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Fourth annual progress report of the Board of Auditors on the implementation of the information and communications technology strategy

Note by the Secretary-General

The Secretary-General has the honour to transmit herewith to the General Assembly a letter dated 21 July 2020 from the Chair of the Board of Auditors together with the report of the Board on progress in the implementation of the information and communications technology strategy.

* [A/75/50](#).



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Letter of transmittal

Letter dated 21 July 2020 from the Chair of the Board of Auditors addressed to the President of the General Assembly

I have the honour to transmit to you herewith the fourth report of the Board of Auditors on the implementation of the information and communications technology strategy for the United Nations.

(Signed) Kay **Scheller**
President of the German Federal Court of Auditors
Chair of the Board of Auditors

Information and communications technology: key facts

Budget and resources

\$1,376.4 million	Information and communications technology (ICT) resources, excluding Umoja, for the biennium 2018–2019
44.89 per cent	Estimated percentage of the annualized ICT budget relating to peacekeeping operations (2018/19)

Source: fourth progress report of the Secretary-General on the status of implementation of the ICT strategy for the United Nations ([A/73/384](#)).

Timeline

October 2014	The Secretary-General submitted the ICT strategy (A/69/517)
December 2014	The General Assembly adopted its resolution 69/262 , in which it endorsed the ICT strategy
September 2015	The Secretary-General submitted his first report on the status of implementation of the ICT strategy for the United Nations (A/70/364 and A/70/364/Corr.1)
December 2015	The Board of Auditors submitted its report on progress in the handling of ICT affairs in the Secretariat (A/70/581)
February 2016	The Advisory Committee on Administrative and Budgetary Questions submitted its report on progress in the handling of ICT affairs in the Secretariat (A/70/755) and recommended that the Board of Auditors submit an annual progress report during the five-year implementation period of the ICT strategy
April 2016	The General Assembly adopted resolution 70/238 B , in which it endorsed the conclusions and recommendations contained in the report of the Advisory Committee (A/70/755)
September 2016	The Secretary-General submitted his second progress report on the status of implementation of the ICT strategy for the United Nations (A/71/400)
July 2017	The Board of Auditors submitted its first annual progress report on the implementation of the ICT strategy for the United Nations (A/72/151) in pursuance of the recommendation of the Advisory Committee on Administrative and Budgetary Questions
April 2018	The Secretary-General submitted his third progress report on the status of implementation of the ICT strategy for the United Nations (A/72/755/Rev.1)
July 2018	The Board of Auditors submitted its second annual progress report on the implementation of the ICT strategy (A/73/160) in pursuance of the recommendation of the Advisory Committee on Administrative and Budgetary Questions
September 2018	The Secretary-General submitted his fourth progress report on the status of implementation of the ICT strategy for the United Nations (A/73/384)

July 2019	The Board of Auditors submitted its third annual progress report on the implementation of the ICT strategy (A/74/177) in pursuance of the recommendation of the Advisory Committee on Administrative and Budgetary Questions
September 2019	The Secretary-General submitted his fifth progress report on the status of implementation of the ICT strategy for the United Nations (A/74/353)

Strategy

20	Number of strategic projects underpinning the strategy being reported on by the Office of Information and Communications Technology in document A/71/400 . Of 20 projects, 19 have been reported as completed
2014–2020	The five-year time frame of 2013–2017 indicated in the strategic road map (A/69/517 , annex I) has been revised to 2014–2020, in line with the second report of the Secretary-General on the status of implementation of the ICT strategy for the United Nations (A/71/400). As General Assembly resolution 69/262 , which welcomed the ICT strategy for the United Nations, was issued on 10 February 2015, the ICT strategy completed its five years on 10 February 2020

Fourth annual progress report of the Board of Auditors on the implementation of the information and communications technology strategy for the United Nations

Summary

Introduction

In 2014, at its sixty-ninth session, the General Assembly adopted its resolution [69/262](#), in which it endorsed the information and communications technology (ICT) strategy for the United Nations proposed in the report of the Secretary-General on ICT in the United Nations ([A/69/517](#)). The idea behind the strategy was to create a unified global provision of ICT to enable the successful delivery of the mandate of the United Nations.

The Secretary-General submitted his fifth progress report on the status of implementation of the ICT strategy for the United Nations ([A/74/353](#)) on 17 September 2019. The period of the implementation of the ICT strategy for the United Nations ended on 10 February 2020, with the completion of five years following the date of issuance of General Assembly resolution [69/262](#), which welcomed the ICT strategy.

The Board of Auditors submitted its report on progress in the handling of ICT affairs in the Secretariat ([A/70/581](#)) to the General Assembly on 1 December 2015. After considering that report, the Advisory Committee on Administrative and Budgetary Questions recommended that the General Assembly request the Board to submit an annual progress report during the five-year implementation period of the ICT strategy, and the Assembly endorsed that recommendation in its resolution [70/238 B](#). The Board submitted its first ([A/72/151](#)), second ([A/73/160](#)) and third ([A/74/177](#)) annual progress reports on 17 July 2017, 24 July 2018 and 16 July 2019, respectively, in compliance with that resolution. The Advisory Committee endorsed the recommendations of the Board in its related reports ([A/72/7/Add.51](#), [A/73/759](#) and [A/74/588](#)). The General Assembly, in its resolution [72/262 C](#), endorsed the conclusions and recommendations contained in the report of the Advisory Committee on the first progress report of the Board. The conclusions and recommendations contained in the report of the Advisory Committee on the second and third progress reports of the Board were discussed in the Fifth Committee, but there had been no resolution as at the date of finalization of the present report. The present report is the fourth annual progress report of the Board; it provides an examination of the implementation of the strategy during 2019.

Key findings

The key findings of the Board are presented below.

Governance and leadership

Governance framework

The Information and Communications Technology Steering Committee, the governance body established for ICT following the management reform process, did not have representation from the bulk of client departments and offices, unlike previous governance bodies (the Information and Communication Technology Executive Committee and the Information and Communications Technology Board). The Board considers participation and coordination of the business owners and supported entities to be essential in ensuring better transparency and accountability in the ICT area.

Gaps in organization of functions and activities

The Board noted that there was a duplication and overlapping of functions between the three divisions of the restructured Office of Information and Communications Technology, following the management reform process. Some areas where the blurring of lines of responsibility and accountability have been seen are data management, application management, ICT strategy oversight, policy and compliance service, innovative technology, and business intelligence and analytics.

Project implementation

The Board noted that, out of seven projects reported to be ongoing in the fourth progress report of the Secretary-General (A/73/384), six had been formally closed through change requests approved by the Chief Information Technology Officer (April 2019) well ahead of the completion of the ICT strategy implementation period and without completing all envisaged activities. An end project report was prepared only for the application rationalization project.

Modernization*Umoja mainstreaming*

The Umoja project is scheduled for completion by December 2020 following which it has to be mainstreamed. The specifics of the mainstreaming plan are yet to be finalized. Secretariat entities that may be entrusted with the responsibility to complete the remaining work of Umoja Extension 2 subprojects, provide ongoing production support and carry out continuous improvements to the enterprise resource planning solution in the future should have adequate opportunities to examine and understand the functions and project resources to be taken over. Detailed consultations need to be taken up early between the Umoja project team, the Office of Information and Communication Technology and other identified Secretariat entities to which the functions and project personnel are likely to be transferred by the end of December 2020, for the efficiency and effectiveness of mainstreamed activities.

Information security

The Board noted that the short-term measures for promoting information security in the Secretariat, as had been envisaged in the ICT strategy, were yet to be completed after five years of implementation of the strategy. That led to vulnerabilities, as seen from the information security breach incident experienced in Vienna in 2019.

Disaster recovery management

The Board was informed that all critical applications were planned to be moved to enterprise data centres or the cloud. The Board noted that, although the Office had a role to oversee and coordinate implementation of the disaster recovery plan, it could not provide appropriate evidence regarding the conduct of disaster recovery exercises for all identified critical applications.

Transformation*Application rationalization*

Although the strategy document envisaged that all application development outside of enterprise application centres was to cease, 19 out of 23 applications created in 2019 were created outside of such centres. The lack of control over application development exposed the Organization to the risk of duplicating expenditure and associated security risks. In addition, there is a need to appropriately depict the future

road map regarding existing applications in the Unite applications. The decision to consolidate 18 identified applications with Inspira also needs to be reviewed.

Website rationalization

As at 31 December 2019, there were 802 Secretariat websites, which included 32 websites created in 2019. The Board noted that only 60 per cent of the websites conformed to approved technologies. A total of 4 of the 32 new websites developed in 2019 did not conform to approved technologies. Only 3 per cent of websites were fully compliant with the five key requirements. In addition, 31 per cent of websites were fully compliant with the ICT security requirements, while the balance remained partially compliant or non-compliant. Most of the new websites created in 2019 were developed outside of enterprise application centres, although the ICT strategy envisaged that all application development outside of enterprise application centres was to cease.

Network and infrastructure

In 2019, 3 of 45 critical incidents (6.67 per cent) and 32 of 1,172 high category incidents (2.73 per cent) were not resolved in time. There were differences among the contracts with the two vendors at national data centres in Brindisi, Italy (Global Service Centre) and Valencia, Spain (United Nations Information and Communications Technology Facility) in the definition of key performance indicators, although the service-level agreements were signed for the same Network Control Centre. The vendors' performance measurement was also found to be inconsistent with the respective contracts. Despite the breaches of key performance indicator thresholds, no penalty was levied on the vendors.

Unite Service Desk

The Board noted that the Office and other stakeholders could get the data about incidents and requests for service about Umoja through iNeed management reports, but they did not offer the flexibility of systematic analyses, which could be better performed only off-system. As at 31 December 2019, there was a backlog of 968 incidents and 1,492 requests for service awaiting resolution for over 296 days and 171 days, respectively. The owners of enterprise applications, with the exception of Umoja, had not implemented service-level agreements with client organizations, leading to the absence of a formal document establishing targeted timelines for resolution or closure of requests based on their criticality.

Innovation

Hybrid cloud computing

The Board observed that the cloud strategy was formally approved in April 2018 and that the activities envisaged to be completed by December 2018 were not yet complete. A total of 49 of 91 applications selected for migration to the cloud had been migrated by February 2020. The Office participated in an assessment of a hybrid scheme of cloud services in 2019, which identified potential concerns with critical issues related to security and governance.

Information management

The Office, as a part of the Unite Workspace project, had created SharePoint Online sites (under stage I) for departments at Headquarters and had trained 518 site owners by February 2020. The policies for record-keeping and the management of United Nations archives, information sensitivity, data classification and handling were

not revised. Moreover, there was no policy for information privacy and integrity to deal with the challenges posed by the use of cloud-based systems.

Optimal utilization of ICT resources

Global sourcing project

Although the five-year period for the implementation of the ICT strategy has reached its end, contracts under the global sourcing project were yet to be awarded. While the contract for application services was in the stage of financial negotiations with vendors, the contract award for ICT services had been cancelled, as only one vendor had been found technically qualified for both packages of ICT services. The scope of work for ICT services was being revisited. The Board also noted that, as of February 2020, the Office has not determined any plan for efficiently transitioning from current service providers to the new contractual modality.

Avoidable expenditure on Microsoft Office 365 licence and desktop telephones

The Office paid \$2.28 million on the use of Microsoft Office 365 licences and IP telephones for 5,441 dormant user accounts as at 31 December 2019, which could have been avoided if the Office of Information and Communications Technology had proactively liaised with the administrative focal point or human resources of the client departments in tracking and disabling dormant accounts.

Defragmentation

The Board noted that, even by March 2020, the ICT units of only four departments had been consolidated, and a unit of one department had been partially consolidated. Although it had been intended, the Chief Information Technology Officer did not engage in the ICT budget preparation process for Secretariat entities. The Office confirmed that it did not have any information on the budget for ICT activities in various entities under different funding sources. The Office also accepted that it could have leveraged the information available in Umoja more effectively regarding ICT financial information.

Recommendations

While the recommendations of the Board are presented in detail in the present report, its main recommendations are that the Administration:

- (a) **Ensure participation and representation from client departments and offices (business owners) in the ICT governance structure to ensure that ICT activities are aligned with organizational priorities and to improve transparency and strengthen accountability;**
- (b) **Map the functions, roles and responsibilities of the divisions, sections and services within the Office in order to avoid overlapping and duplication of functions;**
- (c) **Develop an accountability framework for ICT and monitor it in line with its role as a second line of defence for ICT functions;**
- (d) **Carry out a post-project review of all projects, as envisaged in the project management framework, using the mandated templates for better appreciation of their status and achievements;**
- (e) **Formalize the Umoja mainstreaming and transition plan at the earliest possible time, in consultation with the identified Secretariat entities to which the functions and project personnel are likely to be transferred;**

(f) Take forward the information security initiatives identified earlier, such as asset classification, enhanced awareness and network segmentation, and undertake appropriate initiatives to ensure better compliance by the departments and offices;

(g) Develop a road map for undertaking disaster recovery exercises for all critical applications and put in place a mechanism to ensure that entities prepare disaster recovery plans and test them, in line with the prescribed procedure;

(h) Introduce procedural controls through a technical procedure document for unified clearance from the Enterprise Solutions Service before application development;

(i) Review the future road map of all applications identified for consolidation in Inspira, in line with decisions taken regarding Inspira. 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;

(j) Ensure the accountability of vendors for non-achievement of prescribed key performance indicators;

(k) Align the key performance indicators in the next contract (for both of the locations) so that they are consistent and homogeneous and reflect the operational requirements of the network;

(l) Take steps for the formulation of appropriate performance benchmarks for the resolution of incidents and requests for enterprise applications based on service-level agreements, and monitor the performance of the Unite Service Desk against them;

(m) Improve the compliance of third-party cloud systems through the implementation of high-impact recommendations, in particular for such aspects as security, availability and performance;

(n) Develop a comprehensive strategic road map with the user departments and offices, and set achievable milestones for the timely completion of the hybrid cloud computing project so that the envisaged cost savings are achieved;

(o) Make efforts to adhere to the milestones set for the timely completion of the Unite Workspace project;

(p) 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;

(q) Establish an improved collaborative mechanism with respect to dormant account holders with the administrative focal points of the departments and offices concerned to disable accounts and telephone connections that are no longer needed;

(r) Consider briefing the Information and Communications Technology Steering Committee on the potential operational and financial risks presented by the dormant accounts and seek its intervention on the matter;

(s) Continue its efforts towards the defragmentation of the ICT environment, including ensuring oversight on ICT-related budgets across the Secretariat, duty stations and field missions.

I. Background

1. In its resolution [69/262](#), the General Assembly endorsed the information and communications technology (ICT) strategy for the United Nations proposed in the report of the Secretary-General on ICT in the United Nations ([A/69/517](#)). The strategy is focused on five major areas or key drivers, namely, a strengthened governance and leadership framework, modernization in support of organizational priorities, the transformation of ICT delivery, innovation to foster new technological solutions in the long term, and optimal use of ICT resources. The original strategic road map is provided in annex II.

2. To date, the Secretary-General has submitted five progress reports on the status of implementation of the ICT strategy,¹ with the most recent ([A/74/353](#)) being submitted on 17 September 2019. The five years for the implementation of the ICT strategy in the United Nations ended on 10 February 2020, with the completion of five years following the issuance of General Assembly resolution [69/262](#), which welcomed the ICT strategy.

II. Mandate, scope and methodology

3. The Advisory Committee on Administrative and Budgetary Questions, after considering the report of the Board of Auditors on progress in the handling of ICT affairs in the Secretariat ([A/70/581](#)), recommended to the General Assembly that it request the Board to submit an annual report during the five-year implementation period of the ICT strategy. The Assembly endorsed the recommendation in its resolution [70/238 B](#). In compliance with that resolution, the Board has submitted three progress reports on the implementation of the ICT strategy.²

4. The present report is the fourth annual progress report submitted in compliance with resolution [70/238 B](#) and is based on an examination of the implementation of the ICT strategy during 2019. The audit was conducted from 26 January 2020 to 6 March 2020. The report covers matters that, in the opinion of the Board, should be brought to the attention of the General Assembly.

III. Findings and recommendations

A. Follow-up to previous recommendations of the Board of Auditors

5. Of the 50 pending recommendations of the Board up to the year ended 31 December 2019, 7 (14 per cent) have been fully implemented, 37 (74 per cent) are under implementation and 6 (12 per cent) were overtaken by events. A summary of the status of recommendations is set out in table 1.

¹ [A/70/364](#) (September 2015), [A/71/400](#) (September 2016), [A/72/755/Rev.1](#) (April 2018), [A/73/384](#) (September 2018) and [A/74/353](#) (September 2019).

² [A/72/151](#) (July 2017), [A/73/160](#) (July 2018), [A/74/177](#) (July 2019).

Table 1
Status of previous recommendations of the Board of Auditors

Status of recommendations	Number of recommendations					Total
	A/67/651	A/70/581	A/72/151	A/73/160	A/74/177	
Open recommendations as at 31 December 2019	6	6	13	12	13	50
Implementation during 2019						
Fully implemented	3	–	2	1	1	7
Under implementation	3	4	10	10	10	37
Not implemented	–	–	–	–	–	–
Overtaken by events	–	2	1	1	2	6
Open recommendations as at 15 March 2020	3	4	10	10	10	37

6. The Board noted that the Secretary-General, in his fifth progress report on the implementation of ICT strategy (A/74/353) did not provide the status of implementation of the recommendations of the Board. The Board is of the view that the Administration needs to take timely action on the recommendations so that the gaps noted during the audit are addressed quickly. Of the 37 open recommendations, 17 were more than two years old. In the present report, the Board sets out further recommendations on governance, compliance, application and website rationalization, which had been flagged previously and for which the recommended measures are yet to be implemented.

7. The details of the status of implementation of the recommendations are contained in annex I.

B. Governance and leadership

1. Changes in the Office of Information and Communications Technology with management reforms

8. The Secretary-General, in his report on shifting the management paradigm in the United Nations (A/72/492/Add.2), dated 21 March 2018, proposed the reorganization of the existing Department of Field Support and Department of Management into two new departments – the Department of Management Strategy, Policy and Compliance and the Department of Operational Support. In the same report, he also proposed that a single Office of Information and Communications Technology would be established through the consolidation of the existing Office of Information and Communications Technology in the Department of Management and the Information and Communications Technology Division in the Department of Field Support. As that Office was to perform policy- and standard-setting functions and deliver operational support to clients throughout the Secretariat, it would retain reporting lines to both the Under-Secretary-General for Management Strategy, Policy and Compliance and the Under-Secretary-General for Operational Support. The proposal was approved by the General Assembly in its resolution 72/266 B. The restructured Office became operational on 1 January 2019.

Governance framework

Lack of participation of business owners and clients in the ICT governance structure

9. The governance framework set up under the ICT strategy comprised the Information and Communication Technology Executive Committee and the Information and Communications Technology Board:

(a) The Information and Communication Technology Executive Committee, chaired by the Under-Secretary-General of the former Department of Management, was the highest decision-making body in the Secretariat on ICT strategy and priorities. The Committee was mandated to ensure that ICT was central to, and delivered against, the business requirements and objectives of the United Nations. The Secretariat entities were represented on the Committee by 13 Under-Secretaries-General. The Committee was expected to meet at least once a year and was expected to receive quarterly updates on projects, as required;

(b) The Information and Communications Technology Board, chaired by the Chief Information Technology Officer, was responsible for ensuring coherent and coordinated global usage of ICT across departments and duty stations, in line with the objectives of the Secretariat and the general policy direction provided by the Information and Communication Technology Executive Committee. The Board was chaired by the Chief Information Technology Officer and comprised members at the D-1 or D-2 level, representing offices and departments at Headquarters, offices away from Headquarters, the economic commissions and tribunals.

