT support model to support the Organization in continuing to have staff work remotely and safely during and after the COVID-19 pandemic.	Office of Information and Communications Technology	M	Yes
<a href="#">A/76/5 (Vol. I)</a>	2020	737	Information and communication technology	The Board reiterates its recommendation that the Administration enhance cross-department coordination to ensure strict compliance with the requirement of General Assembly resolution <a href="#">69/262</a> and Secretary-General's bulletin <a href="#">ST/SGB/2016/11</a> relating to the ICT budget submission, and hold entities accountable for the submission of budgets and projects from all funding sources for all ICT initiatives and operations to the Office of Information and Communications Technology.	Office of Information and Communications Technology and Department of Management Strategy, Policy and Compliance/ Office of Programme Planning, Finance and Budget	H	Yes
<a href="#">A/76/5 (Vol. I)</a>	2020	745	Information and communication technology	The Board reiterates its recommendation that the Administration place a higher priority on network segmentation, develop a clear time frame for the completion of pending work and implement the planned activities in a timely manner.	Office of Information and Communications Technology	M	Yes
<a href="#">A/76/5 (Vol. I)</a>	2020	750	Information and communication technology	The Board reiterates its recommendation that the Administration review the capital investment plan for the remaining period, reprioritize, identify and upgrade outdated systems, and establish a timeline for	Office of Information and Communications Technology	M	Yes

<i>Report symbol</i>	<i>Financial year</i>	<i>Paragraph</i>	<i>Area</i>	<i>Recommendation</i>	<i>Department/Office</i>	<i>Priority</i>	<i>Accepted: Yes/No</i>
				its completion, considering the impacts of the COVID-19 pandemic.			
<a href="#">A/77/5 (Vol. I)</a>	2021	295	Human resources management	The Board recommends that the Administration ensure that contracted personnel are performing assignments only when there is no expertise in the Organization and that core functions are performed by regular staff members.	Department of Management Strategy, Policy and Compliance/ Office of Human Resources and Office of Programme Planning, Finance and Budget, Office for the Coordination of Humanitarian Affairs, Development Coordination Office, United Nations Support Mission in Libya and Office of Information and Communications Technology	H	Yes
<a href="#">A/77/5 (Vol. I)</a>	2021	309	Human resources management	The Board recommends that the Administration conduct a cost-benefit analysis before engaging personnel through the United Nations Office for Project Services (UNOPS), the United Nations Development Programme or third-party service providers and clearly define the identity of personnel to ensure the correct application of the legal framework and contractual responsibilities.	Department of Management Strategy, Policy and Compliance/ Office of Programme Planning, Finance and Budget, Office for the Coordination of Humanitarian Affairs, Development Coordination Office, Department of Political and Peacebuilding Affairs and Office of Information and Communications Technology	M	Yes

<i>Report symbol</i>	<i>Financial year</i>	<i>Paragraph</i>	<i>Area</i>	<i>Recommendation</i>	<i>Department/Office</i>	<i>Priority</i>	<i>Accepted: Yes/No</i>
<a href="#">A/77/5 (Vol. I)</a>	2021	317	Human resources management	The Board recommends that the Administration review the current practice of rehiring consultants under vendor contracts in terms of its compliance with existing guidance, cost-effectiveness and appropriateness.	Office of Information and Communications Technology, Department of Management Strategy, Policy and Compliance/ Office of Human Resources and Department of Operational Support	M	Yes
<a href="#">A/77/5 (Vol. I)</a>	2021	552	ICT	The Board recommends that the Administration draw experiences and lessons from Department for General Assembly and Conference Management and the Department of Safety and Security collaboration and develop guidance on the establishment of ICT governance bodies at the entity level.	Office of Information and Communications Technology	M	Yes
<a href="#">A/77/5 (Vol. I)</a>	2021	557	ICT	The Board recommends that the Administration review and update normative guidance in a timely manner and release new policies and guidelines, where needed.	Office of Information and Communications Technology	M	Yes
<a href="#">A/77/5 (Vol. I)</a>	2021	560	ICT	The Board recommends that the Administration ensure that an independent monitoring and accountability mechanism is in place to enforce ICT governance, policies and standards.	Office of Information and Communications Technology	M	Yes
<a href="#">A/77/5 (Vol. I)</a>	2021	567	ICT	The Board recommends that the Administration amend the existing ICT governance structure to integrate information security, indicating clearly, among others, the ownership of processes, roles and responsibilities of relevant entities and reporting lines.	Office of Information and Communications Technology	H	Yes

<i>Report symbol</i>	<i>Financial year</i>	<i>Paragraph</i>	<i>Area</i>	<i>Recommendation</i>	<i>Department/Office</i>	<i>Priority</i>	<i>Accepted: Yes/No</i>
<a href="#">A/77/5 (Vol. I)</a>	2021	568	ICT	The Board also recommends that the Administration ensure that all the stakeholders across the Secretariat commit themselves to the implementation of the seven-point information security action plan in an expeditious manner.	Office of Information and Communications Technology	H	Yes
<a href="#">A/77/5 (Vol. I)</a>	2021	569	ICT	The Board further recommends that the Administration enhance centralized technical monitoring of ICT security at the entity level and establish accountability mechanisms to ensure full compliance with the security-related policies and standards.	Office of Information and Communications Technology	H	Yes
<a href="#">A/77/5 (Vol. I)</a>	2021	576	ICT	The Board recommends that the Administration establish policies, procedures or mechanisms to clarify the roles and responsibilities in data centre operations, update the disaster recovery technical procedure in a timely manner and improve its emergency response coordination mechanism.	Office of Information and Communications Technology	H	Yes
<a href="#">A/77/5 (Vol. I)</a>	2021	581	ICT	The Board recommends that the Administration ensure that data centres' access logs are reviewed and monitored by the Information Technology Service data centre manager on a quarterly basis, or more often, if necessary.	Office of Information and Communications Technology	M	Yes
<a href="#">A/77/5 (Vol. I)</a>	2021	582	ICT	The Board recommends that the Administration carry out periodic control measures in order to keep the list of personnel authorized to have access to the data centre updated.	Office of Information and Communications Technology	M	Yes



