



Ref AUD-8-6:1 (0068 /05)

3 February 2005

To: Mr. Eduardo Blinder, Director
Information Technologies Services Division, OCSS

From: Patricia Azarias, Director
Internal Audit Division I
Office of Internal Oversight Services

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Subject: **OIOS Audit AH2004/513/05: High-level Post-implementation Review of E-Assets**

1. I am pleased to present herein our final report on the subject audit, which was carried out from March through July 2004 at Headquarters. The report incorporates the Information Technology Services Division's written comments on the draft report, which were received on 2 December 2004. Based on these comments, OIOS will close Recommendations 2 and 3 in its database after a brief follow-up review of their implementation to be requested by ITSD. Recommendations 1, 4 and 5 will be closed following the issuance of the governance instruments mentioned therein.

2. Please note that IAD is assessing the overall quality of its audit process. I therefore kindly request that you consult with your managers who dealt directly with the auditors and complete the attached client satisfaction survey form.

3. I would like to take this opportunity to thank you and your staff for the assistance and cooperation extended to the auditors.

I. BACKGROUND

a. General Background

4. "E-Assets-UNICT Assets Databank" (E-Assets) is an internet-based application, developed by a vendor for the Development of New Technologies Service (DNTS) of the Information Technologies Services Division (ITSD). The purpose of E-Assets is to comprise a repository of information on Information Technologies (IT) systems and applications which operate in the Secretariat. Such information allows all users who have access to the United Nations Intranet service -- iSeek -- to review **which** applications are available, **where** they are implemented, and **what** their major functionalities are. User Departments and Offices, through their respective "Focal Points" can view the information and update whatever pertains to them (for example: implementation of a new system). This functionality allows users to determine whether information and communications technology initiatives (ICTIs) are already available in the Secretariat, thus helping to prevent duplication of efforts to develop and to implement systems.

5. The development of E-Assets started in July 2001. The target date for its implementation was set to June 2002. During this development period the project shifted from a "Data-gathering exercise" to "IT Asset management". This shift necessitated further development of the system, and a new target date was set for the fall of 2002. At that time, its implementation was to be one of the tasks of the Information and Communication Technology Board (ICTB), as mentioned in the Secretary-General's report to the General Assembly on information and telecommunication technology strategy (A/57/620 dated 20 November 2002, paragraph 86). In December 2002 major gaps in the data entry and search functionality of the system were still identified, and a new user interface was contemplated.

6. The system underwent a major redesign in April 2003, and passed the acceptance test in August 2003. On 18 September 2003 the Secretary-General's report to the General Assembly A/58/377 entitled "Information and telecommunication technology strategy: implementation of General Assembly resolution 57/304 of 15 April 2003" was issued. Paragraph 5 of that report stated "The Information Technology Services Division has implemented an information and communications technology (ICT) assets database, which stores up-to-date information on all ICT systems that have been developed or are under development in the Secretariat worldwide. The appropriate use of this system will be assessed by the (Project Review) Committee (of the Information and Communications Technology Board) as part of its review process for each initiative, ensuring that past or ongoing ICT investments are leveraged and that new initiatives are combined, when appropriate, forestalling duplication".

7. On 21 November 2003, Secretary-General's bulletin ST/SGB/2003/17 was issued, entitled "Information and Communications Technology Board". This bulletin updated the mandate and responsibilities of the ICTB, and superseded the earlier ST/SGB/2001/5 on the same subject. In Section 5 thereof, ST/SGB/2003/17 established the Project Review Committee (PRC) whose purpose is to apply uniformly the standards decided

upon by the ICTB to information and communications technology initiatives within the Organization and to recommend whether such initiatives should proceed. Accordingly, one other important goal of E-Assets was to assist the PRC with reviewing ICTIs for uniform compliance with ICTB mandated standards.