10. Following the restructuring of the Office of Information and Communications Technology in the management reforms, the responsibilities of the Information and Communication Technology Executive Committee and the Information and Communications Technology Board were terminated. In their stead, a new governance body, the Information and Communications Technology Steering Committee, was created in June 2019. The Steering Committee is co-chaired by the Under-Secretary-General for Management Strategy, Policy and Compliance, as the lead department for management, policy and compliance, and the Under-Secretary-General for Operational Support, as the lead department for operational services and business processes, with the Chief Information Technology Officer supporting the Committee on technical aspects of application and technology. The new governance arrangement was approved by the Executive Office of the Secretary-General.

11. The Board of Auditors noted that only two Secretariat departments, the Department of Management Strategy, Policy and Compliance and the Department of Operational Support, besides the Executive Office of the Secretary-General, were represented in the new ICT governance body. The other client departments and offices (business owners and serviced entities) were not represented in the Information and Communications Technology Steering Committee as they had been in the predecessor governance bodies, the Information and Communication Technology Executive Committee and the Information and Communications Technology Board.

12. It is pertinent to note that the Information and Communication Technology Executive Committee and the Information and Communications Technology Board were executive-level advisory groups, which could provide inputs for ICT decisions and support the Chief Information Technology Officer in achieving them. The Board of Auditors is of the view that such an inclusive governance structure promotes transparency and strengthens accountability, which is a key objective of the ICT strategy. The Board noted, in that context, that the Secretary-General, in his report on shifting the management paradigm (A/72/492/Add.2), which was endorsed by the General Assembly in its resolution 72/266 B, had stated that ICT governance would include such cross-departmental and cross-entity mechanisms as the Information and Communication Technology Executive Committee and the Information and Communications Technology Board and that the representative and adequate participation of clients would be ensured in the composition of those bodies. The present structure and composition of the Information and Communications Technology Steering Committee does not conform to that goal of a cross-departmental and cross-entity ICT governance mechanism.

13. The Office stated that five technical committees had representation of relevant offices and departments and that cross-cutting issues were addressed through the Management Committee, which was a higher-level committee than the Steering Committee and comprised members from all offices and departments at the levels of Assistant Secretary-General and Under-Secretary-General.

14. The Board, however, is of the view that there is a requirement for cross-sectoral and cross-entity representation in an ICT-specific governance structure that has a specific mandate to ensure that ICT is central to and delivers against the business requirements and objectives of the United Nations. That structure existed previously (the Information and Communication Technology Executive Committee and the Information and Communications Technology Board) and had been intended to be replicated in the governance structure following management reforms. Participation and coordination by the ICT business owners and supported entities is essential in ensuring better transparency and accountability in the ICT area.

15. The Board recommends that the Administration ensure participation and representation from client departments and offices (business owners) in the ICT governance structure to ensure that ICT activities are aligned with organizational priorities and to improve transparency and strengthen accountability.

16. The Office has accepted the recommendation.

Gaps in organization of functions and activities

17. Following the restructuring, the ICT units of the former Department of Management and Department of Field Support were integrated into the present Office of Information and Communications Technology and transformed into three tightly integrated divisions, headed by the Chief Information Technology Officer:

- (a) Operations Support Division;
- (b) Policy, Strategy and Governance Division;
- (c) Enterprise Solutions Service.

The Board reviewed the functions and activities in those three areas and noticed instances of unclear delineation of their responsibilities and duplication. Those instances are discussed in the following paragraphs.

Data management

18. The Secretary-General, in his report on shifting the management paradigm (A/72/492/Add.2), had envisaged the following regarding data management:

(a) The Enterprise Solutions Service would enhance the quality and availability of data, strengthening and expanding data structures and data dictionaries and assisting clients with the documentation necessary to empower them to use a self-service approach, producing and sharing information. The Enterprise Solutions Service was to have a data modelling and management team to discharge that responsibility;

(b) The Policy, Strategy and Governance Division would have a data management and privacy unit that would establish policies for the management and handling of data and monitor compliance to ensure that privacy imperatives were integrated into technology and data solutions.

19. The Board observed that the data modelling and management team in the Enterprise Solutions Service and its related functions had not yet been established or operationalized as of March 2020. Meanwhile, the Board noted that the Operations

Support Division was providing data management services, as seen from financial agreements between the Division and the United Nations Office for Project Services (UNOPS). In fact, an agreement entered into by the Division and UNOPS indicated the existence of a reporting and data management team in the Division, which indicated an overlap between the envisaged functions of the Enterprise Solutions Service and the present activities of the Division regarding data management services, leading to a blurring of accountability lines for that function.

20. The Board also noted that the Data Management and Privacy Unit in the Policy, Strategy and Governance Division was non-operational as of March 2020. The Administration informed the Board in June 2020 that it envisaged putting in place an Organization-wide data protection and privacy framework, guided by the “Personal data protection and privacy principles” of 2018 of the High-level Committee on Management, pursuant to the Data Strategy of the Secretary-General, which was approved by the Executive Committee on 16 April 2020. The Administration envisaged including the framework in departmental guidance in terms of a Secretary-General’s bulletin on implementation and policies at the departmental and unit level. The Administration was also of the view that the data protection and privacy issues would be addressed as part of the implementation of the Data Strategy, the purpose of which was to update the Organization’s data protection and privacy regulations, rules, policies and procedures.

21. The Board noted that one of the next “short-term high priority” steps in the Data Strategy included the mapping and assessment of gaps in regulations, rules and policies, as well as oversight mechanisms and processes, and updating them with due regard to relevant instruments, including the above-mentioned principles of the High-level Committee on Management. The non-operationalization of the Data Management and Privacy Unit in the Policy, Strategy and Governance Division, coupled with the absence of a data privacy policy and the failure to update the 13-year-old policy on information classification and handling heightened the risk to confidentiality and integrity of data, especially in view of the ongoing migration of data to a cloud hosting service.

22. The Office of Information and Communications Technology stated that, although it recognized the importance of having a team for data modelling and management, that was not possible in the current financial context, owing to a lack of adequate resources. The Office also stated that, as a preliminary step, data privacy principles had been defined and it was co-chairing a working group on such principles. The Office further stated that the revision of the policy on information classification and handling was being led by the Record Management Unit and, in order to overcome the issue of the delayed revision, a new guideline had been created and published on iSeek.

Applications management

23. As stated in the report of the Secretary-General on shifting the management paradigm, enterprise solutions were designed by the Enterprise Solutions Service to integrate core systems and processes across all areas of the Organization, bridging silos to facilitate the coordination of work and the delivery of services, reducing the duplication of effort and information.

24. The Board noted that the Enterprise Solutions Service had entered into an agreement with UNOPS on application development and support. However, the Operations Support Division also had similar agreements with UNOPS for providing technical support for application rationalization and field applications business intelligence. The Board also noted that a project, Unite Workspace, which was on the standardization of the platform for applications, was managed by the Operations

Support Division and the Enterprise Solutions Service. Such instances indicate that there is no clear-cut demarcation of functions between the Enterprise Solutions Service and the Division on applications management, which blurs the lines of accountability and responsibility for the function.

ICT strategy oversight, policy and compliance

25. In line with the report of the Secretary-General on shifting the management paradigm, the ICT strategy oversight and policy and compliance services are under the purview of the Policy, Strategy and Governance Division .

26. The Board noted that, in one of the financial agreements with UNOPS, the responsibilities of the Operations Support Division included strategic direction and providing and maintaining updated security policies. In another financial agreement with UNOPS, the responsibilities of the Division included ensuring that pertinent information policies, procedures and practices were followed. That indicates that there is no clear-cut demarcation of functions between the Policy, Strategy and Governance Division and the Operations Support Division within the Office on Information and Communications Technology on ICT strategy oversight and policy and compliance services, which resulted in the overlapping of functions in that area, also blurring the lines of accountability and responsibility for the function.

27. The Office stated that the prevailing Secretary General's bulletin on the Organization of the Office of Information and Communications Technology ([ST/SGB/2016/11](#)) and the report of the Secretary-General on shifting the management paradigm both identified the respective functions.

28. As pointed out by Board, in line with the report of the Secretary-General on shifting the management paradigm, the ICT strategy oversight and policy and compliance services were under the purview of the Policy, Strategy and Governance Division. Moreover, a separate unit on policy and compliance service was functional under the Policy, Strategy and Governance Division. Hence, the overlap of functions between the Policy, Strategy and Governance Division and the Operations Support Division needs to be addressed in line with the report of the Secretary-General.

Innovative technology, business intelligence and analytics

29. As mentioned in the report of the Secretary-General on shifting the management paradigm, the Policy, Strategy and Governance Division would use innovative technology to bring about modernization and transformation across all areas and entities. In the same report, it was also mentioned that the Operations Support Division would support the implementation of business intelligence strategies to facilitate self-service analytics at the local level.

30. The Board noted that both the Policy, Strategy and Governance Division and the Operations Support Division were providing services on innovative technology, business intelligence and analytics. Overlapping of functions in that area also blur the lines of accountability and responsibility for the function.

Multiple reporting lines for a function

31. The Secretary-General, in his report on shifting the management paradigm, stated that the Office of the Assistant-Secretary-General, Chief Information Technology Officer would include cybersecurity and enterprise programme management teams to strengthen information security throughout the Secretariat and to provide a standardized approach to the oversight of ICT programmes.

32. The Board noted the following instances of diverse reporting lines for similar functions:

(a) The Enterprise Programme Management Section is currently responsible for human resources, budget and finance and training, with a direct reporting line to the Chief Information Technology Officer. The Enterprise Project Management Office, under the Enterprise Programme Management Section, was moved to the Operations Support Division in July 2019 and the Chief of the Enterprise Project Management Office reports to the Director of the Operations Support Division;

(b) One of the pending projects under the ICT strategy, namely the global sourcing project, is managed by the cost recovery team under the Enterprise Programme Management Section, which reports directly to Chief Information Technology Officer. The Enterprise Project Management Office manages other projects (Unite Workspace, the hybrid cloud programme, Lite Service Management Framework, Microsoft Office 365/Windows 10 upgrade, etc.).

(c) The Operations Support Division carries out cost recovery functions separately from the core cost recovery team, under the remit of the activities of the Broadcasting and Conferencing Support Section.

33. Streamlining the reporting lines for those functions is desirable for more efficient functioning of the Office.

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/72/492/Add.2), in order to avoid overlapping and duplication of functions.**

35. The Office accepted the recommendation.

2. Risk management and accountability

Risk management framework

36. In his seventh progress report on the accountability system in the United Nations Secretariat (A/72/773), the Secretary-General committed himself to implementing the “three lines of defence” model in the Secretariat and strengthening the accountability system of the Secretariat under the new management paradigm.

37. As stated by the Secretary-General in his eighth progress report on the accountability system in the United Nations Secretariat (A/73/688), the model enhances the understanding of risk management and control of an organization by clarifying roles and duties and by providing guidance for the implemented structure and the assigned roles and responsibilities of parties to increase the effective management of risk and control. The Secretary-General also stated in the same report that a dedicated enterprise risk management team had been designed in the Business Transformation and Accountability Division to support entities in undertaking risk assessment exercises to identify, evaluate and manage the specific risks that might affect the functioning of their operations.

38. A single draft risk register for the entire Organization was prepared as the starting point for the second Secretariat-wide risk assessment, which was conducted to update, revise and validate the results of the three prior assessments. In the United Nations Secretariat risk register of December 2019, as maintained by the Enterprise Risk Management Section, Accountability Service, Business Transformation and Accountability Division, Department of Management Strategy, Policy and Compliance, 14 critical risks were identified, including 2 critical risks owned by the Office of Information and Communications Technology:

- (a) ICT strategy and infrastructure;
- (b) ICT governance and cybersecurity.

39. Moving forward, the Secretariat-wide risk register was to provide strategic guidance to the development of local risk registers through local risk management focal points who would be responsible for undertaking and coordinating risk assessments at the entity level. The Policy, Strategy and Governance Division under the Office of Information and Communications Technology was to develop and monitor the implementation of the ICT risk management framework in line with the established enterprise risk management framework.

40. The Board noticed that the Office had communicated a risk treatment plan for a different set of risks related to information technology. Those ICT-related risks, identified in the risk register of the Department of Operational Support (last updated in August 2019), included two risks related to information technology, to be owned by the Office:

- (a) Information technology security and access;
- (b) Information technology infrastructure and systems.

41. The disparity between the Secretariat-wide risks identified by the Business Transformation and Accountability Division and the risk treatment plan prepared and communicated by the Office indicates a disconnect that needs to be addressed. At present, there is no ICT risk management framework of the Office with specific a risk response or risk mitigation plan to deal with the identified Secretariat-wide ICT-related risks.

Accountability

42. The General Assembly, in its resolution [72/266 B](#), stressed that accountability was a central principle of management reform. The Secretary-General reiterated in his eighth progress report on the accountability system in the United Nations Secretariat that the new management paradigm was dependent on the Secretariat's ability to ensure a more structured and rigorous implementation of the accountability system than had previously been achieved.

43. The first line of defence in the three lines of defence model is management, and the heads of the entities as risk owners are responsible for ensuring that control systems are in place and operating effectively to mitigate risks. The second line of defence consists of the policy and compliance functions of the Office of Information and Communications Technology, among a number of other departments, including the Department of Management Strategy, Policy and Compliance, the Office of Legal Affairs, the Ethics Office, the Department of Safety and Security and the Department of Operational Support. In the Secretariat, that second line is also responsible for issuing policies that govern the Organization and support the implementation of effective risk management practices by operational management, assisting risk owners in reporting and escalating relevant risk-related information.

44. The Board noted that the Business Transformation and Accountability Division, under the Department of Management Strategy, Policy and Compliance, which was assigned the role of second line of defence, has developed an accountability framework and an initial performance monitoring framework, based on a set of key performance indicators, to deal with accountability in relation to the implementation of the delegation of authority for matters related to human resources, finance, procurement and property management.

45. The Board noted that delegation of authority, accountability framework and performance monitoring framework have not yet been formalized to deal with ICT-related matters. The Office, referring to a draft Secretary-General's bulleting that it had prepared, stated that it had developed delegation of authority, an accountability framework and a performance monitoring framework, but that they had not yet been

formalized by the Administration (Department of Management Strategy, Policy and Compliance)-

46. Thus, at present, the Office, although it is the designated second line of defence in ICT-related matters, does not yet have the framework or established and formalized procedures to monitor and support the implementation of ICT-related risk management practices. The Board also noted that the role of the Office as a second line of defence in ICT-related risks and a related accountability framework was not discussed in any of the meetings of the Information and Communications Technology Steering Committee in 2019.

47. The Office informed the Board that the cybersecurity action plan, which was endorsed by the Management Committee in December 2019, included the requirement to report back to the Committee, thereby establishing a risk mitigation plan in accordance with the accountability framework. The Office was also of the view that establishing a risk management and accountability framework would duplicate the role of the Business Transformation and Accountability Division. The Division, however, did not deem that duplication was created by the fact that the Office developed its own risk register, using the Secretariat-wide risk register as a frame. In the Division's opinion, the Office, as risk owner, would address the risks assigned to it among the critical risks identified in the Secretariat-wide risk assessment, expanding on the work of the Division, and benefiting from its support in achieving a more detailed and operational level, with concrete risk mitigation measures.

48. The response of the Office needs to be seen in the light of its responsibility for the entire gamut of ICT functions, both policy and operational. Without an appropriate accountability framework, compliance with ICT policies and the proper use of ICT across the Secretariat cannot be ensured. In fact, the Board has, in its previous reports, emphasized that the Office needed an appropriate compliance model and better coordination with stakeholders for compliance with its policies. An accountability framework monitored by the Office in its role as a second line of defence would ensure emphasis on accountability, which is a central principle of management reform.

49. The Board recommends that the Office align a risk response and mitigation plan with the ICT risks identified for the entire Secretariat.

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.

51. The Administration noted the recommendations and stated that, once the current revision of the delegation of authority [ST/SGB/2019/2](#) and its delegation instruments were finalized, the Business Transformation and Accountability Division intended to open a dialogue with the Office of Information and Communications Technology in relation to the accountability framework for ICT.

3. ICT policy and compliance

ICT policy framework

52. A policy framework is an essential tool for ICT management to ensure coherent and consistent direction and control. The establishment of a system of policies, procedures and guidelines in the ICT area is being effected through the ICT Policy Committee.

53. The Board noted that, as of February 2020, there were 41 ICT policies, which included 21³ technical procedures. The technical procedures related to security (8), infrastructure (9), applications (3) and information management (1). All ICT technical procedures were to be reviewed annually, except for the procedure for security incidence response, which was to be reviewed twice a year.

54. The Board noted that the ICT Policy Committee had met 10 times in 2019 and had revised 9 technical procedures, while the remaining 12 were at various stages of review and/or revision.

55. The Board had pointed out, in its second progress report (A/73/160), that no policies on emerging areas, such as the outsourcing of ICT services, end-user device usage, information-sharing, open data and the reuse and safe disposal of decommissioned ICT equipment, had been promulgated. The Board was informed that an administrative issuance on the use and end-user device usage of mobile devices was in the final stages of consultation between the Office of Human Resources and the Office of Legal Affairs. The Board was also informed that an administrative issuance on the disposal of computer equipment at United Nations Headquarters (ST/AI/2001/4), was proposed to be abolished and replaced by standard operating procedures for the disposal of ICT-related equipment at United Nations Headquarters, which was expected to be finalized and disseminated by the first quarter of 2020.

56. The Board noted that a new guideline for sharing official United Nations information with external parties was created and published on iSeek. However, no action had been taken thus far towards the formulation of a policy on the outsourcing of ICT services, the absence of which had been flagged in the Board's third progress report (A/74/177).

57. The emerging technologies team of the Office of Information and Communications Technology investigates technologies and their possible applications for the benefit of the Secretariat and the Sustainable Development Goals. The Board noted that the Office had identified artificial intelligence, the Internet of Things and distributed ledger technology as some of the emerging technologies, but no policies had yet been issued on them. The Office accepted that no formal policies had been issued on emerging technologies and stated that a draft reference architecture on artificial intelligence had been prepared and would be officially issued in 2020.

58. The Secretary-General, in his report on shifting the management paradigm in the United Nations (A/72/492/Add.2), also stated that the Records Management Unit, under the Policy, Strategy and Governance Division, would be responsible for establishing policy and setting standards for the management of the records and archives of the United Nations, including their use, storage and disposition, as well as public access to them, and would support Secretariat-wide efforts to strengthen and ensure compliance with digital and physical records management policies.

59. The Board noted that, at present, the records and archives management in the Secretariat was governed by the Secretary-General's bulletin on record-keeping and the management of United Nations archives (ST/SGB/2007/5), which had been issued in February 2007 and was more than 13 years old. The Office stated that internal consultations had started regarding the revision of the policy.

³ The earlier technical procedure INF.08.PROC was merged with INF.07.PROC.

Policy compliance

60. The Board reported, in its second progress report, that the Office of Information and Communications Technology had undertaken detailed compliance reviews of specific ICT policies at the Regional Technology Centre-Americas in 2017, which were expected to be completed by April 2018. The Board reported, in its third progress report, that, following the review, 87 recommendations had been made, of which 62 were open and 8 were pending for want of funds. The Board noted that the status remained unaltered and no fresh review had been undertaken in 2019. The Office informed the Board that a compliance model had been developed for replication at other Regional Technology Centres.

61. The Board reported, in its third progress report, that the Office had initiated the annual review and self-certification by departments and offices for policy compliance in August 2018. It focused on only 2 of the 42 policies and the response rate was very low (only 5 out of 70 entities submitted complete self-certification forms). The Board noted that such an initiative was not undertaken in 2019. The Office informed the Board that, in January 2019, the Enterprise Solutions Service had asked departments and offices to review and update their applications in Unite Applications, as part of the yearly assessment.