<i>Report symbol</i>	<i>Financial year</i>	<i>Paragraph</i>	<i>Area</i>	<i>Recommendation</i>	<i>Department/Office</i>	<i>Priority</i>	<i>Accepted: Yes/No</i>
<a href="#">A/77/5 (Vol. I)</a>	2021	587	ICT	The Board recommends that the Administration expedite the development of a comprehensive policy concerning data protection and privacy for the United Nations Secretariat.	Office of Information and Communications Technology and Department of Management Strategy, Policy and Compliance/ Office of Human Resources	M	Yes
<a href="#">A/77/5 (Vol. I)</a>	2021	588	ICT	The Board also recommends that the Administration provide privacy-enhancing mechanisms in coordination with data stewards to ensure that only those nominated by the relevant entities are authorized to have access to the data under their purview.	Office of Information and Communications Technology	M	Yes
<a href="#">A/77/5 (Vol. I)</a>	2021	593	ICT	The Board recommends that Administration develop a concept note for implementing global ICT asset management and sourcing and a road map for implementing this initiative, and clearly define the roles and responsibilities of the entities involved.	Office of Information and Communications Technology	M	Yes
<a href="#">A/77/5 (Vol. I)</a>	2021	599	ICT	The Board recommends that the Administration ensure that ICT assets are properly recorded in Umoja for greater visibility and reliability to ensure improved monitoring and controls.	Office of Information and Communications Technology	M	Yes
<a href="#">A/77/5 (Vol. I)</a>	2021	600	ICT	The Board also recommends that the Administration develop detailed guidelines for ICT asset and inventory management for Secretariat entities to support their effective and efficient management of ICT assets management and sourcing.	Office of Information and Communications Technology	M	Yes

<i>Report symbol</i>	<i>Financial year</i>	<i>Paragraph</i>	<i>Area</i>	<i>Recommendation</i>	<i>Department/Office</i>	<i>Priority</i>	<i>Accepted: Yes/No</i>
<a href="#">A/77/5 (Vol. I)</a>	2021	608	ICT	The Board recommends that the Administration ensure that the Office of Information and Communications Technology conduct a cost-benefit analysis of the use of the personnel under the financial agreements with UNOPS and conduct comprehensive workforce planning to identify demands, key resources and potential risks.	Office of Information and Communications Technology	M	Yes
<a href="#">A/77/5 (Vol. I)</a>	2021	609	ICT	The Board also recommends that the Administration ensure that the Office of Information and Communications Technology performs an overall evaluation for the current business model with UNOPS and evaluates the effectiveness and efficiency of the current budget and payment modality, as well as the current business model, with the aim of identifying the best modality for the interests and needs of the Office, and improving transparency regarding its contractual services requirements in budget proposals.	Office of Information and Communications Technology	M	Yes

## Board of Auditors, volume II, recommendations

<i>Financial year</i>	<i>Report symbol</i>	<i>Paragraph</i>	<i>Area</i>	<i>Recommendation</i>	<i>Department/Office</i>	<i>Priority</i>	<i>Accepted: Yes/No</i>
2019	<a href="#">A/74/5 (Vol. II)</a>	353	Peacekeeping procurement	The Board recommends that the Administration ensure international competition by soliciting Internet capacity services and by analysing the market and alternative solutions for the transponder capacity.	Department of Operational Support/Office of Information and Communications Technology	M	Yes

## Board of Auditors strategy recommendations related to information and communications technology

<i>Report symbol</i>	<i>Financial year</i>	<i>Paragraph</i>	<i>Recommendation</i>	<i>Department/Office</i>	<i>Priority</i>
<a href="#">A/67/651</a>	2012	31	The Administration agreed with the Board's recommendation that, in order to enable greater consistency and transparency with regard to information and communications technology (ICT) funding and budgets and allow better management of costs and effective prioritization, the Controller require that proposed ICT budgets set out: (a) the cost of running day-to-day services; (b) the cost of licences and maintenance costs for existing systems; (c) costs related to upgrading existing service delivery (e.g. to improve security); and (d) new costs, including strategic requirements.	Office of Information and Communications Technology	M
<a href="#">A/67/651</a>	2012	68	The Administration agreed with the Board's recommendation that it develop a fit-for-purpose governance framework to oversee the strategic development of ICT across the United Nations. This governance framework should clearly set out roles, accountabilities and responsibilities and ensure that decision-making bodies operate distinctly from consultative and advisory forums.	Office of Information and Communications Technology	M
<a href="#">A/70/581</a>	2015	SR (d)	The Administration should establish a robust compliance framework with the necessary authorities to ensure adherence to Secretariat-wide ICT policies, including those on information security.	Office of Information and Communications Technology	H