8. According to information provided by ITSD the cost of E-Assets through June 2004 totalled approximately \$200,000 (including some capacity building costs through on-the-job training). Further development anticipated for E-Assets includes a "Project Management System" which will add the functionality of systematically monitoring the development of new systems, and a set of standard terminology for data entry into E-Assets. The estimated cost of these two components was \$175,000, bringing the total cost of E-Assets to \$375,000. At the time of the audit E-Assets contained information about 448 IT systems in the Secretariat.

b. Description of E-Assets

9. The information stored in E-Assets can be divided into two major categories: (a.) IT Systems and (b.) Hardware. The IT Systems category is further divided into three hierarchical categories, namely, "System", "Application" and "Software Tools". Each "System" can have one or more "Application". Each "Application" in turn, can have one or more "Software Tools".

10. A user guide was compiled by ITSD. This document provides a definition of each of the three sub-categories of IT Systems, and describes the data which should be entered into E-Assets for each sub-category. Typical data about an IT System is shown below, as taken from a "Portfolio Report" of E-Assets:

Portfolio Report		July 28, 2004
System Name	Central Registry of Information	
Description	Lotus Notes applications in Vienna have two core resources. The first is IMIS (data and loggers) and the second is the Central Registry (data which should not be maintained in IMIS).	
Substantive Function	Administration	
Technical Function	None	
Technical Author	unov - United Nations Office at Vienna	
Business User	unov - United Nations Office at Vienna	
No. of Users	812	
Applications	Central Registry of Information	
Software Tools		
Hardware		
Contacts	Mthokozisi HCUBE - MthokozisiHCUBE@unvienna.org Andrew Ruane - Andrew.Ruane@unvienna.org	

11. E-Assets provides several query options, which allow users to retrieve and review data in several groupings, such as: "Business User" (all systems used by a specific department or organization); or "Technical Function" (all systems with a specific technical function). A "Search" capability allows users to refine the retrieval criteria somewhat further.

II. AUDIT OBJECTIVE, SCOPE AND METHODOLOGY

12. The audit objectives were to assess: (i) how complete, accurate and reliable the information in the system is; (ii) to what extent the goals of E-Assets were achieved to date; and (iii) how secure is the information maintained in the system. The audit focused on the following major areas and processes:

- (a) Review of the data in E-Assets as of March 2004 and assessing:
 - (i) Whether the data reasonably represents information about IT systems at Headquarters and at overseas offices; and
 - (ii) Adequacy of controls embedded in the system to validate the data entered into it.
- (b) Review of policies and procedures for using E-Assets as a data repository, and as a decision supporting tool:
 - (i) Adequacy of existing policies to enforce the use of E-Assets as a mandatory part of developing and implementing IT systems; and
 - (ii) Adequacy of procedures to support the correct use of E-Assets, as applicable, and the security of the data.

13. The audit did not examine in detail the data on hardware. Access to this data had been restricted to a small group of specifically authorized users in order to reduce the potential exposure to the risk of compromising information systems security as a result of unauthorized use. The authorized users are staff members of ITSD and other developers of application software who need information about hardware. OIOS agrees with this approach, as also stated in paragraph 28 below.

14. In order to assess the completeness, reliability and security of data in E-Assets, and to evaluate to what extent the system has achieved its goals, the auditors met with the E-Assets project management and staff who provided detailed explanations about the system, its development and implementation. The auditors retrieved and reviewed samples of data from E-Assets, reviewed and evaluated the system documentation and

participated in a workshop offered by the E-Assets project team on the standard methodological framework used for systems development.

III. OVERALL ASSESSMENT

15. OIOS noted that E-Assets had been installed on the United Nations intranet, and is available to users for both data input and data retrieval. This provides user departments and offices with information research tools that can assist in leveraging ICT investments, and reducing duplication of efforts to develop and implement IT systems. Thus, one of the goals of E-Assets has been achieved.

16. OIOS also noted that controls over the development and implementation of E-assets were adequate. The data security aspect of E-Assets is also considered adequate.

17. Notwithstanding these achievements, the audit found that several critical aspects of implementing E-Assets have not yet been completed. These aspects are outlined in the detailed audit findings section below, and include the absence of a governance instrument, the inflexible data retrieval tools, and the non-allocation of responsibility for data maintenance. This situation compromises the usefulness of E-Assets as a decision supporting tool for review and oversight of IT projects by the PRC. Thus, in OIOS' view, the goal of assisting the PRC in reviewing ICTIs for uniform compliance with ICTB mandated standards has yet to be achieved.