62. The ICT strategy envisaged an information security framework covering policy development, compliance and enforcement. The Board noted that there were 14 policies in place on information security but no dedicated compliance monitoring function in the Office. While accepting the absence of a dedicated compliance monitoring function, the Office stated that the results of self-assessments were tracked in Unite Applications (for websites and applications) and the Operations Support Division compliance website (for infrastructure and systems).

63. The Board is of the view that the absence or non-review of the above-mentioned policies and the lack of -monitoring of existing information security policies increase the risk to the confidentiality, integrity and availability of data, given the Department's adoption of cloud-based platforms and services and its intention to adopt artificial intelligence-based systems within the United Nations.

4. Project implementation

64. In the ICT strategy, a strategic road map was set out in February 2015 for the subsequent five-year period to support organizational priorities and to harmonize ICT delivery. In his first progress report on the status of implementation of the ICT strategy ([A/70/364](#) and [A/70/364/Corr.1](#)), the Secretary-General provided an implementation timeline for 20 strategic projects with key project milestones. The aims of the projects were to provide ICT support to organizational priorities, to harmonize ICT infrastructure and processes and to promote innovation to support the substantive work of the United Nations. All of the projects were to be overseen by the Enterprise Project Management Office, an office established after the adoption of the ICT strategy.

65. Of those 20 strategic projects, 13 were reported to be completed in the fourth progress report of the Secretary-General ([A/73/384](#)). In the fifth progress report, the Secretary-General reported on the end state of the implementations of the ICT strategy. The Board noted that the status or closure of projects had not been specifically mentioned in the report, which only provided an overall assessment of the end state of the implementation of the strategy.

66. As stated in ICT project management framework, the Office of Information and Communications Technology has adopted PRINCE2 as the project management methodology. In line with the methodology, for closing the projects, the project

manager completes the end project report and submits it for approval. As part of best practices, the Office also recommends the use of standard templates that support the management of projects throughout their life cycle, including the end project report. An end project report is used during project closure to review how the project performed against the project initiation documentation that authorized it and is the project manager's report on the project. For full project completion, the end project report outlines the operations and the entity that will maintain and support the product and, for a premature closing or project cancellation, the end project report provides a justification and lists what has been achieved. When the end project report is approved, the project is formally closed, and project resources are released.

67. The Board noted, that out of the seven projects reported to be ongoing in the fourth progress report of the Secretary-General, as of April 2019, well ahead of the close of ICT strategy, six⁴ projects had been formally closed through change requests approved by the Chief Information Technology Officer. The changes made to the closing dates of projects through change requests are provided in table 2:

Table 2
Strategic projects closed in 2018 and 2019

<i>Serial number</i>	<i>Project name</i>	<i>Closing date</i>	<i>Modified closing date</i>	<i>Reason for closure or mainstreaming</i>
1	Enterprise Unite Service Desk/consolidation	31 December 2018	31 December 2018	Enterprise-level service desk put in place and consolidation of tier 1 (field unit(s) of the Department of Field Support) would be a separate activity
2	Enterprise Network Operations Centre	31 December 2018	1 September 2017	The Enterprise Network Operations Centre was put in place and the plan to move Regional Technology Centres to it would be treated as a separate activity
3	Umoja mainstreaming	31 December 2019	Not mentioned	Tasks under phase 1 to 3 were completed and the remaining tasks under phase 4 would be a separate project based on engagement with and decision from the Umoja project team
4	Disaster recovery (Phase 2: disaster recovery exercises)	28 June 2019	31 December 2018	Phase 2 of the disaster recovery project has transitioned to mainstream mode and disaster recovery exercises would be continued as an operational activity

⁴ Website rationalization, application rationalization, Unite Service Desk, Enterprise Network Operations Centre, disaster recovery phase 2: disaster recovery exercises and Umoja mainstreaming.

<i>Serial number</i>	<i>Project name</i>	<i>Closing date</i>	<i>Modified closing date</i>	<i>Reason for closure or mainstreaming</i>
5	Application rationalization/ consolidation (Phase 3)	31 December 2020	1 March 2019	Number of applications reduced below 1,000 and assessment of new applications would be an ongoing operational activity
6	Website rationalization/ consolidation (Phase 2)	31 December 2020	31 December 2017	Project milestones were achieved and the final work involving assessment of new websites is an ongoing activity

68. As shown in the table above, the closing dates of a number of projects were moved up. While some projects were closed, it was noted that few activities originally envisaged to be part of the project would be taken up subsequently as a separate activity. An end project report was prepared only for the application rationalization project, while the other five projects were closed using a change request, briefly mentioning reasons for closure. The adopted methodology of the project manager reviewing the project and submitting the end project report for approval was not followed in those cases.

69. **The Board recommends that the Office carry out a post-project review of all projects, as envisaged in the project management framework, using the mandated templates for better appreciation of their status and achievements.**

70. The Office agreed with the recommendation.

C. Modernization

1. Umoja mainstreaming

71. Umoja mainstreaming involves the transfer of responsibility from the Umoja project team to the corresponding entities within the Secretariat. The General Assembly, in its resolution [70/248 A](#), requested the Secretary-General to develop detailed transition plans for the long-term support arrangements for Umoja mainstreaming. In its resolution [71/272 B](#), the Assembly reiterated the importance of ensuring a smooth and timely transfer of responsibilities from the Umoja project to corresponding entities within the Secretariat. In its resolution [73/279](#), the Assembly also requested the Secretary-General to provide, in his eleventh progress report on the enterprise resource planning project, a detailed plan for the mainstreaming of the Umoja team into the Secretariat, including measures to ensure a sustainable business model for the Umoja project.

72. The Office of Information and Communications Technology had previously reported that phases 1 to 3 of the mainstreaming exercise had been completed and that planning had begun for phase 4 (“lift and shift”) with regard to the resources and funding required to operationally support Umoja in 2020 (see [A/74/177](#)). No further progress regarding Umoja mainstreaming in the year 2019 was reported in the fifth progress report of the Secretary-General on the implementation of the ICT strategy. Meanwhile, the Office formally closed the Umoja mainstreaming project on 18 March 2019. It has been decided that a new project would later be taken up, involving all remaining tasks as part of the phase 4 “lift and shift”, based on the engagement with the Umoja project team to mainstream the identified responsibilities of the Office.

73. The mainstreaming plan expected to be submitted by the Umoja project team was to include a “lift and shift” of the entire project team, most of its general temporary assistance personnel and a limited number of contractors to an entity that was the most appropriately placed to manage the team. The Umoja project team has now reported their intent to present the mainstreaming plan in the twelfth progress report on Umoja. The Board has been informed that new opportunities have opened up for Umoja’s steady-state support model, with the management reform and the offer of institutional capacity by both the Department of Management Strategy, Policy and Compliance and the Department of Operational Support for the steady-state functions that were worth evaluating and pursuing. The Board was informed that the core Umoja project team has the right capacity to design, build and maintain the solution and be the de facto systems integrator and that this team was expected to be “lifted and shifted” to appropriate organizational units, as appropriate.

74. The Board is of the view that it is crucial that Secretariat entities that might be entrusted with the responsibility to complete the remaining work of Umoja Extension 2 subprojects provide ongoing production support and carry out continuous improvements to the enterprise resource planning solution in the future and that they be provided adequate opportunities to examine and understand the functions and project resources to be taken over. Hence, it is essential for detailed consultations to be taken up early between the Umoja project team, the Office of Information and Communications Technology and other identified Secretariat entities to which the functions and project personnel are likely to be transferred by the end of December 2020, for the efficiency and effectiveness of mainstreamed activities.

75. The Board recommends that the Administration formalize the Umoja mainstreaming and transition plan at the earliest possible time, in consultation with the identified Secretariat entities to which the functions and project personnel are likely to be transferred.

76. The Office accepted the recommendation and stated that it would work closely with the Department of Operational Support, the Department of Management Strategy, Policy and Compliance and the Umoja project team to finalize a detailed mainstreaming plan.

2. Information security

77. The ICT strategy envisaged an effective information security policy to protect information from the risks posed by cyberthreats, unauthorized disclosures and fraud. An action plan was framed that consisted of 10 initiatives focusing on three key areas (prevention, detection and governance) to address the most urgent shortcomings in information security. The Secretary-General had previously reported that the Regional Technology Centres continued to implement the pending initiatives of the 10-point action plan (see [A/73/384](#)).

78. The Secretary-General, in his fifth progress report on the implementation of the ICT strategy for the United Nations, stated that the institutional consolidation of ICT functions, together with the accelerated deployment of common, cloud-based technology solutions, created an opportunity for an identity-based, data-centric information security risk management strategy. The Board examined the efforts taken for maintaining information security over the past year, through February 2020, and the significant observations are summarized in the following paragraphs.

Prevention

79. Network segmentation is aimed at reducing secondary compromise through a single compromised host by limiting access to additional internal targets. The Board noted that network segmentation remained limited to production networks at United

Nations Headquarters and parts of enterprise data centres. The Office had previously informed the Board that the full implementation of the projects represented a significant effort and required additional resources (see [A/74/177](#)). The Board noted that there was no further progress on network segmentation in 2019.

80. The Secretary-General, in his fifth progress report, highlighted the Organization's susceptibility to attacks designed to establish a broad, external long-term hidden presence in the Organization's systems and networks and stated that new technologies would be deployed to address those specific risks, building on ongoing efforts to segment networks and protect privileged accounts. The Office, however, did not confirm the deployment of any new technology in 2019.

81. The Secretariat was to improve information security awareness among United Nations personnel through training and outreach. The Board noted that, as of February 2020, a total of 26,006 out of 36,308 active United Nations staff members (72 per cent) had completed the mandatory security awareness training, which represented a marginal increase from the previous year, when 71 per cent of staff had completed the mandatory training. The Office had informed the Board in 2019 that it provided materials to raise awareness, such as iSeek articles and interactive information sessions, and assured the Board that the issue of mandatory trainings would be addressed through compliance monitoring using management dashboards. The Board did not notice significant improvement despite those assurances.

82. The Secretary-General, in his fifth progress report, reported that the established practices for end-user awareness would be enhanced through the introduction of regular exercises that sensitized users to common attack methods, trained them and identified areas that required strengthening. The Office informed the Board that no resources were available to procure or develop a system or service to conduct such exercises on a large scale. The Office also emphasized that the initiative could not be implemented by the Office alone, but only in conjunction with substantive departments and offices.

Detection and response

83. The detection of and response to attacks were to be dealt with through a dual strategy of receiving a cyberintelligence service feed and installing intrusion detection systems and other detection controls within the network to detect attacks in near-real time, enabling a timely response and thus limiting the damage caused by a compromise.

84. The Office informed the Board that the design and scope of the intrusion detection systems remained the same as in 2019 in that a centrally managed intrusion detection system was deployed at selected locations. The Office added that additional detection tools were deployed on an ad hoc basis in environments where incidents occurred to determine the scope and identify additional compromised assets.

85. The Office also informed the Board that iNeed, as the central incident management and tracking system, was continually being improved in order to increase adoption. During the year 2019, of the 1,732 incidents recorded in iNeed, 396 cases were related to an intrusion detection system. The Office further informed the Board that the taxonomy for information security incidents had been reviewed and updated to simplify the recording of incidents. The Board noted that the proposed changes to the technical procedure on security incident response were still under review.

86. In his fifth progress report, the Secretary-General reported that the Office of Information and Communications Technology had made significant progress in the areas of detection and response and had established an initial threat management

capability that leveraged the analysis of incident details to develop early detection signatures. Those efforts had significantly reduced the dwell time between a security incident and its detection. The Board sought details regarding the improvements made in reducing the dwell time between a security incident and its detection. The Office informed the Board that, through the collection of leading indicators and threat monitoring, some email-based attacks had been prevented.

Governance, risk and compliance

87. Governance and compliance aspects of information security include the classification of information assets, the promulgation of policies, the mandatory implementation of information security controls for public websites and the reporting and sharing of information security incidents.

88. The classification of information and assets is aimed at segregating and providing additional security measures for sensitive information. The Office stated that it could not provide the status of the classification of information as it relied on business owners to identify and mark information in accordance with [ST/SGB/2007/6](#).

89. The Board thus noted that the short-term measures for promoting information security in the Secretariat, as had been envisaged in the ICT strategy, were yet to be completed after five years of implementation of the strategy, which led to vulnerabilities, as could be seen from the information security breach that occurred in Vienna in 2019, as summarized below.

90. An incident was reported when a server managed by the United Nations Office on Drugs and Crime in Vienna that was missing a critical security update was compromised in 2019. According to the Office on Information and Communications Technology, the incident occurred owing to a lack of adequate network segmentation and insufficient monitoring (failure to apply a security update) under the technical procedure on systems maintenance. The Office informed the Board that those circumstances had allowed the adversary to spread through the network at the United Nations Office at Vienna and, from there, to the United Nations Office at Geneva, where additional assets had been compromised, and the breach had been detected only when a development server at the Office of the United Nations High Commissioner for Human Rights, which was also located in Geneva, had been compromised. The Office on Information and Communications Technology informed the Board that it had provided support with the forensic analysis and advised on mitigation measures. The response to the incident and the implementation of mitigation measures were performed under the authority of the affected offices and coordinated by the United Nations Office at Geneva and were still ongoing.

91. The Office stated that most of the short-term measures under the 10-point action plan were implemented through such actions as the issuance of policies, systems deployment and the establishment of training mechanisms, and that the action points had been transformed into ongoing activities. The Office, however, agreed that there were many ways in which such action points as intrusion detection systems could be further improved (e.g., expanding scope and increasing the number of sensors). The Office stressed that some of the initiatives could not be implemented by the Office alone, but only in conjunction with substantive departments and offices. It further added that information security updates were provided to ICT managers and that support regarding responses to incidents was offered, with significant assistance having been provided to the United Nations Office at Vienna in response to the incident mentioned above.

92. The Office was, however, of the view that it had limited capability to ensure that remote entities complied with global policies, such as the reporting of information

security incidents, and the ability to do so would be strengthened when the formal delegation of authority for ICT was instituted.

93. The Board recommends that the Administration take forward the information security initiatives identified earlier, such as asset classification, enhanced awareness and network segmentation, and that it take appropriate initiatives to ensure better compliance by the departments and offices.

94. The Office accepted the recommendation and stated that the cybersecurity action plan endorsed by the Management Committee in December 2019 was aimed at increasing compliance with existing policies and specific initiatives to improve monitoring and to mitigate control gaps.

Cybersecurity

95. The Secretary-General, in his report on the ICT strategy ([A/69/517](#)), stated that the Office would work to develop a cyberdiligence framework, which would provide mechanisms for cybercrime risk management.

96. In his fifth progress report, the Secretary-General stated that the United Nations was experiencing constant and escalating cyberattacks. In 2018, 710 million malicious web connections had been blocked; each month, on average, four distributed denial of service attacks had been successfully mitigated, and approximately 4,000 emails containing malicious code had been blocked daily. The threats that the Organization faced were growing in both scale and complexity. In addition to common and often automated threats, the United Nations was continuously subjected to highly targeted and sophisticated cyberattack campaigns aimed at gaining persistent access to systems and data or visibly disrupting operations.

97. The Office stated that, although it did not have a cyberdiligence framework to provide a mechanism for cybercrime risk management, it believed that the set of policies, standards, technical procedures and detection and monitoring systems that the Office had established should be considered as equivalent to a cyberdiligence framework. The Office further stated that the cyberthreats facing the Organization were primarily related to espionage and would not generally fit the definition of cybercrime. It informed the Board that a new information security board was being created in 2020 to ensure broader participation in the effort towards achieving cybersecurity. The Office also stated that it had prepared a technical procedure on cryptographic controls in 2015 to define standards and provide guidance on how to minimize the risk of the unauthorized disclosure and modification of sensitive United Nations data by using cryptographic algorithms that had received substantial public review and have been proven to work effectively.

98. The Board noted that the technical procedure on cryptographic controls, which was to be reviewed by the ICT Policy Committee at least once a year, had not been revised or reviewed during past three years, from 2016 to 2019. The Office stated that substantive updates on cryptographic controls had been provided in 2019 through specific advisories and that the procedure would be updated in 2020.

99. The Board was informed that the new cybersecurity section, after consolidation of the information security resources in the Information and Communications Technology Division, Department of Field Support and the Office of Information and Communications Technology, Department of Management, had been restructured to allow its personnel to focus on specialized tasks and strengthen their proficiency in the respective areas. The new cybersecurity section consisted of a threat and incident management unit, a vulnerability management unit, a security architecture team and an awareness and reporting unit.

100. The Office further informed the Board that those cybersecurity teams provided assistance and support to all entities of the Secretariat on request but that it did not have the authority to oversee and direct local information security resources. The level of engagement and transparency therefore varied for different departments, offices, regional and economic commissions and missions. The Office, during discussions, informed the Board that the teams were not able to cater to the needs of some of the United Nations entities, such as peacekeeping missions, owing to resource constraints.

101. A new cybersecurity action plan was endorsed by the Management Committee in December 2019. The plan was aimed at increasing compliance with existing policies. The Office stated that it was leading that effort, the implementation of which was a collective responsibility to which all departments and offices needed to contribute.

102. The Board noted that the new cybersecurity action plan listed some of the existing policies, provided timelines for compliance with them and flagged specific initiatives to improve monitoring and to mitigate control gaps. However, the action plan did not contain any mechanism for ensuring the accountability of the departments and offices for implementation of the action plan.

103. The Board recommends that the Administration update the technical procedure on cryptographic controls and put in place an appropriate accountability mechanism for ensuring that departments and offices implement the cybersecurity action plan.

3. Asset management

104. The ICT strategy envisaged that the Office would coordinate a global ICT asset management team to assess existing assets and develop a plan for refreshing, upgrading and retiring them, as required.

105. The Board, in its second progress report (A/73/160), had recommended that a long-term augmentation plan be developed, considering asset life and technological change, and that the related requirements be indicated in budget requests in a timely manner. The Office of Information and Communications Technology updated the capital investment plan from five years to six years, which included the strengthening of capital maintenance in its first year. The Office informed the Board that, in March 2019, it had prepared a proposal for the strengthening of the capital maintenance of conferencing and broadcast information and communications technology in 2019 and 2020. The proposal included the areas of conference management, multimedia, broadcasting, audiovisual communications and cybersecurity, spread over the various duty stations and United Nations Headquarters. The Office informed the Board that the resources proposed for the implementation of the plan were not available.

106. The Office also stated that insufficient funding for the replacement of equipment and systems that had reached their end of life and were no longer being supported by their respective equipment manufacturers might have an impact on reliability and productivity owing to higher failure rates, in particular in terms of information security, especially in the hybrid environments towards which the Organization was currently moving.

107. The Office emphasized that the conferencing and broadcasting services that it provided to the Department for General Assembly and Conference Management and the Department of Global Communications, respectively, were at higher risk and that the conferencing and broadcasting systems, in general, required continuous renovation and the replacement of outdated equipment. Furthermore, additional

investment would be required in order to bring conference centres across duty stations in line with United Nations standards.

108. The Board is of the view that extending equipment use beyond warranty, vendor support and useful life has an underlying risk of outdated systems being used in critical operational areas involving security and global communications. The weak and outdated system poses inherent cybersecurity risks and is a highly vulnerable target for hackers.

109. The Board recommends that the Office review the capital investment plan for the remaining period and reprioritize, identify and upgrade outdated systems to secure information assets and resources that are accessible across the globe.

110. The Office accepted the recommendation.

4. Disaster recovery management

111. Disaster recovery relates to policies and procedures that enable the recovery or continuation of critical ICT infrastructure and systems following a data security breach or disaster of either natural or human cause. In its resolution [67/254 A](#), the General Assembly approved information technology disaster recovery as one of the core elements of the organizational resilience management system.