<i>Report symbol</i>	<i>Financial year</i>	<i>Paragraph</i>	<i>Recommendation</i>	<i>Department/Office</i>	<i>Priority</i>
<a href="#">A/72/151</a>	2017	40	The Board recommends that the Office of Information and Communications Technology complete the task of formulating and promulgating ICT policies in a time-bound manner and establish the proposed self-regulatory compliance function.	Office of Information and Communications Technology	H
<a href="#">A/72/151</a>	2017	106	The Board also recommends that a clear road map be developed to realize cost optimization benefits through global sourcing.	Office of Information and Communications Technology	H
<a href="#">A/73/160</a>	2018	126	The Board recommends that the Administration identify and document global sourcing opportunities along with an estimation of savings.	Office of Information and Communications Technology	H
<a href="#">A/74/177</a>	2019	20	The Board recommends that the Office of Information and Communications Technology develop an appropriate compliance model including a self-assessment mechanism for all policies, where feasible, and coordinate with stakeholders to ensure better compliance.	Office of Information and Communications Technology	H
<a href="#">A/74/177</a>	2019	85	The Board recommends that OICT, in coordination with other stakeholders, review the existing governance and compliance processes regarding websites, identify the gaps and ensure compliance with the existing guidelines and standards.	Office of Information and Communications Technology	H
<a href="#">A/75/156</a>	2020	34	The Board recommends that the Office map the functions, roles and responsibilities of the divisions, sections and services within the Office, based on the report of the Secretary-General ( <a href="#">A/72/492/Add.2</a> ), in order to avoid overlapping and duplication of functions.	Office of Information and Communications Technology	H
<a href="#">A/75/156</a>	2020	50	The Board also recommends that the Office develop an accountability framework for ICT and that it monitor its implementation in line with its role as a second line of defence for ICT functions.	Office of Information and Communications Technology	H
<a href="#">A/75/156</a>	2020	153	The Board recommends that the Office prepare a compliance road map for all the United Nations websites, in consultation with other stakeholders, to mitigate security risks within a defined time frame.	Office of Information and Communications Technology	H

<i>Report symbol</i>	<i>Financial year</i>	<i>Paragraph</i>	<i>Recommendation</i>	<i>Department/Office</i>	<i>Priority</i>
<a href="#">A/75/156</a>	2020	181	The Board recommends that the Office prepare a consolidation road map for all pending activities to achieve a fully unified Enterprise Service Desk.	Office of Information and Communications Technology	M
<a href="#">A/75/156</a>	2020	204	The Board also recommends that the Administration develop a policy on information management and data privacy, in line with the personal data protection and privacy principles established by the United Nations System Chief Executives Board for Coordination.	Office of Information and Communications Technology, Department of Management Strategy, Policy and Compliance/Office of Human Resources and Department of Operational Support	M
<a href="#">A/75/156</a>	2020	210	The Board recommends that OICT complete the creation of a central repository of data sources or organization-wide data catalogue in consultation with the Executive Office of the Secretary-General.	Office of Information and Communications Technology and Executive Office of the Secretary-General	M
<a href="#">A/75/156</a>	2020	226	The Board recommends that OICT take the necessary steps, in consultation with the Office of Supply Chain Management, to draw up a timeline and complete the revised solicitation process and award of contract for ICT services.	Office of Information and Communications Technology and Department of Operational Support	H
<a href="#">A/75/156</a>	2020	227	The Board also recommends that OICT prepare detailed transition plans for each of the global sourcing projects for smooth onboarding of the new service providers.	Office of Information and Communications Technology and Department of Operational Support	M

### Recommendations of the Joint Inspection Unit

<i>Recommendation number</i>	<i>Recommendation</i>	<i>Acceptance status</i>
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### Cybersecurity in the United Nations system organizations ([JIU/REP/2021/3](#))

1	The executive heads of the United Nations system organizations should prepare, as a matter of priority and no later than 2022, a comprehensive report on their cybersecurity framework and present it to their respective legislative and governing bodies at the earliest opportunity, covering the elements contributing to improved cyberresilience examined in the present report.	Under consideration
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<i>Recommendation number</i>	<i>Recommendation</i>	<i>Acceptance status</i>
2	The legislative and governing bodies of the United Nations system organizations should consider the reports on the elements contributing to improved cyberresilience prepared by the executive heads and provide strategic guidance on further improvements to be implemented in their respective organizations, as necessary.	Under consideration
4	The General Assembly of the United Nations should, no later than at its seventy-seventh session, take note of the recommendation addressed to the Director of the United Nations International Computing Centre to establish a trust fund for shared cybersecurity solutions and invite Member States wishing to reinforce the cybersecurity posture of the United Nations system organizations to contribute to the trust fund.	Under consideration
5	The Secretary-General should present a report to the General Assembly of the United Nations no later than at its seventy-eighth session exploring further opportunities to draw upon the convergence between physical security and cybersecurity so as to ensure a more holistic protection of United Nations personnel and assets and indicating necessary measures to strengthen the existing structures accordingly, giving particular attention to the potential role of the Department of Safety and Security in this regard.	Under consideration

**Management letter on securing the integrity of documents, records and archives of the United Nations system organizations (JIU/ML/2021/1)**

The Inspectors request the executive heads of United Nations system organizations to give due consideration to devising and applying appropriate safeguards to secure their current and historical documents, records and archives including by revisiting, if necessary, the security parameters applied to the storage of such documents in both the physical and cyberenvironment and including the matter in their organizations' risk registry, and to report to the Joint Inspection Unit through the web-based tracking system no later than the end of 2022 on the measures taken to implement the present recommendation.	Under consideration
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**Environmental sustainability across organizations of the United Nations system (JIU/REP/2020/8)**

9	The executive heads of organizations of the United Nations system should ensure that, by the end of 2022, information and communications technology services' actions and projects comply with environmental sustainability considerations, including ensuring that greenhouse gas emissions are at a level compatible with the United Nations Framework Convention on Climate Change Paris agreement.	Accepted
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**Blockchain applications in the United Nations system: towards a state of readiness (JIU/REP/2020/7)**

1	The governing bodies of the United Nations system organizations should ensure that, when applicable, the use of blockchain applications will be integrated, together with other digital technologies, into the innovation strategies and policies adopted by their respective organizations.	Accepted
2	The executive heads of the United Nations system organizations should make sure that the examination of possible blockchain use cases will be based on assessments of project risks, including with respect to relevant organizational policies and regulations on privileges and immunities, data protection, confidentiality, cybersecurity, system integrity, and reputation.	Accepted