18. A quick review of data completeness, accuracy and reliability indicated a few inconsistencies, which are shown in paragraphs 24-27 below.

IV. DETAILED AUDIT FINDINGS AND RECOMMENDATIONS

A. Absence of a governance instrument

19. At the time of the audit, the general governance structure for developing and implementing IT systems was already in place. The ICTB mandate was updated through the issuance of ST/SGB/2003/17 of 21 November 2003, which also established the PRC. E-Assets also passed the acceptance test in August 2003, and its implementation was announced and reported to the General Assembly.

20. The governance structure for developing and implementing new systems cannot be considered complete, however, without an instrument (such as an Administrative Instruction – ST/AI) which will require the use of E-Assets as part of the process to oversee the development of IT systems. At the early stages of the audit, OIOS was provided with a draft ST/AI that was said to be in the process of being issued. The draft ST/AI, in paragraph 3.2 requires that E-Assets be used in the process of developing new systems to "...check for duplication". The draft ST/AI, however, was not finalized and issued as yet. ITSD did not provide OIOS with a compelling reason for this delay.

21. Furthermore, the draft ST/AI, in Section 1 thereof, makes reference to a Secretary-General's bulletin which was also not yet finalized and issued.

22. In the absence of a complete set of governance instruments, the use of E-Assets remains non-mandatory. This situation compromises the benefits of E-Assets, because it is not used uniformly across the Secretariat.

Recommendation 1

OIOS recommends that the Information Technology Services Division initiate, as soon as practicable, a concerted effort to have the unfinished governance instruments completed and issued (AH2004/513/05/001).

23. *ITSD management concurred with this recommendation and indicated that the issuance of a Secretary-General's bulletin and an Administrative Instruction may still take another six to twelve months.* OIOS acknowledges this response, and will close this recommendation in its database as soon as the said governance instruments are issued.

B. Findings arising from reviewing the system

Data retrieval tools

24. OIOS noted in the process of testing the data retrieval features of E-Assets that the system was capable of providing either on-line views of the data requested, or printed reports the format and contents of which were pre-set. OIOS also noted that E-Assets provided no tool to allow the user to sort the specific data to be retrieved, or to present it in any way that is different from the preset formats. OIOS therefore concluded that the benefits of E-Assets could be enhanced significantly by further developing and enhancing the data retrieval tools provided to the users.

Recommendation 2

OIOS recommends that the Development of New Technologies Service Section of the Information Technology Services Division develop and implement improved data retrieval tools from E-Assets, thus enhancing and leveraging its potential (AH2004/513/05/002).

25. *ITSD management concurred with this recommendation and indicated that requirements are in progress, and that an evaluation of several technical solutions will take place before implementation, which is planned for the fourth quarter of 2005.* OIOS acknowledges this response, and requests to be advised when this recommendation is implemented. Based on a brief follow-up review, OIOS will at that time close this recommendation in its database.

Data consistency and maintenance

26. OIOS also noted that there were inconsistencies in the data kept in E-Assets. A cursory review of the data as per the "Portfolio Report" of 28 July 2004 (the report) showed that there was no consistent definition of what comprises a "System", and how this data field should be used. For example: the description of an entry named "Finance and Support Services" indicated that this was in fact a sub-system of IMIS (page 165 of the report). Another entry showed a system named "Gestion de Stock" deployed at the United Nations Offices at Geneva, and used for inventory management (page 185 of the report). In this case, the system name was shown in French, indicating the absence of a consistently applied language to the data in E-Assets. Another entry named "Fax Server" was shown on page 161 of the report: the description of this system was unclear, and did not indicate the purpose or the intended use of it. Still another entry showed a system named "Peregrine Service Center", and provided no description at all.