112. The disaster recovery project was identified as one of the strategic projects in the ICT strategy. The Secretary-General, in his first progress report, stated that the scope of the disaster recovery project would be to develop a Secretariat-wide disaster recovery plan to ensure that critical ICT systems could be effectively failed over⁵ in case of an emergency.

113. The first phase of the project included a review of Secretariat-wide critical applications, the revision of disaster recovery estimates for such critical applications, the resubmission of the proposal for approval by the Senior Emergency Policy Team and the development of individual disaster recovery plans for critical applications. In the second phase of the disaster recovery project (beginning in October 2017), disaster recovery exercises and tests were to be conducted for the critical applications.

114. The technical procedure on disaster recovery planning states that ICT service providers must test and/or exercise the ICT disaster recovery plan on a periodic basis (at least annually) to determine the plan's effectiveness and the Organization's readiness to execute the plan. In line with [ST/SGB/2016/11](#), the then Global Services Division and Office of Information and Communications Technology were vested with the responsibility of developing, maintaining and overseeing the disaster recovery framework, as well as coordinating the implementation and testing of the enterprise applications disaster recovery plan. The heads of Secretariat ICT organizational units would execute disaster recovery and business continuity plans in accordance with the procedures established by Chief Information Technology Officer.

115. The Board, in its third progress report, had reported that the Office of Information and Communications Technology had temporarily suspended disaster recovery planning exercises in July 2018 in view of Secretary-General's management reforms. The Board noted that the Office had closed Phase 2 of the disaster recovery project in April 2019, stating that it had established the ability to coordinate the annual disaster recovery exercises, the disaster recovery plan update process and the disaster recovery plan audit, and to implement lessons learned. The Office, however, did not prepare any end project report. The Office informed the Board that disaster recovery

⁵ Switching an application or ICT service system from its primary data centre to a secondary data centre.

exercises would continue as an ongoing activity and would be carried out by the Operations Support Division.

116. The Board reviewed the disaster recovery plans for six applications – three critical applications (EarthMed, Umoja and Unite Docs) and three other applications (enterprise service bus, iNeed and Unite Identity) – and observed that the disaster recovery exercise had not been planned or taken up for any of those applications in 2019, although it was supposed to be carried out annually. With the exception of EarthMed, the disaster recovery plan for the applications did not mention the most recent disaster recovery exercise. For EarthMed, in the most recent disaster recovery exercise (date not mentioned), the duration of the failover was 4 hours against the planned duration of 2 hours and 5 minutes, and the failback time was 2 hours and 25 minutes against the planned duration of 2 hours and 5 minutes. The Office stated that, as the applications were hosted at an enterprise data centre, no disaster recovery exercise was conducted for them.

117. The Office informed the Board that the disaster recovery exercise undertaken in July 2019 consisted of only one critical application, Society for Worldwide Interbank Financial Telecommunication (SWIFT). The Board noted that the exercise conducted for SWIFT could not meet the planned targets. The exercise had to be carried out for a duration of 9 hours and 30 minutes against the planned 7 hours and 5 minutes. The recovery time for failover and post-failover validations took 7 hours and 36 minutes against the planned time of 5 hours and 25 minutes. The Office informed the Board that, in July 2019, only the SWIFT application was still run from New York, and it had later been migrated to the enterprise data centre in the Global Service Centre.

118. The Board was informed that all critical applications were planned to be moved to enterprise data centres or the cloud. The Board sought details of the mechanism to ensure resilience and disaster recovery capability in the applications hosted at an enterprise data centre or in the public cloud. In response, the Office stated that the Global Service Centre and the United Nations Support Base in Valencia, Spain, had their own disaster recovery exercises but did not provide any details of tests or exercises that had been conducted for the critical applications by the Global Service Centre in 2019. The Board was informed that, for non-critical applications (those not hosted at an enterprise data centre or in the cloud), the compliance to the disaster recovery policy was to be defined and budgeted by the application owners.

119. The Board noted that, although the Office had the role of overseeing and coordinating the implementation of the disaster recovery plan, it could not provide appropriate evidence regarding the conduct of disaster recovery exercises for all identified critical applications. The single application for which disaster recovery information was provided (SWIFT), did not meet the time targets for recovery. The Board is of the view that the oversight and coordination role of the Office needs to be emphasized to ensure organizational resilience during unforeseen emergencies.

120. The Board recommends that the Office develop a road map for undertaking disaster recovery exercises for all critical applications and put in place a mechanism to ensure that entities prepare disaster recovery plans and test them, in line with the prescribed procedure.

121. The Office agreed with the recommendation.

D. Transformation

1. Application rationalization/consolidation

122. In line with the ICT strategy (A/69/517), the enterprise application centres were to be strengthened and were to develop methods and standards of developing and

tracking all enterprise development initiatives. All application development outside the enterprise application centres was to cease.

123. The Office of Information and Communications Technology introduced an application management strategy in May 2015. Enterprise application centres were established in New York, Vienna and Bangkok in order to provide a focal point for application development. The purpose was to prevent the further development of fragmented applications across the Secretariat by consolidating development activity into centres of excellence.⁶ In his fourth progress report, the Secretary-General stated that the ICT strategy proposed an enterprise delivery framework that included enterprise application centres in New York, Vienna and Bangkok. That point was reiterated in the fifth progress report, which informed the Board that the Office of Information and Communications Technology had established the enterprise delivery framework, transforming the disparate ICT organizations into a coherent enterprise structure. Further, the enterprise data centres, the Unite Service Desk and the enterprise application centres provided a full range of ICT services through a set of structured organizational units.

124. The rationalization of applications was one of the 20 projects taken up under the ICT strategy. The project was formally closed and the activity mainstreamed after the number of applications fell below 1,000 (the number of applications fell to 988 by February 2019). It was expected that further assessment would be undertaken as an ongoing operational activity. The final project status report also stated that the conduct of the global workshop on enterprise application centres was pending and would be carried out as a separate activity. The Board noted that those pending activities, along with the upgrade of the technology platform of Unite Applications, had not been completed as of December 2019.

125. The Board noted that, in line with the Unite Applications database, the application owners, going forward from February 2019, had plans to “maintain” only 502 of 988 business applications. The Board observed that, during the year 2019, the Office did not coordinate or liaise with the application owners and departmental focal points regarding active participation in reduction and/or decommissioning for further rationalization. From March to December 2019, only 47 applications were decommissioned, while 15 applications were added, resulting in net reduction of 32 applications. The Board selected a sample of 16 decommissioned applications to verify whether the decommissioning had followed due process in line with the technical procedure document (APP.03.PROC). However, as the necessary documentation was not provided, verification was not possible. The Board is of the view that improper or inadequate decommissioning may not result in the envisaged benefits, such as the redeployment of servers, the release of staff resources, the end of maintenance costs, the freeing up of hosting infrastructure and the archiving of critical data.

126. Although the strategy document envisaged that all application development outside of enterprise application centres was to cease, 19 out of 23 applications created in 2019 were developed outside of enterprise application centres, which indicated that the consolidation of the Organization’s resources in the enterprise application centres,⁷ as envisaged by the ICT strategy, had not yet been accomplished.

⁶ As reported in the report of the Board of Auditors (A/70/581) in December 2015.

⁷ By local ICT units, such as the Information and Communication Technology Service at the United Nations Office at Geneva; the Information Management, Communications and Technology Section in the Division of Administration at the Economic and Social Commission for Asia and the Pacific (ESCAP); the Information and Communications Technology Service at the Economic Commission for Latin America and the Caribbean; and the Information and Communications Technology Service at the Economic Commission for Africa.

The lack of control over application development exposed the Organization to the risk of duplicating expenditure and associated security risks. One way to avoid the proliferation of new application development by disparate units across the United Nations would be to institute a procedure to obtain clearance from the Chief of the Enterprise Solutions Service before developing a new application or software. The Board noticed that the technical procedure document (APP.02.PROC) of December 2015 did not provide for such clearance. The Office informed the Board that discussions were taken up to coordinate application development as an individual initiative. The Board is of the view that such isolated consultations were not a substitute for a formal control process.

127. The Board also noted that the organizational chart excluded the enterprise application centre in Vienna from the Enterprise Solutions Service after the management reforms. The Board was informed that the non-inclusion was due to funding complexities. The lack of control over the enterprise application centre in Vienna could hamper the envisaged standardization and economies of scale.

128. One of the objectives of application rationalization was lowering the cost of support, licensing and development. The Office had estimated a potential savings of \$20 million for retiring 1,540 applications. The Board had highlighted in its previous report that Unite Applications did not uniformly indicate the costs incurred in the development, maintenance and licensing of the applications, which made it difficult to estimate savings. There was no progress in 2019 in compiling data on savings made to determine the achievement of cost optimization objectives.

129. In view of the above, it was difficult to conclude whether the objectives of the application rationalization project had been realized, even by the end of 2019. The lack of information on costs incurred for applications and the creation of applications outside enterprise application centres are concerns that remain to be addressed.

130. The Board recommends that the Office identify additional applications to be decommissioned in consultation with other stakeholders.

131. The Office was of the view that the owner departments had the required knowledge, efforts and responsibility of identifying additional applications for decommissioning.

132. The Board recommends that the Office introduce procedural controls through a technical procedure document before application development.

133. The Office accepted the recommendation.

Application rationalization through consolidation with Inspira

134. The ICT strategy (A/69/517) envisaged that upgraded security combined with clearly defined standards would support the retirement of unsecure applications. The applications rationalization project (2016–2020) envisaged the consolidation and decommissioning of various human resources applications that had functionalities similar to those in Inspira.

135. The Office, based on information in Unite Applications, informed the Board that, as at 7 February 2020, 44 applications had been “retired” and consolidated with Inspira, while 18 additional applications had been identified for that purpose. Three applications had been merged with Inspira in 2018 and 2019. The Board selected two of those applications – “Production Roster – Roster Management” (the former Department of Political Affairs) and “My HR Online” (the former Office of Human Resource Management) – to review the process of their retirement and merger and the subsequent functioning of the merged functionalities. The Board observed the following from the review:

Data of Unite Applications are not updated and may not be reliable

136. “My HR Online” was a legacy application portal of the Office of Human Resources Management built on .NET and SQL Server that provided links and entry options to human resources applications. It was mainly used to access the “All Persons” database, which provided for the central issuance and management of index numbers. The Board noted that index number management had been live in Umoja since the first Umoja Extension 1 pilot in July 2014 and was extended to all entities of the United Nations system as part of the subsequent deployments in 2015 and 2016. The final decommissioning of “All Persons” was executed in May 2018 when the index number management processes in Umoja was deployed to the last two pending user groups: non-Secretariat United Nations entities and consultants/individual contractors in field missions. Thus, the main functionality of “My HR Online” was retired and merged with Umoja and not Inspira, as had been recorded in Unite Applications.

137. The “Production Roster” was an application on the Lotus Notes platform used by the former Department of Political Affairs to maintain rosters of experts and consultants. In line with the information available in Unite Applications, that application was identified for consolidation with Inspira and was retired in December 2018. The Board noted, however, that the application, although it had been decommissioned, was not merged with Inspira, and the roster was currently maintained on an Excel spreadsheet by the Department of Political and Peacebuilding Affairs. The Board also noted that the Department of Political and Peacebuilding Affairs held preliminary discussions with the Inspira team in November 2019 but development of the functionality in Inspira could not progress for want of funds.

138. The Board noted that application owners, in coordination with technical owners, are responsible for updating Unite Applications records. The Office conducts a yearly application asset campaign and sends communications to application owners to update their records. The incorrect recording regarding the merger and retirement of the applications highlights the need for the information in Unite Applications to be corrected.

Compliance of the technical procedure for application decommissioning

139. The technical procedure on application decommissioning of 2016 (revised in 2018) provided a checklist to be followed before the decommissioning of any application. The Board reviewed adherence to the procedure and noted the following:

(a) For the decommissioning of “My HR Online”, most of the information regarding compliance with the checklist for the technical procedure was recorded. The application data were not archived, and the project closure and lessons learned report was not prepared, although the other items on the checklist were completed;

(b) For the decommissioning of the “Production Roster” application, the Board could not check the adherence to the technical procedure fully, as the Department of Political and Peacebuilding Affairs, the application owner, did not provide a response. The Office provided information regarding the archiving and removal of the database from the production server.

Need for review of consolidation of applications with Inspira

140. The Office of Internal Oversight Services (OIOS), after an audit of Inspira, had recommended that 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 perform an assessment regarding the viability of the Inspira system and determine whether to invest in further

enhancements to the system or 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. The Office has agreed to implement the recommendation by March 2021. At the same time, 18 applications have been identified for consolidation with Inspira. In view of the OIOS assessment of Inspira, the decision on consolidating applications with Inspira needs to be reviewed.

141. In response, the Office stated that the retirement or consolidation of applications is taken into consideration and evaluated when business owners prioritize the work of the Inspira team. The Office also stated that the responsibility for the correct depiction of the decommissioning and merger process in Unite Applications lies with the application owners. The Office pointed out that the consolidation of the legacy roster application required additional funding, which would need to be identified by the Department of Political and Peacebuilding Affairs in order for the work to be initiated and the road mapped.

142. The Board recommends that the Office, in consultation with business owners, review and update records in Unite Applications for the correct depiction of the future road map regarding the decommissioning, consolidation or merger of applications.

143. The Board also recommends that the Administration review the future road map of all applications identified for consolidation in Inspira, in line with the decisions taken regarding Inspira.

144. The Office noted the observation and stated that business owners were responsible for updating records in Unite Applications, in consultation with the Office. Further, the action in relation to the second recommendation did not lie solely with the Office.

2. Website rationalization and compliance

145. The ICT Strategy ([A/69/517](#)) envisaged that three enterprise application centres would be responsible for coordinating and controlling web hosting and web development and would provide standardized website services in the Secretariat. All application development outside of the enterprise application centres was to cease and harmonized websites were to provide a more cohesive framework for the public web presence of the United Nations.

146. The project for website consolidation began in January 2014 and was aimed at increasing the efficiency of website operations, web design and security and achieving economies of scale through changes in the current operating model. The project was to be implemented in phases. The first phase, comprising the development of website technology, identification and remediation, had been completed.

147. In November 2017, the Management Committee recognized that a lack of adherence to governance combined with loopholes had led to the proliferation of non-compliant websites, increased ICT security risks and breaches, the use of non-standard technologies, little or no data integration, sharing or cross-promotion between sites, non-adherence to branding guidelines and non-compliance with the minimum standards for multilingualism of United Nations websites.

148. The Board was informed that the Unite Web platform (content management) was to support compliance in the five key areas (minimum mandatory security requirements, United Nations branding standards, accessibility standards, multilingual requirements, and approved enterprise technology standards and services). The platform was maintained, supported and regularly patched as new security vulnerabilities were identified and remediated. The Department of Global

Communications reviewed public information websites to ensure their compliance with standards for branding, accessibility for disabled persons and multilingualism before they were approved to “go live”.

149. The Board noted, based on data provided by the Office, that there were 802 Secretariat websites, including 32 websites created in 2019. The compliance of the websites with the stated norms was as follows:

(a) Some 60 per cent (480 of 802) of websites conformed to approved technologies.⁸ The Board noted that 4⁹ out of 32 new websites developed in 2019 did not conform to approved technologies;

(b) Some 3 per cent (22 of 802) of websites were fully compliant with the five key requirements. They included only 3 out of the 32 new websites created in 2019. Two¹⁰ out of three websites classified as critical were not compliant with the five key areas;

(c) Some 31 percent (252 of 802) of websites were fully compliant with the ICT security requirements, while the balance remained partially compliant or non-compliant;

(d) Most of the new websites (19 of 32) created in 2019 were developed outside of enterprise application centres,¹¹ although the ICT strategy envisaged that all application development outside of enterprise application centres was to cease;

(e) Some 10 percent (77 of 802) of websites were using Unite Web, the prescribed web content management platform.

150. The Board had reported (see [A/74/177](#)) that the website rationalization/consolidation project had been mainstreamed, although the core tasks set out in the ICT strategy had not been completed. The Board did not observe any efforts taken by the Office of Information and Communications Technology in 2019 to liaise with client departments to chart out a road map for the migration of all legacy websites to approved technologies and to ensure compliance with the five key areas, despite the assessment of the Office that websites built on non-compliant technologies (outside of the Unite Web platform) involved higher development costs, resources, redundancy and maintenance costs and lower security compared to the readily available Unite Web platform. The lack of adherence to governance and compliance processes exposed United Nations websites to unmitigated threats.

151. The Office stated in response that the focus had shifted towards compliance as the primary objective.

152. The Board did not observe any significant efforts being made towards the standardization of websites to conform to approved technologies and also to the five key areas of compliance. Non-standardization and non-compliance by public United Nations websites exposed the network to serious security risks. The Office stated that, considering the decentralized model of the ICT function and budget, the Administration should issue directives to departments to prepare their security compliance road map, and the Office could provide the technical guidance.

⁸ Drupal, Wordpress and html.

⁹ <https://sendacommitments.unisdr.org>; <https://ibptest.umoja.un.org>; <https://trade.unescap.org/analytics/>; and <https://drupal.undrr.org>.

¹⁰ <https://iseek-newyork.un.org> and <http://unocha.org/cerf/>.

¹¹ By local ICT units, such as the Information and Communication Technology Service at the United Nations Office at Geneva, the Information Management, Communications and Technology Section at ESCAP and private vendors.

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.**

154. The Administration noted the recommendation and stated that it was fully cognizant of the security requirements of public websites. A proposed technical road map for addressing the critical information security requirements with regard to websites was presented by the Office to the Information and Communications Technology Steering Committee on 1 June 2020 and was endorsed. In addition, an administrative instruction on United Nations website publishing, which would also articulate requirements, was nearing completion.

3. Enterprise Network Operations Centre

155. The ICT strategy (A/69/517) envisaged an enterprise network operations communications and security centre to provide round-the-clock monitoring and critical response coordination for the global network, security, asset health and disaster management. The Enterprise Network Operations Centre was to be implemented in phases. The first phase (monitoring of infrastructure in New York through the global Enterprise Network Operations Centre) and the second phase (consolidation of the global Enterprise Network Operations Centre and the Network Control Centre of the Information and Communications Technology Division) were completed in August 2017. The third phase of the project was to move the monitoring of the Regional Technology Centres from Geneva, Nairobi and Bangkok to the Network Control Centre in Valencia. In his fourth progress report, the Secretary-General stated that the third phase of the project was in progress (86 per cent complete). The fifth progress report stated that the Network Operations Centre had been expanded to monitor all network resources worldwide.

156. The Board noted that the Office had made no progress towards completion of the third phase in 2019, citing lack of funding. The Office formally closed the project in April 2019, stating that the plan to move other Regional Technology Centres (Asia, Africa and Europe) to the global Enterprise Network Operations Centre would be treated as a separate activity.

157. The Board noted that the Network Control Centre services were being provided by two vendors, one for the facility in Brindisi, Italy, and the other for the Valencia facility. Both contracts provided for essentially the same set of services, comprising user support, incident resolution, configuration management, operational management and performance management. In addition, the Regional Technology Centres were monitoring their regional and local network along with the data centres at eight locations with in-house resources.¹²

158. The Board observed the following: -

(a) The Office had not assessed the expenditure involved in the shifting of monitoring activities from the Regional Technology Centres to the Network Control Centre in line with the original project plan. The lack of funding for the activity quoted by the Office was thus not based on any budgetary assessment;

(b) The shifting of monitoring activities from the Regional Technology Centres to the Network Control Centre would have released some of the resources in the Regional Technology Centres, thereby reducing the financial commitments on those resources, which may have assisted the shifting process.

¹² Offices away from Headquarters, regional commissions and the campus of the Office of the United Nations High Commissioner for Human Rights in Geneva.