<i>Recommendation number</i>	<i>Recommendation</i>	<i>Acceptance status</i>
3	The executive heads of the United Nations system organizations, if they have not already done so, should endorse the Principles for Digital Development by the end of 2022, as a first step to ensuring a general common understanding of digital transformation at the organizational level, including the possible use of blockchains.	Accepted
4	The executive heads of the United Nations system organizations should ensure that any decision on using blockchain should be based on an appropriate determination of the business case and of the most suitable solution, using as guidance a decision-making matrix.	Accepted
5	The Secretary-General, in consultation with the executive heads of the United Nations system organizations, with support from the International Telecommunication Union, should assign, by the end of 2021, to a United Nations representative in charge of digital technologies and related issues, the task of following the development of blockchain interoperability standards and open-source projects aimed at blockchain interoperability, as part of an overall consideration of the policy implications of the technology, and to work with all organizations accordingly.	Under consideration
7	The executive heads of the United Nations system organizations that have developed blockchain applications – in line with the call by the Secretary-General in his Roadmap for Digital Cooperation for the United Nations to deploy digital public goods – should follow, whenever possible, open-source principles when they develop software, and make available the codes to other United Nations organizations.	Accepted
8	The executive heads of the United Nations system organizations, through the relevant coordination mechanisms, including with support from the United Nations International Computing Centre, should consider the adoption of a non-binding inter-agency blockchain governance framework for use by interested organizations, with a view to ensuring coherent and consistent blockchain approaches across the system by the end of 2022, including for projects that may involve multiple United Nations organizations.	Accepted

#### **Managing cloud computing services in the United Nations system (JIU/REP/2019/5)**

1	The executive heads of the United Nations organizations should ensure that business continuity planning includes strategies and measures to mitigate the risk of failure by cloud service providers to deliver the contracted services.	Accepted
3	The executive heads of the United Nations organizations should put in place periodic procedures to ensure that their corporate ICT strategies, including those for cloud computing services, are aligned with the organizations' business needs and priorities, and yield value for the investment.	Accepted
4	The executive heads of the United Nations organizations should ensure that a comprehensive risk analysis exercise is undertaken before contracting ICT services, including cloud-based services. The risk analysis exercise should consider both technical and financial risks and benefits, and relevant safeguards should be included in the service-level agreement.	Accepted

<i>Recommendation number</i>	<i>Recommendation</i>	<i>Acceptance status</i>
<b>Records and archives management in the United Nations (JIU/REP/2013/2)</b>		
1	The Secretary-General and each of the executive heads of the United Nations entities covered by this report should review their respective regulatory frameworks governing records and archives management and recast them into a comprehensive and unequivocal set of principles, practice oriented procedures and rules to keep pace with changes in the record-keeping environment and technology, and cover the whole life cycle of recorded information. They should ensure strict compliance with those principles, procedures and rules for any materials identified as records of the organization or entity.	Accepted
2	The Secretary-General and each of the executive heads of the United Nations entities covered by this report, as well as their senior managers, should be accountable for ensuring that all departments, offices and other entities under their responsibility have developed and apply the basic components of records management programmes to all records for which they have managerial responsibility.	Under consideration
5	The Secretary-General, in his capacity as a Chair of the Chief Executives Board for Coordination, should create an inter-organizational task force chaired by an experienced records and archives management expert, bringing together those entities most interested in developing a common approach to the preservation of long-term and/or permanent digital records (strategy, policy and infrastructure).	Under consideration

### Recommendations of the Office of Internal Oversight Services

<i>Division</i>	<i>Date of issuance</i>	<i>Assignment number and project name</i>	<i>Recommendation number</i>	<i>Recommendation</i>	<i>Recommendation rating</i>
Internal Audit Division	12 February 2020	AT2019-517-02 Audit of processes for the development and acquisition of software applications at the United Nations Secretariat	4	The Office of Information and Communications Technology should: (a) provide guidance on the types of system development life cycle methodologies appropriate for projects based on their size and complexity; and (b) provide a standardized collaboration tool for the software development life cycle.	Important
Internal Audit Division	12 February 2020	AT2019-517-02 Audit of processes for the development and acquisition of software applications at the United Nations Secretariat	1	The Office of Information and Communications Technology, in collaboration with the Department of Management Strategy, Policy and Compliance, should strengthen the regulatory framework for software development and acquisition by: (a) ensuring that information and	Important

<i>Division</i>	<i>Date of issuance</i>	<i>Assignment number and project name</i>	<i>Recommendation number</i>	<i>Recommendation</i>	<i>Recommendation rating</i>
				communications technology (ICT) committees are constituted and meet periodically, as appropriate; (b) finalizing the delegation of authority for ICT; (c) providing direction on information security compliance and ensuring that entities certify their compliance with ICT security policies and standards; (d) clarifying the methodology for costing and sharing of application acquisition and support costs; (e) establishing an effective mechanism to globally track the total cost of ownership of ICT applications; and (f) implementing the decision of the General Assembly establishing Vienna as an Enterprise Application Centre.	
Internal Audit Division	12 February 2020	AT2019-517-02 Audit of processes for the development and acquisition of software applications at the United Nations Secretariat	2	The Office of Information and Communications Technology, in collaboration with the Department of Management Strategy, Policy and Compliance, should: (a) establish appropriate mechanisms in consultation with the Office of Legal Affairs to protect the Organization's intellectual property for internally developed software; and (b) require all entities within the Secretariat to identify internally developed software that need such protection so that appropriate protection could be secured.	Important
Internal Audit Division	13 February 2020	AT2019-517-03 Audit of secure communications and related telecommunications infrastructure at the United Nations Secretariat	1	The Department of Management Strategy, Policy and Compliance, in collaboration with the Office of Information and Communications Technology, should enhance the regulatory framework for end-to-end secure communications by: (a) defining global roles and responsibilities; (b) deploying a	Important