27. *ITSD management indicated that the task of standardizing and enhancing data input consistency into mandatory information fields of E-Assets (for example: the "Substantive Functions" and the "Technical Functions" fields) was undertaken already during the audit, and is by now complete.*

28. The additional development of E-Assets described in paragraph 8 above is expected to provide a set of standard terminology for data entry into E-Assets. This will address the inconsistency of data to some extent, but will also require a "clean-up" exercise of data already stored in the system.

29. *ITSD management indicated that the need for data "clean-up" is recognized as a necessary task to be done on a regular basis. DNTS already conducted two such exercises and a third one is planned for the first quarter of 2005.*

30. Documentation provided to the auditors by DNTS/ITSD included a "Draft User Guide" (by now in final format) and a "Quick Reference Guide" to E-Assets. OIOS found both of these documents well written and presentable. The "User Guide" provides definitions of "System", "Application" and "Software Tool", all of which are used to describe data stored in E-Assets. Notwithstanding these documents, OIOS noted inconsistencies in the data kept in E-Assets, as shown in the preceding paragraph. OIOS therefore concluded that detailed training should be provided to the users who enter data into E-Assets (these users usually are the departmental IT focal points). To date, DNTS/ITSD had delivered several Seminars on "Developing a High-level Business

Case”, in line with the standard methodology adopted for systems development (the “Prince II” framework). These seminars were delivered at several Duty Stations, and were also attended by the auditors.

31. In addition, OIOS noted that some of the data in E-assets appears to be outdated, or even unreasonable. For example, page 262 of the report shows a system named “Migration from cc:mail to Lotus Notes”, located at the United Nations Office in Geneva. Another example is shown in page 281 of the report, describing a system named “ODCCP NGO Directory” located at the United Nations Office in Vienna, and providing no details. These examples may indicate the need to review and update the data in E-Assets, possibly as part of the data “clean-up” exercise mentioned in paragraph 25 above. The responsibility for data review and updating has not been allocated as of yet, pending the issuance of a governance instrument mentioned in paragraphs 19-22 above.

Recommendations 3 and 4

OIOS recommends that in addition to the seminars already delivered, the Information Technology Services Division identify departmental focal points for E-Assets, and develop and deliver to them a training program that will address the need for data consistency (AH2004/513/05/003).

OIOS also recommends that the Information Technology Services Division formally allocate the responsibility for data maintenance with a view to ensuring that the data is accurate and up-to-date (AH2004/513/05/004).

32. *ITSD management concurred with these two recommendations, and indicated that a training program will be developed and delivered during the second quarter of 2005. Regarding the allocation of responsibility for data maintenance, ITSD management indicated that this will be done as part of the governance instruments that will be issued, as discussed in Recommendation 1 in this report.* OIOS acknowledges this response, and requests to be advised when the training program is delivered. Based on a brief follow-up review, OIOS will at that time close recommendation 3 in its database. OIOS will close Recommendation 4 in its database as soon as the subject governance instruments are issued.

Data security

33. OIOS noted that E-Assets is currently available on the United Nations Intranet, that access to information about hardware was restricted and regulated, and that plans to place the system on the United Nations Extranet include security considerations. OIOS thus concluded that the data security issues of E-Assets are handled adequately.

Implementation status

34. In an unrelated audit report (A/58/746 of 25 March 2004, paragraph 60) OIOS expressed concerns that "...the criteria for defining the point at which a software development project is complete have not been defined...". OIOS is of the view that the same concern applies to E-Assets as well. This view is further supported by the fact that while E-Assets had been installed and is available on the United Nations intranet, the tasks of finalizing and formalizing the governance structure, enhancing information retrieval tools, and allocating the responsibility for data maintenance, have yet to be completed as outlined earlier in this report. Therefore:

Recommendations 5

OIOS recommends that the Information Technology Services Division clearly define the point at which the implementation of E-Assets will be considered as complete (AH2004/513/05/005).

35. *ITSD management concurred with this recommendation and indicated that it considers the completion of all prior recommendations as the point at which implementation of E-Assets will be complete.* OIOS acknowledges this response, and will close this recommendation in its database.

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Board of Auditors