159. The Secretary-General, in his fifth progress report, stated that the Network Operations Centre had been expanded to monitor all network resources worldwide. The present arrangement of multiple agencies involved in the monitoring activity, with separate set of processes, protocols and reporting lines, cannot be considered to be the one envisaged by the ICT strategy, which placed the overall responsibility of a reliable, secure network and infrastructure on a unified Enterprise Network Operations Centre.

160. The Office, on the issue of the consolidation of the Enterprise Network Operations Centre, stated during its exit meeting that the resource identification for project completion was not under its control and that the matter needed to be addressed by the Administration. The Office also stated that the monitoring of the local data centres in offices away from Headquarters and regional commissions had not been finalized, but that the global network was managed and monitored by the global Enterprise Network Operations Centre.

161. The Board recommends that the Administration undertake improvements in the planning process and a comprehensive evaluation of resource requirements, in consultation with all relevant stakeholders, and consolidate the Enterprise Network Operations Centre, as set out in the ICT strategy, within a defined time frame.

4. Network and infrastructure

162. The ICT strategy (A/69/517) had envisaged the provision of a wide area network structure, facilitating inter-office connectivity and significantly reducing the diversity in quality of service through established ICT frameworks. The uniformity of the approach would bring improvements to core service delivery and facilitate any future innovations. The Secretary-General, in his fifth progress report, stated that the One United Nations global wide area network had unified 594 locations under a single standard and provided greater consistency in bandwidth across duty stations.

163. The Board noted that the Office provided application-hosting services to the United Nations Secretariat through a wide area network. The overall goal of the network strategy was to ensure standardization and optimization and provide a stable network infrastructure to meet the demands of evolving United Nations business requirements.

164. The efficiency of network service is measured through the availability of the network (excluding planned outages) and the time taken to resolve “incidents”¹³ reported by users. Incidents have been accorded different priorities (urgent to low) and time targets for resolving them have been set against each priority (from a maximum of 9 hours for urgent to 120 hours for low priority). The Board noted that 80–85 per cent of the network incidents were to be detected by monitoring tools, without human intervention, to save time. However, the time delta (delays) between incident occurrence and incident ticket logging were not monitored and the delays were not captured in performances. The Board also noted that, while the targeted availability of 99.5 per cent was met, the overall percentage of incident management in the prescribed timeline for the whole year was 98.31 per cent, with 246 of the 14,550 incidents reported in 2019 not being resolved in the prescribed time. In 2019, 3 out of 45 critical incidents (6.67 per cent) and 32 out of 1,172 high priority incidents (2.73 per cent) were not resolved in time.

165. The Office responded that the time delta could be measured in the future with the introduction of the iNeed self-service tool and attributed the delay in incident

¹³ An incident is defined as an unplanned interruption or reduction in the quality of any information technology service.

resolution to the financial crunch, which prevented having dedicated engineers at all sites.

166. The Board also noticed that the Office had signed a service-level agreement with the former Department of Field Support in December 2017 for the provision and support of server hosting and prescribed related services to be delivered at the national data centres in Brindisi (Global Service Centre), and Valencia (United Nations Information and Communications Technology Facility). The Network Control Centre used the services of vendors in both of the locations, with payment of approximately 1 million euros to each vendor.

167. The contracts with the two vendors defined key performance indicators and performance breaches were to be penalized, with prescribed liquidated damages for every occurrence per week or month, subject to a maximum of 10 per cent of total payments. Scrutiny of the performance data of both vendors revealed that the vendors had breached the key performance indicators, with breaches including the following:

(a) “Timely incident escalation¹⁴ threshold” (requiring escalation to tier 2 engineers within one hour for all those incidents that could not be resolved remotely) not met for 3 to 10 months of the year;

(b) “Minimum per cent incident detection using monitoring tools” (requiring automatic detection by the vendor’s monitoring mechanism instead of waiting for a formal complaint from users) not met for 11 to 12 months;

(c) “Nonconformities identified in change management audits” for 9 out of 12 months;

(d) “Timely closure¹⁵ of incidents” not met in 5 out of 12 months by one vendor.

168. Despite the breaches of key performance indicator thresholds, no penalty was levied on the vendors, as is required by article 11 of both contracts. The vendors were not requested to implement remedies, as is provided for in article 7 of both contracts.

169. The Office replied that all the vendor breaches had been taken up with vendors but that the liability for breach could not be proportioned to the vendor alone. The Board, however, could not find any efforts at analysis and segregation of the vendor fault in relation to the incidents.

170. The Board also noted that the performance measurement of the vendors was inconsistent with the contract in some cases, and there were differences in the definition of key performance indicators in the contracts with the two vendors, as detailed below:

(a) Delays were measured by “monthly averages” instead of a more appropriate metric of measurement, “number of incidents”. The key performance indicator pertaining to customer satisfaction surveys was measured only once a year instead of having a continuous ongoing survey programme, as envisaged in the contract;

(b) The key performance indicators of the Brindisi contract included “number of nonconformities identified in change management audits” and “number of service-level agreement breaches caused by inaccurate configuration management database”, which were not found in the Valencia contract. Similarly, the key performance indicators of the Valencia contract included “percentage of incidents properly linked

¹⁴ Within a monthly average of one hour.

¹⁵ Within a monthly average of four hours, once all tier 2 sections have considered the service available.

with the impacted configuration items” and “average time to close incidents, once all tier 2 sections have considered the service available”, which were not found in the Brindisi contract;

(c) The requirement of the minimum “85 per cent” incident identification monitoring tool in the Brindisi contract of 2015 was diluted to “80 per cent” in the Valencia contract in 2016;

(d) The performance on problem management, “number of problems identified by the Network Control Centre that end in a request for change per month” was measured in percentage and absolute numbers for the Brindisi and Valencia contracts, respectively. There was no clarity on the required performance.

171. The Office replied that the variations were attributable to continuous improvements and lessons learned. The Board noted that such variations in performance requirements would lead to inconsistencies in performance at each location, thereby hampering the homogeneity of services provided. The Board did not find evidence of efforts to define appropriate key performance indicators and to harmonize them for stable network service.

172. The Board recommends that the Office ensure the accountability of vendors for non-achievement of the prescribed key performance indicators.

173. The Board also recommends that the Office align the key performance indicators in the next contract (for both Brindisi and Valencia) so that they are consistent and homogeneous and reflect the operational requirements of the network.

174. The Office accepted the recommendations.

5. Unite Service Desk

175. In the ICT strategy ([A/69/517](#)), it was recognized that enterprise service desks were required to support enterprise-wide applications and infrastructure. The harmonization of five help-desk facilities¹⁶ into an “Enterprise Service Desk” to deliver a global, cost-effective and efficient shared-service model, which would provide global round-the-clock coverage, was considered.

176. The project was to be implemented in phases, with phase 2¹⁷ completed in 2015. The aim of the Unite Service Desk project (phase 3) was to build a standard global model, together with improvements in overall resource capabilities, processes and technology, which was to be completed by December 2018. The Board had reported that the project had been mainstreamed, although significant work on phase 3 remained incomplete (see [A/74/177](#)). The Enterprise Project Management Office change control form that formally closed the project in April 2019 stated that the plan to consolidate tier 1 (field unit(s) of the Department of Field Support) into the Unite Service Desk would be reviewed as a separate activity.

177. The Secretary-General, in his fifth progress report on the implementation of the ICT strategy ([A/74/353](#)), stated that approximately 131 help desks had been in operation across the Secretariat and that they were consolidated into four locations, operating as one Unite Service Desk that provided services 24/7, with faster response and resolution times and higher user satisfaction.

178. The Board noted that efforts to consolidate tier 1 entities of the Information and Communications Technology Division were ongoing in 2019. The Business Solutions

¹⁶ ESCAP, the Global Service Centre, the United Nations Offices at Geneva and Nairobi, and Headquarters.

¹⁷ Consolidating the Unite Service Desk with the New York local service desk.

Centre for tier 1 (field) support had been partially consolidated, although the Unite Service Desk in Brindisi was yet to be included in the call system of the Unite Service Desk. The catalogue migration of the Unite Service Desk in Brindisi was in process. The consolidation time frame for some of the SharePoint applications¹⁸ and legacy applications¹⁹ were yet to be defined. Those activities were expected to be completed in the year 2021 and beyond. The Board also noted that the local service desk of all locations except New York²⁰ were yet to be consolidated. However, there was no consolidation plan document detailing the process and timelines for the full consolidation of all applications and local service desks with the Unite Service Desk.

179. The Board noted that the Office and other stakeholders could obtain the data about incidents and requests for service regarding Umoja through iNeed management reports, but they did not offer the flexibility for systematic analyses, which could be better performed only off-system. As at 31 December 2019, there was a backlog of 968 incidents and 1,492 requests for service, which were awaiting resolution for over 296 days and 171 days, respectively. The monitoring of the timely resolution and closure of incidents and requests for service in the Unite Service Desks was, therefore, not being monitored effectively.

180. The Board further observed that the owners of enterprise applications, with the exception of Umoja, had not implemented service-level agreements with client organizations, leading to the absence of formal documents establishing targeted timelines for the resolution and closure of requests based on their criticality. In the absence of performance benchmarks, the utility of service desks could not be reasonably assessed. Therefore, a monitoring framework was needed to enforce accountability.

181. The Board recommends that the Office prepare a consolidation road map for all pending activities to achieve a fully unified Enterprise Service Desk.

182. The Office accepted the recommendation.

183. The Board recommends that the Administration take steps for the formulation of appropriate performance benchmarks for the resolution of incidents and requests for enterprise applications based on service-level agreements, and monitor the performance of the Unite Service Desks against them.

E. Innovation

1. Hybrid cloud computing project

184. The Office of Information and Communications Technology prepared a business case for hybrid cloud computing in January 2017. The business case envisaged that the cloud project would be completed by June 2018. The hybrid model for cloud computing comprised both private and public clouds, which allowed certain components to be hosted by an external party while others remained under the organization's control. The quantifiable benefit of the project was the saving of the high costs incurred for maintaining an on-premises enterprise data centre, estimated at \$1,138,207 per year (the projection was based on the costs incurred on virtual servers with 4 cores and 19 gigabytes (GB) of random-access memory (RAM) each and the related data storage and wide area network (WAN) usage).

¹⁸ Including COMET1, PKCM, COP, ORR, COSMOS, DTM and Umoja-SharePoint data integration.

¹⁹ Including FSS, NOTICAS, VAS, WES, EFM-VOVICI, ROADMAP and OROLSI.

²⁰ Bangkok, Brindisi, Geneva and Nairobi.

185. In his fifth progress report, the Secretary-General stated that the Office of Information and Communications Technology had documented the protection and confidentiality requirements for the deployment and operations of cloud computing services. The requirements were specified in the United Nations cloud computing technical procedure (April 2018). The Office enforced the documented procedure through a provisioning process that ensures that cloud services comply with United Nations ICT policies on governance, security of information, risk assessment and mitigation.

186. The Board noted that, in line with the road map for implementation of the cloud strategy, a proof of concept was successfully conducted in 2017. The implementation was to start with the approval of a strategy and a decision on a development platform at the beginning of 2018. In the following 12 months, an application development framework was to be developed after a governance policy framework was established, pilot projects were to be delivered and the next set of projects was to be selected on the basis of lessons learned from the pilot.

187. The Board observed that the cloud strategy was formally approved only in April 2018 and that the activities envisaged to be completed by December 2018, in accordance with the road map, were not yet complete. The Office of Information and Communications Technology provided details of 91 applications which had been selected for migration to cloud, of which 49 had been migrated by February 2020. The Office stated that the 91 applications had not been selected as a pilot and that it was not committed to migrating that number of applications to the cloud. The Office did not provide specifics but stated that savings had been achieved through migration of the secondary data centre in New York to the cloud and a decrease in capital investments in New York from 2017 to date.

188. In line with the ICT technical procedure, cloud service consumers (i.e., the Office of Information and Communications Technology) should be involved in the risk assessment and impact analysis carried out by the cloud service provider and must approve the final risk assessment and mitigation plan. The Office participated in an assessment of a hybrid scheme of cloud services during 2019. The assessment identified potential concerns as to critical issues related to security and management or governance. The following issues were identified:

- (a) The web application firewalls were not configured for applications;
- (b) Azure Security Center, which provides a visual of non-compliance resources with resolution suggestions was not currently being used for management and governance. The Office stated that certain features were not implemented owing to a requirement for a licence for which a higher premium is payable;
- (c) No disaster recovery solutions were implemented in Azure cloud resources. The Office stated that business owners could opt for a disaster recovery solution depending on the criticality of their application;
- (d) There were no backups for SQL platform as a service (PaaS) databases;
- (e) The Office was still in the process of defining and enforcing virtual machine policies;
- (f) The Office was relying on mandatory training on information security awareness, although the assessment indicated that users should undergo this training every year owing to faster changes in the work environment.

189. These concerns could potentially lead to loss of business reputation, security breaches and productivity and/or financial inefficiencies. The Office of Information and Communications Technology stated that it was informed in advance of the roles

of business owners, and risk-related activities that needed to be handled by the business owners were also listed in the cloud computing policy.

190. The cloud compliance team has been tasked by the Chief of the Hybrid Cloud Computing Section to audit and report monthly on Unite Cloud services. These cloud compliance reports include observations against cloud governance (governance and policy; cost management; resource consistency; access and identity; and deployment acceleration) and service operations. The Board observed that the cloud compliance team had conducted a compliance audit and prepared a cumulative working document covering three months (September–November 2019).

191. The Board observed that the compliance report indicated that the readiness level achieved for cloud governance and service operations was 50 to 83 per cent. There were 35 recommendations related to security aspects, 16²¹ of which were high impact. The Board noted that eight “guardrails” (i.e., minimum security requirements in SPOKES)²² had been developed, of which only four had been implemented to date.

192. The Board noted that the technical procedure prescribed a review of cloud service providers’ business continuity and disaster recovery plans for technology, approach and compatibility with those of the United Nations. The Office of Information and Communications Technology stated that the clients could access the Azure portal and confirm their availability zones within a region and global availability across regions. Depending on criticality and business requirements, application owners could decide whether to architect their applications to use disaster recovery and high availability services provided by the cloud service provider.

193. The Board also recommends that the Office of Information and Communications Technology, along with the user departments and offices, develop a comprehensive strategic road map and set achievable milestones for the timely completion of the hybrid cloud computing project so that the envisaged cost savings are achieved.

194. The Office of Information and Communications Technology accepted the recommendation.

195. The Board recommends that the Office of Information and Communications Technology improve the compliance of third-party cloud systems through the implementation of high-impact recommendations, in particular for such aspects as security, availability and performance.

2. Information and data management

Information management: Unite workspace project

196. The aim of the Unite Workspace project (April 2019) was to implement the cloud-based SharePoint and OneDrive as the enterprise standard platform for file sharing and collaboration. Deployment had been initiated in January 2019 at Headquarters and lessons learned were expected to inform global deployment. The project was to deliver a standardized approach to file management and collaboration while decommissioning the legacy solutions (e.g., Unite Docs, Unite Connections, Cosmos, Share Drive and HP TRIM), in line with information management and information security principles. The project was to be completed in two stages:

²¹ Advanced data security, the encryption of automation account variables, the enabling of secure transfer to storage accounts, the classification of sensitive data in the SQL database, hardening of rules for web applications on infrastructure as a service (IaaS) network security groups, enabling vulnerability assessment, etc.

²² Virtual networks that peer with the hub (central point of connectivity to on-premises networks) which can be used to isolate workloads.

deployment of tools and training to all users (stage I), to be completed by June 2019; and migration of files from the current platform, along with the decommissioning of legacy platforms (stage II), to be completed by March 2020.

197. The Board observed that the Office of Information and Communications Technology had created SharePoint Online sites (under stage I) for the departments at Headquarters and trained 518 site owners by February 2020.

198. The Office of Information and Communications Technology stated that the project could start in April 2019, with revised timelines: (a) deployment of tools by September 2019; and (b) migration of files and decommission of the legacy platform by September 2020. The Office further stated that user access to Unite Connections had been disabled on 1 January 2020, but technical decommissioning of Unite Connections was yet to be finalized.

199. The Board noted that, although the Unite Workspace project had started in January 2019 and five field missions had since completed the migration of files from Share Drive to OneDrive and SharePoint, the guidelines on legacy content migration had not been finalized to date. The Board also noted that, despite commencement of the Unite Workspace in January 2019, the Office of Information and Communications Technology had not updated the policy on record-keeping and the management of United Nations archives (ST/SGB/2007/5) or on information sensitivity, classification and handling (ST/SGB/2007/6). Nor was there a policy for information privacy and integrity of information to deal with challenges posed by the use of cloud-based systems.

200. The Office of Information and Communications Technology informed the Board that it was drafting the United Nations information management policy, which would provide a framework for managing all United Nations information as organization assets throughout their life cycle and would also ensure a monitoring mechanism for the compliance of digital and physical record management policies. To address the immediate policy and governance needs of the project, a governance working group from members of different Secretariat entities had been established. Regarding privacy of information, the Office informed the Board that it followed the principles on personal data protection and privacy issued by the United Nations System Chief Executives Board for Coordination (CEB) in 2018.

201. The Board noted that the governance working group had drafted a guidance document on legacy content migration only in October 2019, which was expected to be finalized by February 2020. The Board also noted that concerns had been raised in an enterprise project update meeting regarding the lack of a procedure to manage confidential information in the cloud (Teams, SharePoint and OneDrive) as there was no policy document outlining how confidential documentation would be managed in the cloud.

202. The Office of Information and Communications Technology also stated that the importance of a privacy policy for the Secretariat was being discussed in the context of discussions on data strategy led by the Executive Office of the Secretary-General.

203. The Board recommends that the Administration make efforts to adhere to milestones set for the timely completion of the Unite Workspace project.

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 CEB.

Data management

205. In his fifth annual progress report, the Secretary-General stated that management reform had mandated the Office of Information and Communications Technology to support clients across the Secretariat in data and information management. The Office had initiated work on a data strategy that would provide an overarching framework for data-driven decision-making at the Secretariat. This would be implemented in a consultative and collaborative process, during which the most appropriate levels of delegation would be determined. The data strategy would enable a culture of cooperation, increase data literacy and provide good data governance.

206. The Board noted that the Office of Information and Communications Technology had drafted a data strategy based on academic, private sector and United Nations expertise. It had also been informed by discussions held at the data symposium on the theme “The future of data at the United Nations”, held on 8 October 2019. Meanwhile, the Executive Office of the Secretary-General had launched a United Nations system-wide data strategy initiative. The Office of Information and Communications Technology, along with other United Nations departments, agencies, funds and programmes, had aligned its efforts to support the higher-level initiative. The Office of Information and Communications Technology intended to revisit the Secretariat-wide draft data strategy once its work contributing to the system-wide product was completed in Spring 2020.

207. The Office of Information and Communications Technology was of the view that the benefit of having an overarching United Nations system-wide data strategy was that such a high-level strategy could provide strategic coordination to all data efforts and could help ensure that the entire Organization was moving in a common direction in the data space. The Office stated that, in this initiative led by the Executive Office of the Secretary-General, key pillars that would be covered were data principles, people and culture, data environment and infrastructure, data assets and use, data privacy and data governance. The Office informed the Board that, as a co-lead, it contributed heavily to this effort.

208. In the fifth annual progress report, the Secretary-General stated that the Office of Information and Communications Technology had started to address the need for a central repository of data sources that showed where and how the data could be accessed. This organization-wide data catalogue would enable self-service discovery of data from any source and would also provide a means to register, annotate, discover, understand and consume data sources. Data, including underlying data in readily consumable structured data formats, would be readily available to relevant users while observing all the organization’s rules and policies around data privacy, information security and data quality.