<i>Division</i>	<i>Date of issuance</i>	<i>Assignment number and project name</i>	<i>Recommendation number</i>	<i>Recommendation</i>	<i>Recommendation rating</i>
				mechanism for constant review and update of policies and procedures in response to new technology and new information security threats; (c) implementing data governance mechanisms, procedures and tools for data loss prevention to address the conditions noted in the report; and (d) implementing a continuous programme of user awareness and training that sensitizes users to using secure communications for disseminating classified information.	
Internal Audit Division	13 February 2020	AT2019-517-03 Audit of secure communication and related telecommunications infrastructure at the United Nations Secretariat	10	The Office of Information and Communications Technology should implement a global policy and standardize procedures and tools for ICT change management and configuration management.	Important
Internal Audit Division	13 February 2020	AT2019-517-03 Audit of secure communication and related telecommunications infrastructure at the United Nations Secretariat	2	The Office of Information and Communications Technology should: (a) clarify responsibilities for information security compliance reviews of shared ICT resources globally; (b) provide procedures and guidelines for conducting periodic vulnerability assessments of the ICT infrastructure; (c) deploy tools and standardized procedures based on a cost recovery model for systematic identification, review and mitigation of information security incidents globally; (d) coordinate the effort to ensure that disaster recovery plans are documented and tested globally; and (e) implement a global strategy for mitigating the risks of obsolescence of high risk equipment.	Important

<i>Division</i>	<i>Date of issuance</i>	<i>Assignment number and project name</i>	<i>Recommendation number</i>	<i>Recommendation</i>	<i>Recommendation rating</i>
Internal Audit Division	13 February 2020	AT2019-517-03 Audit of secure communication and related telecommunications infrastructure at the United Nations Secretariat	5	The Office of Information and Communications Technology should: (a) assign adequate resources dedicated to network compliance monitoring reviews and schedule a plan for regular network maintenance for United Nations Headquarters; and (b) document security standards for high-risk areas identified.	Important
Internal Audit Division	13 February 2020	AT2019-517-03 Audit of secure communication and related telecommunications infrastructure at the United Nations Secretariat	6	The Office of Information and Communications Technology should: (a) document and institute procedures for ensuring that user requirements for secure communications are adequately considered; (b) define procedures in collaboration with the Procurement Division for ensuring that ICT security standards and requirements are embedded into procurement activity; (c) document policies and procedures for use of encryption to secure sensitive/ classified information; and (d) update the managed videoconferencing procedures with a procedure to seek classification requirements and consent for monitoring of strictly confidential content.	Important
Internal Audit Division	13 February 2020	AT2019-517-03 Audit of secure communication and related telecommunications infrastructure at the United Nations Secretariat	9	The Office of Information and Communications Technology should: (a) implement periodic risk and vulnerability assessments and performance reviews of the New York Headquarters ICT network; (b) formalize its use of the third-party vendor's optical fibre lines issue as described in this report; (c) renew the expired manhole licences with the City of New York; and (d) complete remediation activity on gaps identified in the Office for Internal Oversight Services vulnerability scan reports.	Important

<i>Division</i>	<i>Date of issuance</i>	<i>Assignment number and project name</i>	<i>Recommendation number</i>	<i>Recommendation</i>	<i>Recommendation rating</i>
Internal Audit Division	30 September 2020	AT2019-517-04 Audit of document management systems and related processes in the United Nations Secretariat	1	The Office of Information and Communications Technology, in collaboration with the Department of Management Strategy, Policy and Compliance, should: (a) explain document management within the context of the information management framework for the Secretariat; and (b) develop standards for managing documents throughout the life cycle.	Important
Internal Audit Division	30 September 2020	AT2019-517-04 Audit of document management systems and related processes in the United Nations Secretariat	3	The Office of Information and Communications Technology should assist business owners in gathering user requirements pertaining to document management, and in configuring and customizing enterprise solutions to meet their specific needs in document management.	Important
Internal Audit Division	30 September 2020	AT2019-517-04 Audit of document management systems and related processes in the United Nations Secretariat	4	The Office of Information and Communications Technology should clarify the enterprise solution for document management in the Secretariat and for the storage of strictly confidential documents.	Important
Internal Audit Division	30 September 2020	AT2019-517-04 Audit of document management systems and related processes in the United Nations Secretariat	5	The Office of Information and Communications Technology should: (a) prepare a plan for migration of documents from legacy applications to SharePoint Online; (b) implement a plan for decommissioning of legacy applications after migration is complete; and (c) implement change management activities and strengthen the communication and coordination mechanism for ongoing deployment of the Unite Workspace project.	Important



<i>Division</i>	<i>Date of issuance</i>	<i>Assignment number and project name</i>	<i>Recommendation number</i>	<i>Recommendation</i>	<i>Recommendation rating</i>
Internal Audit Division	30 September 2020	AT2019-517-04 Audit of document management systems and related processes in the United Nations Secretariat	6	The Department of Management Strategy, Policy and Compliance, in collaboration with the Department of Operational Support and the Office of Information and Communications Technology, should establish a retention policy for digital/electronic documents.	Important
Internal Audit Division	24 July 2018	AT2017-517-01 Audit of acquisition and management of information and communications technology assets in the Office of Information and Communications Technology	1	The Office of Information and Communications Technology should develop policies and monitoring mechanisms to maximize the benefits of investment in ICT through global sourcing and contracting arrangements.	Important
Internal Audit Division	24 July 2018	AT2017-517-01 Audit of acquisition and management of information and communications technology assets in the Office of Information and Communications Technology	12	The Department of Management should document a policy for standardizing, assigning, managing and disposing of mobile devices across the United Nations Secretariat.	Important
Internal Audit Division	24 July 2018	AT2017-517-01 Audit of acquisition and management of information and communications technology assets in the Office of Information and Communications Technology	3	The Office of Information and Communications Technology should document an annual ICT acquisition plan and appropriate procedures for managing ICT acquisition and stocks globally.	Important
Internal Audit Division	24 July 2018	AT2017-517-01 Audit of acquisition and management of information and communications technology assets in the Office of Information and Communications Technology	4	The Office of Information and Communications Technology should: (a) deploy a central software licence library for capturing actual usage, identifying non-licensed software, and leveraging economies of scale; and (b) ensure that intangible assets are identified and capitalized.	Important

<i>Division</i>	<i>Date of issuance</i>	<i>Assignment number and project name</i>	<i>Recommendation number</i>	<i>Recommendation</i>	<i>Recommendation rating</i>
Internal Audit Division	24 July 2018	AT2017-517-01 Audit of acquisition and management of information and communications technology assets in the Office of Information and Communications Technology	10	The Office of Information and Communications Technology should: (a) review all ICT assets in its purview and implement procedures to ensure compliance with applicable regulations and rules on property, plant and equipment; (b) enrich Umoja with all necessary data; (c) deploy technology to verify assets that are part of the building structure; and (d) track the movement and assignment of all ICT-related assets.	Important
Internal Audit Division	24 July 2018	AT2017-517-01 Audit of acquisition and management of information and communications technology assets in the Office of Information and Communications Technology	8	The Office of Information and Communications Technology should review and clean up incorrect data on Office of Information and Communications Technology equipment and assets in Umoja.	Important
Internal Audit Division	24 July 2018	AT2017-517-01 Audit of acquisition and management of information and communications technology assets in the Office of Information and Communications Technology	7	The Office of Information and Communications Technology should document a policy for obsolescence and replacement of ICT assets that is reflected in proposals for capital and operating budgets.	Important
Internal Audit Division	6 December 2019	AT2018-517-01 Audit of the Inspira Human Resources System	1	The Office of Information and Communications Technology, in coordination with the Department of Management Strategy, Policy and Compliance and the Department of Operational Support, should: (a) perform an assessment justified by a quantified business case concerning the viability of the Inspira system and determine whether to invest in further enhancements to the system or	Important

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				replace it based on current and future business requirements provided by the Department of Management Strategy, Policy and Compliance and the Department of Operational Support; and (b) update the actual cost of ownership on a regular basis.	
Internal Audit Division	6 December 2019	AT2018-517-01 Audit of the Inspira Human Resources System	9	The Office of Information and Communications Technology, in collaboration with the Department of Management Strategy, Policy and Compliance and the Department of Operational Support, should establish and implement record/document management procedures for Inspira data in accordance with existing policies on data classification, sensitivity and handling.	Important
Internal Audit Division	6 December 2019	AT2018-517-01 Audit of the Inspira Human Resources System	5	The Office of Information and Communications Technology, in collaboration with the Department of Management Strategy, Policy and Compliance and the Department of Operational Support, should explore the enhancement of data interfaces between Umoja and Inspira to improve system efficiency.	Important
Internal Audit Division	6 December 2019	AT2018-517-01 Audit of the Inspira Human Resources System	7	The Office of Information and Communications Technology should define and communicate the requirements for third-party data access, data encryption, masking of sensitive data, and incident response requirements.	Important
Internal Audit Division	6 December 2019	AT2018-517-01 Audit of the Inspira Human Resources System	8	The Office of Information and Communications Technology, in collaboration with the Department of Operational Support, should: (a) conduct a business impact assessment of Inspira-related activities and	Important

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				document a business continuity plan; and (b) conduct periodic tests to ensure system availability.	
Internal Audit Division	21 November 2019	AT2018-519-01 Audit of Umoja system security, architecture and design	5	The Office of Information and Communications Technology, in collaboration with the United Nations Global Service Centre, should: (a) define the roles and responsibilities of all stakeholders in the “Umoja Infrastructure Service Management” service document (service level agreement); (b) incorporate coordination and communication protocols for Umoja infrastructure stakeholders; and (c) validate the service level agreement with the Umoja Office before finalization.	Important
Internal Audit Division	21 November 2019	AT2018-519-01 Audit of Umoja system security, architecture and design	3	The Office of Information and Communications Technology should: (a) implement intrusion detection procedures for the Umoja System; and (b) establish a schedule for conducting periodic vulnerability assessments of the Umoja application and infrastructure in accordance with its technical procedures.	Important
Internal Audit Division	14 October 2016	AH2015-513-04 Audit of records management at the United Nations Headquarters in New York	1	The Department of Management should, in consultation with the Office of Legal Affairs, revise the Secretary-General’s bulletin on record-keeping and the management of United Nations archives to clearly define the scope of responsibility of the Archives and Records Management Section.	Important
Internal Audit Division	14 October 2016	AH2015-513-04 Audit of records management at the United Nations Headquarters in New York	3	The Office of Conference and Support Services should, in consultation with the Office of Legal Affairs, establish a governance framework for electronic records to ensure their digital continuity and preservation.	Important

<i>Division</i>	<i>Date of issuance</i>	<i>Assignment number and project name</i>	<i>Recommendation number</i>	<i>Recommendation</i>	<i>Recommendation rating</i>
Internal Audit Division	14 October 2016	AH2015-513-04 Audit of records management at the United Nations Headquarters in New York	5	The Department of Management should update the Secretary-General's bulletin on information sensitivity, classification and handling ( <a href="#">ST/SGB/2007/6</a> ) to reflect a move of the Secretariat to a paperless environment.	Important
Internal Audit Division	12 December 2016	AT2016-615-01 Audit of electronic mail and information and communications technology in the Department of Field Support	2	The Archives and Records Management Section should document policies/standards to ensure that email records are identified, managed and stored in accordance with the requirements for record-keeping set forth in the Secretary-General's bulletin <a href="#">ST/SGB/2007/5</a> .	Important
Internal Audit Division	31 December 2021	AT2021-517-01 Audit of network access management and security in the United Nations Secretariat	1	The Office of Information and Communications Technology should: (a) clarify responsibilities for enterprise information security monitoring and compliance reviews vis-à-vis local monitoring and response activity; (b) deploy tools and standardized procedures for systematic and timely identification, review and mitigation of network security incidents globally; (c) undertake a comprehensive network capacity gap assessment to meet the information security needs of the Organization; and (d) ensure that the Information Security Board defines key performance indicators for assessing the network security posture of the Secretariat.	Important
Internal Audit Division	31 December 2021	AT2021-517-01 Audit of network access management and security in the United Nations Secretariat	2	The Office of Information and Communications Technology should standardize network management and security procedures by: (a) aligning enterprise ICT security risks with feeds from ICT operational level security risks	Important