209. The Board was informed that a pilot initiative for a data platform that served as a central repository of authoritative data sources had been started in 2019. The Office of Information and Communications Technology also informed the Board that the initiative was still in the early stages of the planning phase and that, to date, it had neither selected entities for this pilot initiative nor fixed any timelines for providing data by selected entities. The Office had not developed a comprehensive road map for a pilot project for a central repository of data sources so that timely completion of the project could be ensured. The Office stated that the project was a new initiative which required careful planning to implement a well-governed approach for universal access to data based on an organization-wide data provision and distribution model. The Office was evaluating cloud-based capabilities with regard to data catalogue functionality which would then contribute to the formulation of a comprehensive road map on data management and governance. As part of the road map development, the

Office would engage with Secretariat entities to identify critical datasets to be included in the pilot.

210. The Board recommends that the Office of Information and Communications Technology 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.

3. United Nations Technology Innovation Labs

211. An initiative for the establishment of United Nations Technology Innovation Labs had been taken up by the Office of Information and Communications Technology in collaboration with interested Member States. The Labs were to use cutting-edge frontier technologies to pioneer open-source technological solutions to global humanitarian, sustainable development, climate change and peace and security challenges. The Labs would work as incubators and accelerators to foster collaborative problem-solving among the United Nations system, the private and public sectors, academia and civil society, with solutions that could then be scaled up and implemented to address global issues.

212. The Board noted that, in 2019, a further lab had been operationalized, in addition to the three existing labs established in 2018. The Board also observed that United Nations Technology Innovation Labs advisory panels for tracking and reporting on the operational Labs' performance were yet to be established for two labs, although they had been established in November 2018 and April 2019 respectively. The Office stated that, in the absence of the advisory panels, activities were being monitored by the Office through weekly meetings with lab managers.

213. The Board further observed that the Office of Information and Communications Technology had established an open source and intellectual property advisory group for the development of an open source and intellectual property framework/model that would enable the Labs to foster "sharable" technologies and catalyse the co-creation of digital solutions. However, no such framework/model had been developed to date, and technology solutions developed by the labs could not be shared with Member States.

214. The Office of Information and Communications Technology also informed the Board that the programme to establish labs was under review by the Executive Office of the Secretary-General and that there could be adjustments to the programme when the review was completed.

215. The Board recommends that the Office of Information and Communications Technology prepare and implement the open source and intellectual property framework/model, so that technology solutions developed by the Labs could be shared with Member States.

216. The Office of Information and Communications Technology informed the Board that it had received a first advisory note from the Advisory Group on Open-source and Intellectual Property, which was establishing one possible framework model for engagement on sharable solutions that would be built by the Lab.

F. Optimal utilization of ICT resources

1. Global sourcing project

217. The ICT strategy envisaged global sourcing to ensure that all ICT resources are optimally managed. It was envisaged that the United Nations would strengthen the visibility and control of ICT expenditure through the establishment of standard

processes, centralized contract management capacity, a repository of contracts and a management tool for software licences and hardware purchases. The General Assembly endorsed the global sourcing project as a measure for the defragmentation of system contracts and the consolidation of professional services.

218. In his fourth progress report, the Secretary-General stated that the requests for proposals for ICT and application services were complete and the finish date for solicitation and contract award was 14 February 2019. While reporting on the progress report, the Board pointed out that the targeted finish date had been revised to 30 May 2019 for ICT services and 20 July 2019 for application services (see [A/74/177](#)). In his fifth progress report, the Secretary-General reported that the award of the contract for ICT services (fully managed services, task order services and integrated workforce services) and application services were expected to be completed in the third quarter of 2019.

219. The Board noted that the contract for application services was at the stage of financial negotiations with vendors and the contract was expected to be awarded by the end of June 2020. The Office of Information and Communications Technology informed the Board that technical evaluation of bids was complex as it covered a wide range of technologies and the financial negotiations phase had started only as from December 2019. The Board also noted that the contract awards for both package A (fully managed services) and package B (integrated and task order Services) of ICT services had been cancelled. The Office informed the Board that the Headquarters Committee on Contracts had rejected the contract award as only one vendor had been found that was technically qualified to implement both the packages. The Office also informed the Board that the scope of work for ICT services was currently being revisited and that, tentatively, the new solicitation would be communicated to the Procurement Division in the second quarter of 2020.

220. The Board had reported, in its third progress report ([A/74/177](#)), that for cloud hosting services, the provisioning for a second service provider was under negotiation. The Board noted that it was still under negotiation in March 2020. The Office of Information and Communications Technology informed the Board that the contract was expected to be awarded by the second quarter of 2020.

221. The Board observed that global sourcing of ICT and application services had been initiated as early as December 2016 and the finish dates for award of contracts had been revised multiple times. Meanwhile, the current contracts with vendors for ICT services had been further extended for a period of two years, until December 2021.

222. The Board also noted that the Enterprise Project Management Office had not prepared any formal status reports on global sourcing project during 2019 for reporting to governance bodies and/or for managing risks. The Office of Information and Communications Technology stated that there were regular internal meetings within the Office, with the Procurement Division and the Office of Supply Chain Management on all procurement and supply chain-related activities.

223. In his fifth progress report, the Secretary-General stated that the Office of Information and Communications Technology was working on a plan to transition from current service providers to the new contractual modality and achieve its goal of optimal utilization of ICT resources. The Board noted that, as at February 2020, the Office had not determined any such transition plan. The Office stated that, for application services, once the contract was formally awarded, transition plans would be determined appropriately. The Board was verbally informed that there was no necessity to prepare a high-level transition plan for cloud services as there was no existing vendor and the individual business application owners themselves had to provide inputs for cloud onboarding for each application.

224. The Office of Information and Communications Technology shared with the Board a high-level transition plan related to fully managed services, integrated workforce services and task order services. However, the Office stated that the plan had no relevance as the requests for proposals had been cancelled. The Board also noted that, in the hybrid cloud computing meeting minutes dated 27 February 2019, it was mentioned that the Procurement Division had proposed to negotiate with recommended vendors for a transition time plan. The Board is of the view that detailed transition plans with current baseline financial information need to be prepared for each of the ICT services.

225. Under the ICT strategy (A/69/517), the implementation of the proposed new processes, governance and organizational structure for ICT would allow contracts to be managed more efficiently and optimize buying power. In its second annual progress report, the Board had recommended that savings due to global sourcing be estimated. The Office of Information and Communications Technology informed the Board that no concept note or business case had been prepared for transition to fully managed, integrated and task order-based ICT and application services. The Office thus did not have any quantifiable data of the benefits to be accrued or an estimation of the savings to be realized through a transition to global sourcing.

226. The Board recommends that the Office of Information and Communications Technology 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.

227. The Board also recommends that the Office of Information and Communications Technology prepare detailed transition plans for each of the global sourcing projects for smooth onboarding of the new service providers.

228. The Office of Information and Communications Technology accepted the recommendations.

2. Avoidable expenditure on Microsoft Office 365 licences and desktop telephone

229. Under the ICT strategy, the Office of Information and Communications Technology, as part of its improved stewardship, was to ensure that all ICT resources were optimally managed.

230. The Office of Information and Communications Technology informed the Board that, during the onboarding of personnel, an authorized requester (for human resources or a technical focal point in the entity) would submit a request for service via the Unite self-service portal for Unite ID, email, network, telephone and any related ICT service from the ICT services catalogue. The role of human resources in the client department was that of submitter and approver for a request for services under the established and published procedures at Headquarters.

231. The personal computing and enterprise applications core packages (bundled) are mandatory subscriptions for Headquarters. Microsoft Office 365 services are provided by the Office of Information and Communications Technology and the licence fee per user is paid to Microsoft by the United Nations. The total number of Office 365 licences was approximately 62,000 as at October 2018 and 60,000 as at October 2019. The Board was informed that there were 1,869 dormant user accounts as at 31 December 2018 and 5,441 as at 31 December 2019. The user accounts comprising an Office 365 licence and IP telephone would remain dormant until the process of identification of dormancy and approval for its deprovisioning from the authorized focal point was completed.

232. According to the rate cards for 2016/17 applicable for the year 2019, the rate for each Microsoft 365 Enterprise E3 licence was \$189.60 per year, while the right to

use charge for the IP telephones (desktop telephones) with PC installed was \$230. The annual expenditure for licence fees for the 5,441 dormant Office 365 accounts and the respective IP telephones amounts to \$ 1.03 million and \$1.25 million per year, respectively, which was avoidable.

233. In respect of desktop telephone connections, the Office of Information and Communications Technology informed the Board that it was undertaking a review of all desktop telephone connections that had been dormant, with a view to liaising with the entities to which the communications equipment had originally been assigned and obtaining confirmation as to the need to maintain or deprovision the equipment. In the case of Office 365 licences, the Board was informed that a tool to identify and monitor the dormant accounts had been made available to each field technology section and work was under way to make this information available to departments and offices.

234. The Board is of the view that the Office of Information and Communications Technology, as a second line of defence in the overall accountability system in the Secretariat and responsible for the stewardship of ICT resources, needs to proactively liaise with the administrative focal point or human resources in the client department in tracking and disabling dormant accounts. The Office has visibility regarding the use of licences as it is the final action point for “switch on/switch off” of ICT Services. The Board is of the view that the issue could be flagged to the Information and Communications Technology Steering Committee, considering the potential operational and financial risk, to ensure better co-operation from user departments.

235. The Board recommends that the Office of Information and Communications Technology establish an improved collaborative mechanism with administrative focal points in respect of dormant account holders in their departments or offices to disable accounts and telephone connections that are no longer needed.

236. The Board also recommends that the Office of Information and Communications Technology consider briefing the Information and Communications Technology Steering Committee on the potential operational and financial risks presented by the dormant accounts and seek its intervention on the matter.

237. The Office of Information and Communications Technology accepted both the recommendations.

3. Defragmentation

238. Under the ICT strategy, the Office of Information and Communications Technology is mandated to focus on defragmentation, the retirement of systems and global sourcing to ensure that all ICT resources are optimally managed. The harmonization of functions in regional ICT units, data centres and applications centres was envisaged to reduce fragmentation, inefficiencies and carbon footprint. In its resolution 69/262, the General Assembly requested the Secretary General to continue his efforts to reduce the level of fragmentation of the information and communications technology environment across the Secretariat and at all duty stations and field missions.

Enterprise application centres

239. The ICT strategy provides for enterprise application centres as part of the enterprise delivery framework. It was intended that the existing application centres in New York, Bangkok and Vienna would be strengthened and upgraded to enterprise application centres. The Board reported in its third progress report that the enterprise application centre in Vienna continued to run its own ICT unit, the Information

Technology Service, which did not have a reporting line to the Chief Information Technology Officer, as envisaged in the ICT strategy.

240. In his report on shifting the management paradigm in the United Nations ([A/72/492/Add.2](#)), the Secretary-General proposed the creation of an Enterprise Solutions Service comprising the Office of the Chief, the enterprise applications centres for the Americas and for Asia, thus excluding the enterprise application centre in Vienna.

241. The Board noted that the restructuring, further to the management reforms, had not addressed the fragmentation of applications and information and communications technology with the enterprise application centre in Vienna remaining unaligned to Office of Information and Communications Technology.

ICT units in other entities

242. Under the ICT strategy, the harmonization of the then existing 70 ICT units across the organization was proposed, to reduce overlap, disconnect and redundancy of purpose of information and data environments. The ICT strategy was also to ensure that all ICT plans, investments and their implementation were subject to strict governance and review processes. In his fifth progress report, the Secretary-General reported that a significant portion of the fragmentation had been addressed through the consolidation of key ICT units, stronger governance arrangements and participative ICT activities. The Board was informed that 34 departments had their own ICT staff. The total number of such staff was 499.

243. The Board noted that four departments, the Department of Management Strategy, Policy and Compliance, the Department of Operational Support, the Department of Safety and Security and the Office for the Coordination of Humanitarian Affairs had been consolidated and that the Department for General Assembly and Conference Management had been partially consolidated. The Office of Information and Communications Technology stressed that coordination had improved over the five years of strategy implementation, and ICT entities across the Secretariat were more fully engaged, availed themselves of the Office advisory services and guidance and participated actively in ICT governance bodies that were designed to strengthen coherence.

244. According to paragraph 2.2 (g) of the Secretary-General's bulletin on the organization of the Office of Information and Communications Technology ([ST/SGB/2016/11](#)), the Office is responsible for review of budgets and projects from all funding sources for all ICT initiatives and operations of the Secretariat before their submission to the (then) Office of Programme Planning, Budget and Accounts. The Advisory Committee had stressed that the Chief Information Technology Officer should be fully engaged in the budget preparation process, including providing clear instructions for the preparation of the budget proposals based on Secretariat-wide ICT standards and priorities ([A/70/755](#), para. 37). The Advisory Committee has emphasized this issue time and again and recommended that the budgets and projects are reviewed by the Office within existing governance structures (see [A/71/785](#), para. 9, [A/72/7/Add.51](#), para. 13, and [A/73/759](#), para. 19). The Office informed the Board that it provided budget instructions to the Controller, who incorporated these into the formal budget instructions. However, no entities submitted their budgets to the Office for review and the Office could not enforce this. The Office also confirmed that it did not have any information on budget for ICT activities in various entities under different funding sources. The Office also informed the Board that it did not leverage effectively financial information that was available in Umoja regarding ICT.

245. The Board is of the view that, although the ICT strategy implementation period ended in February 2020, the ICT units, which were located in different departments, offices and field missions, remained fragmented.

246. The Board recommends that the Administration continue its efforts towards defragmentation of the ICT environment, including ensuring oversight on ICT-related budgets across the Secretariat, duty stations and field missions.

IV. Acknowledgements

247. The Board wishes to express its appreciation for the cooperation and assistance extended to its staff by the Chief Information Technology Officer, the Office of Information and Communications Technology and members of their staff.

(Signed) Kay **Scheller**
President of the German Federal Court of Auditors
Chair of the Board of Auditors

(Signed) Rajiv **Mehrishi**
Comptroller and Auditor General of India
(Lead Auditor)

(Signed) Jorge **Bermúdez**
Comptroller General of the Republic of Chile

21 July 2020

Annex I

Status of implementation of the recommendations on information and communications technology affairs

<i>No.</i>	<i>Report reference</i>	<i>Recommendation of the Board</i>	<i>Administration's response</i>	<i>Board's assessment</i>	<i>Fully implemented</i>	<i>Under implementation</i>	<i>Not implemented</i>	<i>Overtaken by events</i>
1	A/67/651 , para. 31	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 should 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.	Under implementation.	The Administration has been of the view that the Office of Information and Communications Technology has issued the guidelines in this regard but the presentation and execution of budget remains the responsibility of heads of departments and offices. The Board of Auditors has maintained its view that compliance with the guidelines has not been ensured. The recommendation is considered to be under implementation, as also stated by the Administration.		X		
2	A/67/651 , para. 32	The entities, offices and programmes comprising the United Nations should prioritize ICT funding to ensure that the right balance of attention is given to transformation, improvement and leadership, frameworks and policies, and operational services.	Under implementation.	The Administration has been of the view that the Office of Information and Communications Technology has issued the guidelines in this regard but the presentation and execution of budget remains the responsibility of heads of departments and offices. The Board is of the view that compliance with the guidelines has not been ensured. Moreover, the Office is starved of funds as the client departments make only partial payment for the services provided to them. Cost recovery is therefore incomplete. Therefore, the recommendation is considered to be under implementation, as also stated by the Administration.		X		

No.	Report reference	Recommendation of the Board	Administration's response	Board's assessment	Fully implemented	Under implementation	Not implemented	Overtaken by events
3	A/67/651 , para. 39	As a necessary precursor to any new ICT strategy, and to reduce the substantial risks associated with the implementation of a global enterprise resource planning system, the Administration should clearly document those elements of the culture, custom, practices and processes, as well as key cost and performance information, that may affect the achievability of a global ICT transformation in the United Nations. Using the results of this review, the Administration should define the Organization's overall objectives and specify realistic ambitions for global service delivery, consistent processes and a unified Organization.	Key cost and performance information are already in Umoja, which is now fully functional (as compared with 2012, when this recommendation was made). Closure requested.	The Administration has made considerable progress in the implementation of global enterprise resource planning (Umoja). The Administration has also adopted an ICT strategy by defining the Organization's overall objectives and specifying realistic ambitions for global service delivery, consistent processes and a unified Organization. The Administration has implemented this strategy for five years and made significant achievements. The lessons learned too would be used for a further strategy adopted, if any. The recommendation is considered to be implemented.	X			
4	A/67/651 , para. 41	The Administration should recognize the changes in responsibilities and operating model across the Secretariat that are needed to deliver any new ICT strategy and accept the responsibility of senior management as a whole to deliver Organization-wide changes to support the Chief Information Technology Officer.	No longer applicable and has also been addressed: the ICT strategy was endorsed by the General Assembly in 2015 and in the reform of 2019 (see A/72/492). See also the compacts ("Senior Leadership Compacts_v2") and resolution of senior management engagement Closure requested.	The Administration has started to use the senior leadership compacts to provide support from senior management as a whole to the Chief Information Technology Officer for the delivery of Organization-wide changes to the ICT strategy. The recommendation is considered to be implemented.	X			
5	A/67/651 , para. 68	The Administration should develop a fit-for-purpose governance framework to oversee the strategic development of ICT across the United Nations. This governance framework should	The Office of Information and Communications Technology provided the terms of reference of the Information and Communications Technology Steering Committee and other	The shortcomings in the new governance framework have been noted and included in the current audit report. The delegation of authority has not been issued. Therefore, the		X		

No.	Report reference	Recommendation of the Board	Administration's response	Board's assessment	Fully implemented	Under implementation	Not implemented	Overtaken by events
		clearly set out roles, accountabilities and responsibilities and ensure that decision-making bodies operate distinctly from consultative and advisory forums.	governance bodies. Closure requested.	recommendation is considered to be under implementation.				
6	A/67/651, para. 101	The Administration agreed with the detailed recommendation on ICT security set out by the Board in its memorandum to the Chair of the Advisory Committee on Administrative and Budgetary Questions on this matter.	<p>(a) The 10-point action plan was developed and has been implemented to address the most urgent shortcomings</p> <p>(b) An information security policy directive and many specific technical procedures, have been developed, promulgated and published</p> <p>(c) A self-assessment mechanism has been implemented to document compliance</p> <p>(d) The seriousness of security problems for the Organization has been communicated at all levels of the Organization, as demonstrated by the fact that the fact that the 10-point action plan had been submitted to the General Assembly for approval and was announced globally by the (then) Under-Secretary-General for Management</p> <p>(e) The issue of cybersecurity is being discussed at all levels of the organization, including the Senior Management Group, the Executive Committee and the Management Committee</p> <p>(f) Recognizing the continued need to increase compliance, and to respond to</p>	On the basis of the Administration's response, the recommendation is considered to be implemented.	X			

No.	Report reference	Recommendation of the Board	Administration's response	Board's assessment	Fully implemented	Under implementation	Not implemented	Overtaken by events
7	A/70/581, summary, recommendation (a)	The Administration should clarify the role and authority of the Chief Information Technology Officer in field operations by setting out clearly which activities require strong central control and which activities require or merit operational freedom.	<p>ever increasing cyber-risk exposure, the Management Committee endorsed a new cybersecurity action plan in December 2019.</p> <p>This recommendation was only partially accepted (see A/72/492 regarding roles). There is no "Chief Information Technology Officer role for the field", there is just a "Chief Information Technology Officer role". The Office of Information and Communications Technology would like to request the Board to consider this as overtaken by events, as a result of the reform.</p>	<p>In his report on shifting the management paradigm in the United Nations: implementing a new management architecture for improved effectiveness and strengthened accountability, (A/72/492/Add.2), the Secretary-General stated that, based on the recommendations of the Board (see A/67/651) and on the information and communications technology (ICT) strategy (A/69/517), efforts had been under way to ensure an appropriate balance of operational freedom and central control. In view of its central role, the Secretary-General proposed to establish ICT as a unified pillar led by the Assistant Secretary-General, Chief Information Technology Officer. In the same report (A/72/492/Add.2), the Secretary-General also stated that a unified approach would ensure the successful implementation of the global ICT strategy. A coherent service delivery model, comprising three interlinked layers (at the global, regional and local levels) was proposed for the single ICT pillar. Therefore, the recommendation is considered to be under implementation.</p>		X		

<i>No.</i>	<i>Report reference</i>	<i>Recommendation of the Board</i>	<i>Administration's response</i>	<i>Board's assessment</i>	<i>Fully implemented</i>	<i>Under implementation</i>	<i>Not implemented</i>	<i>Overtaken by events</i>
8	A/70/581 , summary, recommendation (b)	The Administration should reassess the realism of the timetable for implementing the strategy and strengthen the project management approach, including the introduction of independent assurance arrangements.	The current ICT Strategy ends on 10 February 2020. The Office of Information and Communications Technology cannot submit a strategy to the General Assembly without being requested to. The Office will know whether there will be a new strategy when the General Assembly issues a new resolution. In its fourth progress report, the Advisory Committee on Administrative and Budgetary Questions has requested a new ICT strategy for the next five years. The Office would like to request the Board to consider this as overtaken by events.	The Administration did not reassess the timetable for implementing the strategy and strengthen the project management approach, including the introduction of independent assurance arrangements during the implementation phase of the strategy. However, as the time for implementation of strategy has ended, nothing could be done with regard to the projects being implemented as part of the strategy. The Board hopes that these aspects would be taken care of during the future ICT strategy projects adopted, if any. As far as this recommendation is concerned it has been overtaken by events.				X
9	A/70/581 , summary, recommendation (c)	As a matter of urgency, formalize corporate ICT policies and procedures, including governance structures and appropriate delegations of authority, to ensure that the necessary authorities and accountabilities are in place to support implementation of the ICT strategy.	Delegation of authority (currently with the Department of Management Strategy, Policy and Compliance). A policy update and new ICT governance documents, which include a 2019 policy update and governance terms of reference, were provided.	The delegation of authority has not yet been issued. Therefore, the recommendation is considered to be under implementation.			X	
10	A/70/581 , summary, recommendation (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.	Policy compliance as well as compliance with goals related to the implementation of the ICT strategy are undertaken through the new governance bodies established further to the management reforms. In the area of information security, a self-assessment	The Board noted that there are 14 policies on information security in place; however, there is no dedicated compliance monitoring function in the Office. Non-monitoring of existing policies increases the risk to confidentiality, integrity and			X	

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11	A/70/581, summary, recommendation (f)	The Administration should develop a statement of the expected costs and benefits of implementing the revised ICT strategy to enable strategic activities to be prioritized and resourced appropriately.	compliance function has been established. Terms of reference and the Information and Communications Technology Steering Committee meeting minutes could be referred to. Closure requested.	availability of data, given the Department's adoption of cloud-based platforms and services and intention to adopt artificial intelligence-based systems within the United Nations. Therefore, the recommendation is considered to be under implementation.				X
12	A/70/581, summary, recommendation (g)	The Administration should increase the visibility of senior management in leading the implementation of the ICT strategy to ensure that all departments are committed to implementing the revised ICT strategy as mandated by the General Assembly, and that any disagreements or	Management Committee meetings included ICT security issues in their agendas. Closure requested.	The statement provided by the Office mentions the project costs, budget and expenses. However, the document lacked details on the benefits of the projects. The emphasis of the recommendation was on using the costs and benefits for enabling the prioritization of strategic activities. It was noted that the Office had developed a statement of benefits only for a project on application rationalization, which was also in its end-of-project report. Thus, the Office did not conduct such analysis for the projects during implementation of strategy. The implementation of the strategy has however come to an end and thus the recommendation has now been overtaken by events.		X		

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13	A/72/151 , para. 21	<p>impediments to implementing the strategy are assessed and resolved in a timely manner.</p> <p>The Administration should ensure that: (a) bodies under the ICT governance framework engage proactively in monitoring progress, resolving interdepartmental issues to ensure the implementation of the strategy in compliance with General Assembly resolution 69/262; (b) the performance measures in the senior managers' compact with regard to the strategy are made more objective and quantifiable; (c) immediate steps are taken to issue the necessary delegation and designation policies; and (d) departments submit road maps and take the steps necessary for aligning their business plans with the strategy.</p>	<p>With regard to part (a), the Administration has a new governance structure further to management reforms. The terms of reference and the Information and Communications Technology Steering Committee meeting minutes were provided.</p> <p>For part (b), the revised compact indicators were provided.</p> <p>Concerning part (c), the delegation of authority and accountability framework in the area of ICT was provided as part of the overall delegation of authority framework prepared by the Department of Management Strategy, Policy and Compliance. The delegation of authority priority matrix</p>	<p>place and by using ICT resources to best effect. The issue mentioned in response is an isolated incidence of Senior Management's involvement. However, the Board noted that the current Information and Communications Technology Steering Committee, which replaced the ICT Executive Committee and the ICT Board, does not have representative and adequate participation of clients' departments and offices. The issue being relevant irrespective of the conclusion of the period of implementation of the ICT strategy, the Board considers that the recommendation is under implementation.</p> <p>The ICT governance framework would continue. The newly formed ICT governance body, i.e., the Information and Communications Technology Steering Committee, as a replacement for the earlier ICT Executive Committee and ICT Board, does not have fair representation from other departments or offices (business owners/serviced entities) to ensure the alignment of ICT activities with organizational priorities/goals. In the absence of such representation, proactive engagement to resolve interdepartmental issues cannot be continued. Delegation of authority is yet to be formalized. The road map was not provided by the</p>		X		

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14	A/72/151 , para. 33	The Chief Information Technology Officer and the Office of Information and Communications Technology, as the central authority for implementation of the strategy and its monitoring, should not only track the project timelines closely but also monitor the cost of each of the strategic projects to ensure transparency and accountability in substantial investments.	<p>designed by the Department was provided. This work is now with the Department.</p> <p>Concerning part (d), the ICT road map was developed by the Department of Global Communications in 2020 and OICT will have a workshop with Department of Peace Operations to develop a road map.</p> <p>Closure requested for (a), (b) and (c).</p> <p>The five-year ICT strategy was completed in December 2019, and the remaining ICT strategy projects reported in A/73/384 were formally closed, except for global sourcing. In addition, A/74/353 provides details of the completion and end-state of the ICT strategy. The change requests that closed the projects were provided.</p>	<p>Administration to the Board. However, as the implementation period for the strategy is finished there is no question of aligning business plans with the ICT strategy. The recommendation is therefore considered to be under implementation for the purpose of parts (a) and (c), while part (b) is considered as under implementation and part (d) as overtaken by events.</p> <p>The Office closed six of the seven incomplete strategic projects in 2019. The shortcomings in tracking the projects have been reported in previous progress reports and the current progress report of the Board regarding the closure of the projects. However, as the implementation of the ICT strategy comes to an end, this recommendation is considered to be overtaken by events.</p>				X
15	A/72/151 , para. 40	The Office of Information and Communications Technology should complete the task of formulating and promulgating ICT policies in a time-bound manner and establish the proposed self-regulatory compliance function.	In 2019, 10 technical procedures were revised, one new guideline was created and the Secretary-General's bulletin was reviewed. Eight additional technical procedures are under review and three technical procedures and five policy documents are due for revision. One new policy will be created on data privacy. Pursuant to the Secretary-General's data strategy, approved on 16 April 2020, an organization-wide data protection and privacy	There was an absence of policy on data privacy and outdated policy such as that on information classification and handling, which carries a risk to the confidentiality and integrity of data, and these need special consideration in view of the use of the public cloud for the functioning of the Office of Information and Communications Technology. In accordance with the Secretary-General's data strategy, the Office must work on one of the next short-term, high-priority		X		

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			framework will be put in place, guided by the principles on personal data protection and privacy. It is envisaged that this will include an implementing Secretary-General's bulletin and policies at the departmental and unit levels.	steps, which include mapping and assessment of gaps in regulations, rules and policies, as well as oversight mechanisms and processes, and updating them. The Board has also concluded in previous reports and the present report that compliance with policies has not been properly monitored. The issue of policy compliance is ongoing; therefore, the recommendation is considered to be under implementation.				
16	A/72/151 , para. 45	The Administration should ensure that sufficient funds are earmarked for implementing the training plan.	The recommendation as written has been addressed. The Office of Information and Communications Technology has requested funds; however, the Board is now requesting to conduct the training, which is different from the original request in the recommendation. A full training strategy document has been defined. There is increased training despite limited funds. Training is focused on strategic areas. Closure requested.	The Office has been of the view that it had requested the requisite funds and it has not been in a position to ensure sufficient funds. The Board understands the resource constraints and considers this recommendation to be implemented.	X			
17	A/72/151 , para. 50	The formulation and implementation of the ICT performance management framework should be expedited.	Work on the performance management framework is on hold owing to a lack of resources.	The Administration had stated that a scorecard methodology would be developed to measure the performance of ICT units covering all ICT functions and that the methodology would rely on key metrics and self-reporting. The Office has now stated that it was on hold owing to lack of resources. The issue being of ongoing significance even after the end of the ICT strategy period, this recommendation is considered to be under implementation.		X		

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18	A/72/151, para. 55	The Administration should ensure that all personnel complete the mandatory information security training.	The Office of Information and Communications Technology considers this recommendation to be implemented. On 18 December 2019, the Management Committee endorsed a new cybersecurity action plan, which mandates all departments and offices to ensure compliance with this requirement for their staff. The Office will report on implementation to the Management Committee, which is chaired by the Chef de Cabinet. Implementation guidance for departments and offices is currently being prepared. The cybersecurity action plan and Management Committee minutes were provided. Closure requested.	The Office of Information and Communications Technology has not made any improvement over the situation in previous years regarding the proportion of staff undergoing this mandatory training. Under the cybersecurity action plan, all staff were to complete the mandatory training by the first quarter of 2020. Therefore, the recommendation is considered to be under implementation.		X		
19	A/72/151, para. 60	The Office of Information and Communications Technology should create a mechanism for departments and offices to provide periodic updates on the implementation of the strategic project on information security.	The Office of Information and Communications Technology considers this recommendation to be implemented. The annual self-assessments have been included in the new cybersecurity action plan endorsed by the Management Committee. Implementation guidance for departments and offices is currently being prepared. The cybersecurity action plan was provided. Closure requested.	The new cybersecurity action plan makes it necessary for the departments and offices that create and operate websites and/or applications to conduct self-assessment of websites and applications with respect to key information security policies and minimum-security requirements by the first quarter of 2020. Considering that the issue would be monitored by the Management Committee, this recommendation is considered to be implemented.	X			

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20	A/72/151 , para. 67	The criteria for determining the criticality of applications should be reviewed and the number of critical applications should be ascertained on the basis of an analysis; and the number of critical applications should be progressively reduced by replacing them with new systems and enterprise-level applications through consolidation and rationalization.	The Office of Information and Communications Technology considers this recommendation to be implemented. The Senior Emergency Policy Team list of critical applications, "UNHQ critical applications" was provided; The determination of criticality is outside the mandate of the Office; it is with the Senior Emergency Policy Team. The Team is the body that establishes United Nations critical applications. Closure requested.	Criticality of an application continues to be assessed according to the criteria developed by the Senior Emergency Policy Team in July 2015. The number of critical applications remained at 24, as assessed in 2015. The Board had observed that 17 mission-critical applications relating to the Department of Field Support had not been considered as critical and therefore had not been included in the final list of 24 critical applications requiring disaster recovery plans. The Administration was unable to take forward the exercise of identifying critical applications beyond what it had done in November 2015. The Board is of the view that there is a need for review, as considerable time has passed and there would have been changes in applications and their criticality. It is suggested that the Office of Information and Communications Technology take up the matter with the Senior Emergency Policy Team for updating of the critical applications list. The recommendation is considered to be under implementation.		X		
21	A/72/151 , para. 77	Progress in website rationalization and harmonization and application rationalization and consolidation should be expedited to mitigate security risks, reduce costs and optimize application value.	This recommendation is requested to be closed with the issuance of the upcoming administrative instruction on United Nations website publishing. The associated web harmonization project has been closed (the Enterprise Project	The administrative instruction was in draft stage for over a year and has not been formally issued to date; directives issued by the Management were not in written form; existing and new websites were not compliant with the		X		

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			<p>Management Office is to provide closure documentation). Unite Web has been delivered as the enterprise web content management solution to support compliance and governance. Website governance is shared between the Department of Global Communications and the Office of Information and Communications Technology. All websites built on Unite Web are compliant across the areas of technology, security, branding, multilingualism and accessibility for the disabled. An administrative instruction is being released by the Department of Management Policy, Strategy and Compliance which details the governance and compliance for all Secretariat public websites. Prior to the administrative instruction all department heads were directed through the Management Committee as to these compliance requirements, regardless of their hosting arrangements. They have also been advised by the Office of their obligation to record public websites in Unite Apps, including their compliance. Ongoing compliance is an operational matter that continues beyond the scope of the project which established Unite Web and the governance structure/process. Closure requested.</p>	<p>five key areas as mentioned in the current report. As non-compliance poses security risks and the rationalization of websites and applications has to be continued, the recommendation is considered to be under implementation.</p>				

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22	A/72/151 , para. 86	The Administration should devise a first-level resolution rate measure by classifying the requests for services that could potentially be resolved at the first level.	It is important to note that an accurate response requires that all "substantial tickets" are excluded from the first level, as they are outside the scope of Unite Service Desk user support activities. This step has been taken by and falls under the responsibility of the global service delivery model team with the creation of the global shared catalogue of administrative services.	The performance benchmarks for the service desks were not yet formalized. The global service catalogue was also in the process of consolidation and the consolidation of the catalogue of services under the Unite Service Desk at Brindisi is expected by the third quarter of 2020. Therefore, the recommendation is considered to be under implementation.		X		
23	A/72/151 , para. 105	The relevant policies should be suitably revised to ensure that ICT procurements above a prescribed threshold are processed through Umoja and vetted centrally by the Office of Information and Communications Technology to ensure uniformity, standardization, compliance with ICT policies and benchmarking of costs.	The job opening for the Associate Contracts Management Officer position was re-advertised in the third quarter of 2019 and the recruitment process is in the final phase. In the meantime, the Office continues to partner with the Procurement Division and the Office of Supply Chain Management in translating strategic and operational ICT requirements into global plans and reduce or eliminate duplication of efforts in the solicitation process.	No concept note or business case was prepared for global sourcing projects and the Office of Information and Communications Technology did not have any quantifiable data of the benefits to be accrued from global sourcing. No such revision of policy on ICT procurements, as recommended, was done. Therefore, the recommendation is considered to be under implementation.		X		
24	A/72/151 , para. 106	A clear road map should be developed to realize cost optimization benefits through global sourcing.	The award of the contract for fully managed and task order services is still pending finalization and is now expected to be completed before the end of 2019. The case for software development application services is in its final phase of the solicitation process and the contract is also expected to be awarded before the end of 2019.	The time period for ICT strategy implementation has reached its end stage and award of contracts for application services, ICT services and Amazon Web Services (cloud-based services) were still not completed by February 2020. The Office did not have any quantifiable data of the benefits to be accrued from Global sourcing. Therefore, the recommendation is considered to be under implementation.		X		

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25	A/72/151, para. 112	The Administration should take effective steps to ensure the implementation of the enterprise delivery framework and reduce the fragmentation of ICT resources.	Under implementation.	<p>The award of contracts for cloud services is also expected to be awarded before the end of 2019.</p> <p>Application deployment through enterprise application centres has not been implemented; however, applications and websites are also developed outside of enterprise application centres.</p> <p>Consolidation of the Information and Communications Technology Division /tier-I activities is still continuing and planned until the end of 2021; the local catalogue of Brindisi has not been migrated as yet for several SharePoint applications and legacy applications.</p> <p>Of 70 ICT units, only four have been consolidated and one unit (under the Department for General Assembly and Conference Management) has been partially consolidated. The enterprise application centre in Vienna is not part of the Enterprise Solutions Service established under the Office of Information and Communications Technology. Therefore, the recommendation is considered to be under implementation.</p>		X		

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26	A/73/160 , para. 25	Appropriate processes and practices of the governance framework should be followed so that the business goals of the Organization are met through the implementation of the ICT strategy.	A new governance framework was developed post-reform "Final ICT governance agreed Friday 24 May". The Information and Communications Technology Steering Committee terms of reference and minutes were provided. Closure requested.	The post-reform ICT Governance body, i.e., the Information and Communications Technology Steering Committee (formed as a replacement for the earlier ICT Executive Committee and ICT Board), do not have representation from other departments/offices to ensure alignment of ICT activities with organizational priorities and goals and to improve transparency even after revision in governance framework. Therefore, the recommendation is considered to be under implementation.		X		
27	A/73/160 , para. 26	The Administration should establish a performance management framework with suitable metrics and benchmarks that help align the ICT initiatives with the strategic goal of the United Nations within an established time frame.	Performance Management Framework work is on hold due to lack of resources.	The Administration had stated that a scorecard methodology would be developed to measure the performance of ICT units covering all ICT functions and that the methodology would rely on key metrics and self-reporting. The Office has now stated that it was on hold due to lack of resources. The issue being of ongoing significance even after the end of the ICT strategy period, this recommendation is considered to be under implementation.		X		
28	A/73/160 , para. 41	The Administration should proactively engage with user departments to identify policy gaps in emerging areas and draw up action plans to frame such policies.	The Administration's engagement with user departments is shown in the minutes of the ICT Policy Committee meetings provided to the Board. The ICT Policy Committee terms of reference show that offices and	As evident from the minutes of the ICT Policy Committee meetings, policy gaps in emerging areas have yet to be fully addressed. Therefore, the recommendation is considered to be under implementation.		X		

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			departments are included as members in the ICT Policy Committee. Closure requested.					
29	A/73/160, para. 50	The Office of Information and Communications Technology should make efforts to ensure that appropriate certifications needed for the performance of ICT functions are obtained and recorded appropriately.	The Office of Information and Communications Technology can track certifications obtained by staff performing ICT functions. An Excel document that tracks the certifications "OICT_SM_Certifications" was provided. Closure requested.	On the basis of the response from the Administration, the recommendation has been considered to be implemented.	X			
30	A/73/160, para. 55	The Administration should take appropriate measures to mitigate risks related to the project components under Umoja mainstreaming and ensure that the Office of Information and Communications Technology, in conjunction with the Umoja project office, ensures knowledge transfer to facilitate Umoja mainstreaming as and when it happens.	Under implementation.	Since the process is still ongoing, the recommendation is considered to be under implementation.		X		
31	A/73/160, para. 79	(a) The Office of Information and Communications Technology should continue to work with the Department of Field Support, offices away from Headquarters and regional commissions to improve the visibility of ICT assets; (b) A cost-benefit analysis should be conducted in order to decide on extension of the scope of intrusion detection services to include all critical	Part (a) of this recommendation has been implemented. In addition to System Centre Configuration Manager, which is deployed to Windows systems, the Office of Information and Communications Technology through the Global Service Centre, uses HP uCMDB, which provides more complete coverage of ICT assets (e.g., Windows and Linux systems, physical and virtual servers, enclosures, blades and ESX servers). These include the	The work on the visibility of assets and the replacement of outdated assets is still in progress, and network segmentation is not yet completed. Under the Secretary-General's data strategy, the Office must work on one of its next short-term, high-priority steps, which include the mapping and assessment of gaps in regulations, rules and policies, as well as oversight mechanisms and processes and updating them. Therefore, this		X		