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				globally; (b) establishing compliance and enforcement mechanisms for global monitoring and enforcement of network security management; and (c) documenting technical procedures for image management and wireless network configuration.	
Internal Audit Division	31 December 2021	AT2021-517-01 Audit of network access management and security in the United Nations Secretariat	3	The Office of Information and Communications Technology, in coordination with the United Nations Global Service Centre, should strengthen the operational level agreement by establishing a mechanism to periodically review and monitor the effectiveness of operational level agreement in securing the network infrastructure.	Important
Internal Audit Division	31 December 2021	AT2021-517-01 Audit of network access management and security in the United Nations Secretariat	4	The Office of Information and Communications Technology, in coordination with the United Nations Global Service Centre, should establish central responsibility and processes for standardizing the network architecture, maintenance and update of network architecture documentation, and management of the Internet Protocol address spaces.	Important
Internal Audit Division	31 December 2021	AT2021-517-01 Audit of network access management and security in the United Nations Secretariat	5	The Office of Information and Communications Technology should: (a) establish a standard for the secure configuration and management of network devices across the Secretariat; (b) deploy tools to verify the configuration of the network devices with a baseline on a periodic basis; and (c) protect network topology diagrams with strong passwords.	Important

<i>Division</i>	<i>Date of issuance</i>	<i>Assignment number and project name</i>	<i>Recommendation number</i>	<i>Recommendation</i>	<i>Recommendation rating</i>
Internal Audit Division	31 December 2021	AT2021-517-01 Audit of network access management and security in the United Nations Secretariat	7	The Office of Information and Communications Technology, in coordination with the United Nations Global Service Centre, should develop a comprehensive plan for conducting network security vulnerability scans, including the recording, analysis and follow-up of identified vulnerabilities in the Secretariat's networks.	Important
Internal Audit Division	31 December 2021	AT2021-517-01 Audit of network access management and security in the United Nations Secretariat	8	The Office of Information and Communications Technology should: (a) strengthen the capacity and scope for its penetration testing by assigning adequate resources; and (b) establish a procedure for analysing the results of penetration tests to implement the required security measures across the Secretariat.	Important
Internal Audit Division	31 December 2021	AT2021-517-01 Audit of network access management and security in the United Nations Secretariat	9	The Office of Information and Communications Technology should: (a) conduct an assessment of the tools required to perform effective vulnerability scans on the Secretariat's network; (b) ensure that existing tools such as Firewall Analyzer are regularly used; and (c) establish a standard for monitoring file integrity.	Important
Internal Audit Division	31 December 2021	AT2021-517-01 Audit of network access management and security in the United Nations Secretariat	11	The Office of Information and Communications Technology and the United Nations Global Service Centre should develop appropriate plans to test network resilience on a periodic basis.	Important
Internal Audit Division	31 December 2021	AT2021-517-01 Audit of network access management and security in the United Nations Secretariat	12	The Office of Information and Communications Technology should: (a) establish performance indicators to enable assessment of the effectiveness of the threat hunting solution; and	Important



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				(b) develop adequate documentation and standard operating procedures for the solution.	
Internal Audit Division	31 December 2021	AT2021-517-01 Audit of network access management and security in the United Nations Secretariat	13	The Office of Information and Communications Technology, in coordination with the United Nations Global Service Centre, should develop: (a) performance indicators to assess the effectiveness of the incident management process; and (b) procedures to communicate incident reports with root cause analysis in a timely manner.	Important
Internal Audit Division	6 April 2022	AT2020-517-03 Audit of business intelligence and data warehouse systems in the United Nations Secretariat	2	The Office of Information and Communications Technology should: (a) facilitate a high-level assessment of the data architecture requirements; (b) define and establish an enterprise data architecture to facilitate effective business intelligence; and (c) define the standards for the use and oversight of visualization platforms for enterprise systems.	Important
Internal Audit Division	6 April 2022	AT2020-517-03 Audit of business intelligence and data warehouse systems in the United Nations Secretariat	8	The Office of Information and Communications Technology should conduct a security assessment on the third-party platform including data residency requirements.	Important
Internal Audit Division	31 August 2021	AT2020-517-01 Audit of cloud services in the United Nations Secretariat	1	The Office of Information and Communications Technology should: (a) update the cloud strategy based on a systematic assessment of the Secretariat's business requirements; and (b) implement change management mechanisms to facilitate the adoption of cloud services and stakeholder engagement across the Secretariat.	Important

<i>Division</i>	<i>Date of issuance</i>	<i>Assignment number and project name</i>	<i>Recommendation number</i>	<i>Recommendation</i>	<i>Recommendation rating</i>
Internal Audit Division	31 August 2021	AT2020-517-01 Audit of cloud services in the United Nations Secretariat	2	The Office of Information and Communications Technology should: (a) strengthen cloud governance by establishing effective oversight; (b) establish the requirement for conducting procurement due diligence in the selection of future cloud service providers; (c) conduct an assessment of the impact of the missing cloud services and institute compensating controls as appropriate; (d) ensure that the roles and responsibilities of all service providers and self-managed subscribers are clearly defined; (e) enhance existing policies and procedures to reflect the cloud environment risk profile; and (f) define metrics and mechanisms for measuring, tracking and reporting of benefits realization.	Important
Internal Audit Division	31 August 2021	AT2020-517-01 Audit of cloud services in the United Nations Secretariat	3	The Office of Information and Communications Technology should: (a) ensure clarity, consistency and transparency of cloud services costs, budget, cost recovery and reporting mechanisms; and (b) develop guidance and templates to facilitate cloud consumption assessments for planning and budgeting purposes.	Important
Internal Audit Division	31 August 2021	AT2020-517-01 Audit of cloud services in the United Nations Secretariat	4	The Office of Information and Communications Technology should: (a) reassess the current architecture and provide the required integration between the public and private cloud, scalability and flexibility described in the cloud strategy; (b) implement mechanisms to address the resource gap related to knowledge, skills and tools; (c) strengthen the role of the Enterprise Architecture Task Force; and	Important