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		<p>ICT resources across the Secretariat;</p> <p>(c) Priority should be accorded to the completion of network segmentation as originally planned; and</p> <p>(d) Efforts should be made to finalize the data privacy policy for the United Nations at the earliest.</p>	<p>Office's applications hosted at the Global Service Centre. A screenshot of HP uCMDB showing the Office's applications was provided as evidence of implementation of this recommendation.</p> <p>With regard to part (b), the current contract for managed intrusion detection services will need to be rebid in 2020. The additional requirements for locations that are currently not in scope will be included in the requests for proposals, and a final determination be made on the basis of actual costs according to responses to the requests for proposals.</p> <p>Concerning part (c), full network segmentation implementation requires additional resources – capital expenditures for purchasing additional network equipment and professional services to implement new network design. Unfortunately, the Administration was unable to allocate resources to perform this activity fully. At Headquarters in New York, the Office of Information and Communications Technology performed partial network segmentation at the data centre level. The user network was not segmented owing to lack of resources. The Office is currently analysing software-based user segmentation built on the end-point protection tool used in the Secretariat.</p>	<p>recommendation is considered to be under implementation.</p>				

No.	Report reference	Recommendation of the Board	Administration's response	Board's assessment	Fully implemented	Under implementation	Not implemented	Overtaken by events
32	A/73/160, para. 101	The Administration should identify the number of core applications that are required to be maintained and work towards rationalizing applications by identifying overlapping applications within the same area.	<p>As regards part (d), pursuant to the Secretary-General's data strategy, approved on 16 April 2020, an Organization-wide data protection and privacy framework will be put in place, guided by the principles on personal data protection and privacy. It is envisaged that this will include an implementing Secretary-General's bulletin and policies at the departmental and unit levels.</p> <p>The Office of Information and Communications Technology considers this to be implemented. The target under the ICT strategy has been achieved (see project closure document from the Enterprise Project Management Office) and the ongoing activity is mainstreamed into the Office's operations.</p> <p>The Office has been engaged in identifying applications, including those that serve similar purposes. The avoidance of building or buying duplicative applications is part of the normal ongoing operations of the Enterprise Solutions Service. Prior to engaging in application purchase or build Enterprise Solutions Service checks if pre-existing platforms can be used and also refers to Unite Apps during this process. The Administration also routinely reaches out to counterparts in the United Nations system to discuss solution strategies. Departmental IT focal points</p>	<p>The Board has seen multiple applications and an absence of clear road maps to identify redundancies and bring down the number of applications. However, similar recommendations with more details (namely, amendment to the technical procedure document, etc.) have also been included in the current audit. The Board considers this recommendation to be under implementation.</p>		X		

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33	A/73/160, para. 108	Clear milestones should be set to avoid the deferral of timelines and to effectively monitor projects.	and Office business relationship managers also follow this process and consult the Enterprise Solutions Service when applications are requested. It is expected that this effort will continue until the conclusion of the ICT strategy and beyond, as part of the Office's normal operations, despite the fact that the target reductions have been achieved. In addition, the Office conducts a yearly software asset inventory exercise whereby departmental focal points are requested to review and update the information on applications belonging to their departments. Closure requested.	The project had been prematurely closed by the Office in 2019 and was also discussed by the Board in the 2019 report A/74/177. Since the project level milestones and timelines are not applicable, the recommendation is considered to be overtaken by events.				X
34	A/73/160, para. 118	The Administration should develop a long-term augmentation plan, considering asset life and technological change, and indicate the requirements in budget requests in a timely manner.	As stated previously, the report to the General Assembly at its seventy-fourth session will contain a proposal to strengthen capital maintenance in 2020 (postponed from 2019) to cover critical requirements in all duty stations to replace outdated equipment and systems in the areas of conference management, multimedia,	A process is under way. Therefore, the recommendation is considered to be under implementation.		X		

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35	A/73/160, para. 126	The Administration should identify and document global sourcing opportunities along with an estimation of savings.	broadcasting, audiovisual communications and cybersecurity, and as an integral part of a capital investment plan for the period 2021–2025, on the basis of input from all entities, for the replacement of outdated equipment and systems, the concomitant enhancement of capabilities to meet current requirements, compliance with industry standards and the services required to maintain and successfully operate those systems. The Office of Information and Communications Technology will continue to consult with the Office of Programme Planning, Finance and Budget on the draft report.	The Board was informed in the current audit that a business case has not been prepared for two projects. Transition plans have also not been prepared and requests for proposals for ICT services contracts have not been cancelled. Therefore, the recommendation is considered to be under implementation.		X		
36	A/73/160, para. 127	Pending contracts should be finalized with the established timelines to enable optimal utilization of resources.	The award of the provision of software development and applications services is at the contract negotiations stage with the vendors, and the Procurement Division anticipates that the contracts will be awarded during the second quarter of 2020. Following a review by the Headquarters Committee on	In view of the response of the Administration, the recommendation is considered to be under implementation.		X		

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37	A/73/160, para. 140	The Administration should draw up a plan for the time-bound replacement of videoconferencing equipment to ensure the resilience of videoconferencing services.	<p>Contracts, it was recommended that the proposed awards to the vendors for fully managed services and integrated ICT and task order services be rejected, the seven-year requirement be reviewed and updated and a new solicitation be issued, based on lessons learned from the original solicitation. The current contracts with vendors for the ICT services were approved to be further extended for a period of 1+1 years until 31 December 2021 in order to provide operational coverage for the duration of the rebidding exercise. The Office of Information and Communications Technology is revisiting the scope of work and the new solicitation will be issued once the scope of work is finalized and communicated to the Procurement Division, tentatively during the second quarter of 2020.</p> <p>The videoconferencing platform is comprised of three components: endpoints, infrastructure and bridging system.</p> <p>Endpoints, and their peripherals reaching end of life will be replaced or decommissioned in a gradual progression, owing to budgetary constraints and effective use of the available resources. For those endpoints, business owners in specific duty stations are proposing the</p>	According to the response provided, the recommendation is still under implementation, as the Unified Bridge Management System (VCCM) was being upgraded and the decommissioning of hardware peripherals was delayed owing to budget constraints. Since the compliance process is still in progress, the recommendation is considered to be under implementation.		X		

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			<p>funding under the most appropriate budget between section 29, Management and support services, section 33, Construction, alteration, improvement and major maintenance, the Strengthening Capital Maintenance initiative, the Capital Investment Plan or taking the approach of using the videoconferencing equipment while it is functional and phasing out to the other collaboration tools, such as Microsoft Teams, where feasible. Further to any outage or breakdown of such end-of-life equipment, it will be phased out and decommissioned in line with the relevant IPSAS procedure.</p> <p>The core infrastructure has been standardized and moved to the United Nations private cloud, through the global videoconferencing infrastructure harmonization project and all hardware-based videoconferencing services have been decommissioned.</p> <p>The new One United Nations bridge has been deployed. Pending the upgrade of the Unified Bridge Management System (VCCM) to version 3, certain standalone bridges and related components will be decommissioned and remaining video conference services will be moved to the Global One United Nations Bridge hosted exclusively over the United Nations private</p>					

No.	Report reference	Recommendation of the Board	Administration's response	Board's assessment	Fully implemented	Under implementation	Not implemented	Overtaken by events
38	A/74/177 , para. 14	The Administration should ensure that the governance framework for the implementation of the ICT strategy be made operational and a new governance framework, if envisaged, be put in place immediately to strengthen the governance mechanism.	cloud. Some functioning systems will still be utilized for spare capacity and backward compatibility and will be in service while equipment is functional. Once the outdated equipment and systems show signs of degradation in functionality, cybersecurity and/or reliability, they will be phased out and decommissioned in accordance with the IPSAS stated procedure. A new governance framework was developed post-reform "Final ICT governance agreed Friday 24 May". The Information and Communications Technology Steering Committee terms of reference and minutes were provided. Closure requested.	The Board noted that the ICT Executive Committee has been replaced by the Information and Communications Technology Steering Committee. The Administration has put in place the new governance structure, thus avoiding a possible void. The recommendation for operationalization of the then governance framework is redundant as the framework has been replaced. The shortcomings of the new governance framework have been identified and discussed in the current report with a separate recommendation. This recommendation is therefore considered to be overtaken by events.				X
39	A/74/177 , para. 20	The Office of Information and Communications Technology should develop an appropriate compliance model including a self-assessment mechanism for all policies, where feasible, and coordinate with stakeholders to ensure better compliance.	Under implementation.	There is no dedicated compliance monitoring function in the Office of Information and Communications Technology. The recommendation is considered to be under implementation.		X		

No.	Report reference	Recommendation of the Board	Administration's response	Board's assessment	Fully implemented	Under implementation	Not implemented	Overtaken by events
40	A/74/177 , para. 30	The Administration should conduct a comprehensive assessment of the achievements under all projects including projects designated as completed and mainstreamed, vis-à-vis the targets and objectives of the ICT strategy.	The five-year ICT strategy was completed in December 2019 (exact end date, five years from the General Assembly endorsement, 10 February 2020), and the remaining ICT strategy projects reported in A/73/384 were formally closed (the change requests were provided). In addition, A/74/353 provides details of the completion and end-state of the ICT strategy. Closure requested.	Of the seven projects reported to be ongoing in the fourth progress report of the Secretary-General (A/73/384), six were closed though change requests approved by the Chief Information Technology Officer. An end-of-project report was prepared only for the application rationalization project; however, it was closed through a change request. For the closure of the other five projects, the adopted methodology, of the project manager reviewing the project and submitting the end of project report to the project board, was not followed. The Administration agreed to carry out a post-project review of the five projects concerned. Therefore, the recommendation is considered to be under implementation.		X		
41	A/74/177 , para. 36	The Administration should prioritize the preparation and putting in motion of the Umoja mainstreaming plan.	Under implementation.	Considering the response from the Administration, the recommendations is considered to be under implementation.		X		
42	A/74/177 , para. 53	The Office of Information and Communications Technology should focus its efforts on network segmentation and continue to enhance the information security programme by focusing on workstation configuration, training and asset classification.	Network segmentation has been included as a specific action item in the new cybersecurity action plan; and a project has been initiated to migrate the management of workstations to Microsoft Azure, which will include secure configuration management for all managed workstations.	Since the process is still ongoing, the recommendation is considered to be under implementation.		X		

No.	Report reference	Recommendation of the Board	Administration's response	Board's assessment	Fully implemented	Under implementation	Not implemented	Overtaken by events
43	A/74/177 , para. 58	The Office of Information and Communications Technology should maintain a complete record of specific information about the modus and extent of cyberattacks and take appropriate steps to combat these vulnerabilities.	The specifics of cybersecurity incidents are tracked in iNeed and analysed to improve prevention and detection. Closure requested.	The Board noted the Administration's response. It is also noted that the number of files that were accessed in the course of a cyberattack was not known as the forensic evidence was incomplete. The emphasis of the recommendation is on the maintenance of a complete record of specific information about the modus operandi and extent of cyberattacks. Therefore, the recommendation is considered to be under implementation.		X		
44	A/74/177 , para. 68	The Administration should review and define the current set of "critical" applications, conduct regular disaster recovery exercises for all applications identified as critical and ensure prompt corrective action for shortcomings noted in the disaster recovery exercise.	See also response to A/72/151 , para. 67. This is not within the mandate of the Office of Information and Communications Technology. The Senior Emergency Policy Team list of critical applications "UNHQ Critical applications" was provided; The determination of criticality is outside the mandate of the Office, it is with the Senior Emergency Policy Team. Closure requested.	This recommendation concerns not only the identification of critical applications by the Senior Emergency Policy Team but also the conduct of regular disaster recovery exercises on all applications identified as critical and prompt corrective action for the shortcomings noted in the disaster recovery exercise. Since the process is still ongoing, the recommendation is considered to be under implementation.		X		
45	A/74/177 , para. 76	The Office of Information and Communications Technology should carry out annual verification of all application assets, clearly define the categories of applications that are to be consolidated or retired and address the shortcomings in the data recorded in Unite Applications.	The Office of Information and Communications Technology already undertakes a yearly verification of application assets as part of its existing operations, last performed in January 2019. During this exercise, departmental IT focal points and the Office's application owners update Unite Apps, as the portfolio management platform for this purpose. Closure requested.	The shortcomings in data recorded in Unite Apps have persisted. The Office must liaise with departmental heads to develop a process whereby all technical owners update the details in Unite Apps. In its most recent report on the audit of processes for the development and acquisition of software applications at the United Nations Secretariat, the Office of Internal Oversight Services (OIOS) stated, inter		X		

No.	Report reference	Recommendation of the Board	Administration's response	Board's assessment	Fully implemented	Under implementation	Not implemented	Overtaken by events
46	A/74/177 , para. 85	The Office of Information and Communications Technology, in coordination with other stakeholders, should review the existing governance and compliance processes regarding websites, identify the gaps and ensure compliance with the existing guidelines and standards.	<p>This recommendation is requested to be closed with the issuance of the administrative instruction mentioned below. All public information websites must be compliant in the areas of technology, security, branding, multilingualism and accessibility for the disabled. All department heads have been advised of their public website compliance obligations through the directives of the Management Committee. They have also been advised that Unite Web is the enterprise web content management platform and that they are required to register their websites in Unite Apps.</p> <p>If a department or entity approaches the Office of Information and Communications Technology to launch a public website, the Office works closely with the Department of Global Communications to ensure public website compliance. All requests for public websites require a DGC.8 form which is reviewed and approved by the Department before a Unite</p>	<p>alia, that the development costs field was blank for 1,135 items and the disaster recovery data was blank for 1,456 items, thereby defeating the very purpose of the Unite Apps database (OIOS report no. 2020/003 (12 February 2020), paras. 33 and 34). The recommendation is considered to be under implementation.</p> <p>The assertion that an administrative instruction was issued is not factually correct as it has been in draft stage for over a year and has not been formally issued to date; directives issued by the Management Committee were not in written form; existing and new websites were not compliant with the five key areas prescribed. The recommendation is considered to be under implementation.</p>		X		

No.	Report reference	Recommendation of the Board	Administration's response	Board's assessment	Fully implemented	Under implementation	Not implemented	Overtaken by events
			<p>Web development site is provisioned by the Office for content population. Website requesters need to confirm to the Department that the site will be multilingual or obtain a waiver from the Department, which is issued only on the basis of a substantive rationale. Once content is populated, all websites are referred by the Office back to the Department of Global Communications for branding and accessibility clearance and confirmation prior to launch.</p> <p>The Department of Global Communications has a number of legacy public websites that it continues to manage. The Department has initiated a project to consolidate their legacy websites on a common ICT standard platform, Drupal. The Office of Information and Communications Technology is supporting this effort by providing compliance-related advice in the areas of architecture and security, as well as operational support. The Office is also adopting the new Department UN2 branding standard for Unite Web websites.</p> <p>Recently, the Office, the Department of Global Communications, the Department of Management Strategy, Policy and Compliance, and the Department for General Assembly and Conference</p>					

No.	Report reference	Recommendation of the Board	Administration's response	Board's assessment	Fully implemented	Under implementation	Not implemented	Overtaken by events
47	A/74/177 , para. 90	The Office of Information and Communications Technology should take measures, including arranging for appropriate funding, in coordination with other stakeholders, to ensure that the Enterprise Network Operations Centre project achieves the envisaged objectives of consolidation.	<p>Management co-authored an administrative instruction on United Nations website publishing (including compliance requirements), which is expected to be issued in the near future. It reiterates and states as formal published policy the public information website compliance requirements that should be applied to all Secretariat sites regardless of owner or hosting arrangements. In addition, Unite Web is advised as the platform of choice and that alternative hosting arrangements need to be authorized by the Office.</p> <p>The Unite Web Overview guide for additional information (Unite Web Quick Start Guide. PDF was provided).</p> <p>Closure requested.</p>	No resources available to complete this work.	The resource requirements have not been evaluated and the relevant stakeholders have not yet been consulted to determine the resource requirements for the release of resources from regional training centres. This aspect has been further elaborated in the current audit. The recommendation is considered to be under implementation.	X		

No.	Report reference	Recommendation of the Board	Administration's response	Board's assessment	Fully implemented	Under implementation	Not implemented	Overtaken by events
48	A/74/177 , para. 95	The Office of Information and Communications Technology should ensure compliance with the targets set out in the service-level agreement and address issues of service degradation or outages promptly.	<p>This has been implemented. Please find evidence that should be used to close this recommendation:</p> <p>(a) The performance report for 2019 with full analysis against targeted service-level agreements and follow-up actions for improvement.</p> <p>(b) The copy incident management and request fulfillment processes that are followed up to support WAN. Closure requested.</p>	<p>The network performance was examined in the current audit and service-level agreement breaches were noted for 2019 also. The Office of Information and Communications Technology has conducted the performance analysis for 2019 and identified the actions for improvement. In the current audit, this aspect has also been included along with comprehensive recommendation with additional issues such as, inter alia, the alignment of the key performance indicators of both vendors, performance measurement methodology and imposition of a penalty. However, there was no other possible action that could have been taken by the Administration. The recommendation is therefore considered to be overtaken by events.</p>				X
49	A/74/177 , para. 102	The Office of Information and Communications Technology should clarify the scope of the Unite Service Desk consolidation project and take measures to ensure that the envisaged objectives of consolidation and continuous improvements are achieved at the earliest. X	The project should be considered closed. The Office of Information and Communications Technology and Department of Field Support service desks were consolidated from a reporting point of view and the new consolidated entity is currently engaged in standardizing operating model and delivery processes. Closure requested.	The consolidation at tier 1 was still in process throughout 2019. The Office also states in its reply that the new consolidated entity is currently engaged in standardizing operating model and delivery processes. In view of the reply, this recommendation is considered to be under implementation.		X		

No.	Report reference	Recommendation of the Board	Administration's response	Board's assessment	Fully implemented	Under implementation	Not implemented	Overtaken by events	
50	A/74/177 , para. 109	The Administration should proactively engage with the Member States that have expressed interest in establishing United Nations Technology Innovation Labs and respond in a time-bound manner.	Throughout 2019, the Office for Information and Communications Technology has responded without delay to any countries which have formally expressed their interest in the programme through a note verbale sent to the Chief Information Technology Officer. As evidence the replies to the note verbale received from the UAE, Mauritius and Germany were provided; they were addressed within one working week window from their receipt. The Office is committed to continue to engage proactively with Member States that express interest in the United Nations Technology Innovation Labs programme. Closure requested.	The Board noted the Administration's response and considered the recommendation as implemented.	X				
Total					50	7	37	0	6
Percentage					100	14	74	0	12

Annex II

Original strategic road map

Phases I and II cover the strategic information and communications technology (ICT) drivers of modernization, transformation and innovation. ICT business transformation and leadership cover the two major underlying areas of governance and optimal use of ICT resources, which are interlinked with the three strategic ICT drivers.

		2013		2014				2015				2016				2017			
		July-Sept.	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.
Phase I	Modernization																		
	Enterprise solutions																		
	Umoja mainstreaming and International Public Sector Accounting Standards																		
	Network and infrastructure																		
	Information security																		
	Disaster recovery and business continuity																		
	Transformation																		
	Enterprise delivery framework:																		
	Enterprise service desk (help desk)																		
	Enterprise application centres																		
	Regional technology centres																		
	Enterprise network operations, communications and security centre																		
	Global engineering and conferencing																		
Phase II	Innovation																		
	Projects: analytics, collaboration, crisis management solutions, global security and modernization projects																		
ICT business transformation and leadership	Governance and leadership																		
	Governance framework																		
	ICT performance management framework																		
	Architecture and standardization																		
	ICT policies																		
	Optimal use of ICT resources																		
	Global sourcing																		
Defragmentation of organizations and harmonization																			