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				(d) establish a Community of Practice to facilitate knowledge management, tracking of best practices and lessons learned.	
Internal Audit Division	31 August 2021	AT2020-517-01 Audit of cloud services in the United Nations Secretariat	5	The Office of Information and Communications Technology should: (a) establish mechanisms to integrate internal and external service support to facilitate timely response and monitoring of service; (b) establish cloud service-level agreements with external service providers for defining service requirements and monitoring; and (c) standardize the criteria for prioritizing internal service requests in the Cloud service-level agreements vis-à-vis prioritization levels in iNeed.	Important
Internal Audit Division	31 August 2021	AT2020-517-01 Audit of cloud services in the United Nations Secretariat	6	The Office of Information and Communications Technology should formalize and update procedures for the request, review and approval of change and configurations management, guardrails and related exceptions.	Important
Internal Audit Division	31 August 2021	AT2020-517-01 Audit of cloud services in the United Nations Secretariat	7	The Office of Information and Communications Technology should: (a) provide clarity to cloud service subscribers on the definition of sensitive and non-sensitive operations; (b) finalize the updated ICT Technical Procedure on Data Retention; (c) assess the feasibility and develop a plan to relocate data stored in unapproved locations; and (d) define data residency requirements, policies and procedures.	Important
Internal Audit Division	31 August 2021	AT2020-517-01 Audit of cloud services in the United Nations Secretariat	8	The Office of Information and Communications Technology should: (a) define the procedures for assessment, oversight and compliance with	Important

<i>Division</i>	<i>Date of issuance</i>	<i>Assignment number and project name</i>	<i>Recommendation number</i>	<i>Recommendation</i>	<i>Recommendation rating</i>
				information security policies and the use of secure coding practices; and (b) review the results of the Azure console security configurations and implement the recommendations of the independent assessment.	
Internal Audit Division	31 August 2021	AT2020-517-01 Audit of cloud services in the United Nations Secretariat	9	The Office of Information and Communications Technology should strengthen access control mechanisms by: (a) reviewing the current architecture for the use of multi-factor authentication across systems and applications; and (b) developing guidance and defining the roles and responsibilities for use of eDiscovery.	Important
Internal Audit Division	31 August 2021	AT2020-517-01 Audit of cloud services in the United Nations Secretariat	10	The Office of Information and Communications Technology should ensure that all cloud subscribers define their data backup and disaster recovery requirements.	Important
Internal Audit Division	31 August 2021	AT2020-517-01 Audit of cloud services in the United Nations Secretariat	11	The Office of Information and Communications Technology should establish Secretariat-wide policies and procedures for end-users to detect, report and promptly respond to data privacy and security incidents.	Important
Internal Audit Division	22 May 2019	AT2018-615-01 Audit of information and communications technology services provided by United Nations agencies to the erstwhile Department of Field Support	3	The Office of Information and Communications Technology should: (a) renegotiate the current memorandum of understanding, service delivery agreements and billing methodologies with Agency A and Agency B to mitigate the observed gaps; (b) require from Agency A detailed description and breakdown of service costs in alignment with its service catalogues; and (c) resolve the outstanding invoices of \$5 million under dispute with Agency A and recover any additional overpayments.	Important

<i>Division</i>	<i>Date of issuance</i>	<i>Assignment number and project name</i>	<i>Recommendation number</i>	<i>Recommendation</i>	<i>Recommendation rating</i>
Internal Audit Division	22 May 2019	AT2018-615-01 Audit of information and communications technology services provided by United Nations agencies to the erstwhile Department of Field Support	1	The Office of Information and Communications Technology should: (a) establish an ICT service delivery model defining the role of second and third-party ICT service providers within the context of an ICT service delivery model; and (b) document appropriate policy directives for engaging with second-party ICT service providers.	Important
Internal Audit Division	22 May 2019	AT2018-615-01 Audit of information and communications technology services provided by United Nations agencies to the erstwhile Department of Field Support	2	The Office of Information and Communications Technology should strengthen its mechanisms for engagement of second-party providers of ICT services by: (a) conducting due diligence to ensure the cost-effectiveness of services procured by the Organization; and (b) ensuring that scalability is built into the contractual arrangements with second-party service providers.	Important
Internal Audit Division	22 May 2019	AT2018-615-01 Audit of information and communications technology services provided by United Nations agencies to the erstwhile Department of Field Support	4	The Office of Information and Communications Technology should define a methodology for calculating charge backs and develop mechanisms for visibility of charge backs allocated to each field mission.	Important
Internal Audit Division	22 May 2019	AT2018-615-01 Audit of information and communications technology services provided by United Nations agencies to the erstwhile Department of Field Support	5	The Office of Information and Communications Technology should: (a) assess and update the financial agreements with Agency B to prevent potential risks of overcharging such as salary costs, project management and administrative fees; and (b) ensure in future financial agreements with Agency B that the standard staff costs are aligned with those published by the International Civil Service Commission.	Important

<i>Division</i>	<i>Date of issuance</i>	<i>Assignment number and project name</i>	<i>Recommendation number</i>	<i>Recommendation</i>	<i>Recommendation rating</i>
Internal Audit Division	22 May 2019	AT2018-615-01 Audit of information and communications technology services provided by United Nations agencies to the erstwhile Department of Field Support	6	The Office of Information and Communications Technology should strengthen its performance management monitoring processes for ICT services outsourced to Agency A and Agency B.	Important