WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

Internal Oversight Division

Reference: IA 2018 - 03

Audit Report

Audit of Enterprise Resource Planning Portfolio

Date: December 20, 2018

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LIST OF ACRONYMS

AIMS	Administrative Integrated Management Systems
BI	Business Intelligence
BRM	Benefits Realization Management
CMP	Capital Master Plan
CRM	Customer Relationship Management
DPPF	Department of Program Planning and Finance Department
ECM	Enterprise Content Management
EDMS	Electronic Document Management System
EPM	Enterprise Performance Management
EPMO	Enterprise Resource Planning Project Management Office
ERM	Enterprise Risk Management
ERP	Enterprise Resource Planning
HR	Human Resources
HRMD	Human Resources Management Department
ICS	Individual Contractual Services
ICT	Information and Communication Technology
ICTD	Information and Communication Technology Department
IIA	Institute of Internal Auditors
IOD	Internal Oversight Division
ITSM	IT Service Management
IV&V	Independent Verification and Validation
MAAS	Management and Administrative Applications Section
MVP	Minimum Viable Product
PID	Project Implementation Document
PMO	Project Management Office
PTD	Procurement and Travel Division
PRINCE2®	PRojects IN Controlled Environments
RBM	Results-Based Management
TOR	Terms of Reference
UN	United Nations
UNICC	United Nations International Computing Centre
WIPO	World Intellectual Property Organization

EXECUTIVE SUMMARY

1.   IOD notes that while the timelines for completion of the Enterprise Resource Planning (ERP) Portfolio have been adjusted more than once since its inception in 2010, the World Intellectual Property Organization (WIPO) delivered the projects within the overall budget approved by the Member States.

2.   Whereas the Benefit realization plan of the ERP Portfolio set 132 expected benefits, 82 per cent of which have been achieved, there are opportunities to extract further benefits from the ERP by developing a collaborative mechanism to support business areas in deriving more value from the ERP business solutions and related processes.

3.   This can be achieved by among others, establishing a method to assess and support the maturity of business solutions deployed through the ERP Portfolio, in order to quantify and develop capabilities, which will sustain a gradual and stable evolution of these solutions towards an optimized state.

4.   As the Organization prepares to move to the Cloud, the Administrative Integrated Management Systems (AIMS) Portfolio Board should take a leading role in reviewing the potential impact of the move on both the ERP System, and related organizational policies, regulations, rules, and practices, in order to ensure adaptability, alignment and safeguard operational continuity, among others.

5.   Management of major Information and Communication Technology (ICT) projects in WIPO would benefit from establishing an internal process whereby, Service delivery agreements and related service request accounts are created with the United Nations International Computing Centre (UNICC) at the onset, in order to better capture related costs and avoid reconciliation issues as was experienced during the implementation of the ERP Portfolio.

6.   In addition, a number of issues raised on effective and efficient management of the projects in the ERP Portfolio, have been highlighted as systemic issues that have also been identified during IOD's audit of Project Management at WIPO (IA 2016-04) issued in 2016. Implementing the pending recommendations from the Project Management report would help address these systemic issues.

7.   Finally, among the opportunities identified for improving project management, include, developing a common nomenclature for classifying, filing and archiving relevant project documentation within the Enterprise Content Management (ECM) system in order to enhance accuracy, completeness and efficient accessibility and sharing of project documentation.

1.   BACKGROUND

8.   In September 2010, the forty-eighth session of the Assemblies of the Member States of WIPO approved the Implementation of a Comprehensive Integrated ERP System with a view to: (i) modernize core administrative, management and customer service functions; (ii) improve efficiency and productivity of administrative and management processes; and (iii) enhance the capability to provide better information to Member States, Stakeholders and, Management[1].

9.   The ERP system was implemented through a portfolio of inter-related projects. The first stream of projects planned to establish a comprehensive set of tools to strengthen Human Resources (HR) Management, comprising position management, benefits and entitlements, payroll, recruitment, staff performance, skills, learning and development.

10.   The second stream of projects was aimed at embedding a set of tools to strengthen and support the implementation of Results-Based Management (RBM), namely Enterprise Performance Management (EPM), Enterprise Risk Management (ERM) and Business Intelligence (BI), comprising biennial planning, annual work-planning, implementation monitoring and performance assessment, reporting and analytics.

11.   The third stream of projects targeted enhancements to the existing tools, used by the Finance, and Procurement and Travel Division (PTD), through configuration changes and upgrades to introduce new functionalities and improve business processes.

12.   The fourth stream of projects planned to deploy tools to enable WIPO to start gaining experience in the area of Customer Relationship Management (CRM), comprising mailing lists, contact database, access management and customer analytics.

13.   WIPO put in place an ERP Governance structure, composed of various stakeholders, to ensure a structured approach in managing the ERP Portfolio. This is shown in figure A below:

Figure A: ERP Portfolio Governance
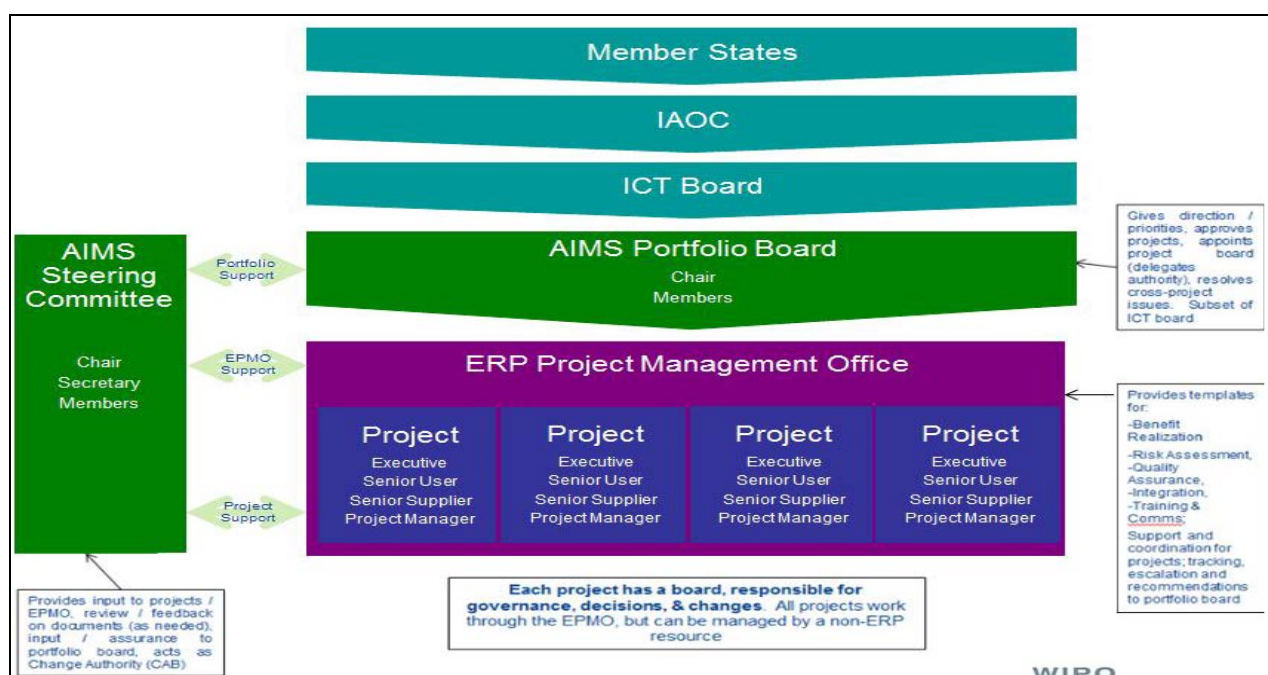
Source: WIPO's Wiki space

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[1]   http://www.wipo.int/edocs/mdocs/govbody/en/a_48/a_48_14.pdf

Table 1: ERP Portfolio Project Status as at July 31, 2018 (in Thousands of Swiss francs)

S/n	Stream	Project	Actual Completion	Status[2]	Budget (a)	Actual (b)	Budget Variance (a)-(b)	Per cent Variance
1	HR	Core HR / Payroll	Q1 2014	Live	4,172	4,095	76	2%
2	HR	Recruitment	Q1 2017	Live	681	677	4	1%
3	HR	Self-Service	Q3 2017	Live	745	428	316	42%
4	HR	Talent Management	Q4 2017	Live	2,157	1,357	800	37%
5	AIMS	PeopleSoft 9.1 Upgrade	Q2 2012	Live	1,059	992	67	6%
6	AIMS	PeopleSoft 9.2 Upgrade	Q4 2015	Live	925	913	12	1%
7	AIMS	Online Booking Tool(OBT) - Travel	Q2 2014	Live	164	111	53	32%
8	EPM	Biennial Planning (14/15)	Q1 2012	Live	3,304	2,930	374	11%
		Annual Work Planning	Q3 2012	Live				
		Monitoring and Assessment	Q1 2013	Live				
		Biennial Planning (16/17)	Q3 2013	Live				
9	EPM	Enterprise Risk Management	Q1 2015	Live	437	326	111	25%
10	EPM	Business Intelligence	Q4 2015	Live	2,818	2,740	78	3%
11	CRM	Contacts (PROdest)	Q4 2017	Live	138	76	62	45%
12	CRM	DSS Transition	Q4 2017	Live	236	92	145	61%
13	PMO	Vision	Q2 2012	Complete	565	402	163	29%
14	CRM	Conference Services (requirements only)	-	Complete	156	150	6	4%
15	HR	Time Management	-	In Progress	1,235	548	687	56%
16	AIMS	Travel / Event Replacement	-	In Progress	179	164	15	8%
17	AIMS	Revenue Management	-	In Progress	1,299	1,018	281	22%
18	CRM	Customer Financial Reporting	-	Merged[3]	-	-	-	-
19	CRM	Customer Data Warehouse	-	Cancelled	-	-	-	-
20	HR	Staff Welfare	-	Cancelled	-	-	-	-
		Project Total			**20,270**	**17,019**	**3,251**	16%
	PMO	EPMO Admin and other costs	-	-	5,071	4,156	915	18%
		Grand Total			**25,341**	**21,175**	**4,166**	16%

Source: Enterprise Resource Planning Project Management Office (EPMO)

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[2]Complete Status for Projects refer to those whose end product is documentary in nature whereas Live Status refers to projects whose end product is a technical solution/system or tool rolled out and in use.
[3] The project was merged with the Revenue Management project which is in progress at the time of the writing of this report.

14.   The Enterprise Resource Planning Project Management Office (EPMO) is responsible for managing and coordinating the activities of the different projects included in the ERP Portfolio. The EPMO includes members from the ERP Project Team, Management and Administrative Applications Section (MAAS) and Information and Communication Technology Department (ICTD).

15.   The Portfolio schedule, originally presented and fully disclosed to the WIPO Member States in 2010 as a five-year project, has been impacted by a number of delays and subsequently revised over the years. The status of the projects, budgeted and actual costs as at July 31, 2018 is given in table 1 above. Out of the 20 projects listed, 12 had gone live, two were completed, three were in progress, two were cancelled and one was merged into another project.

16.   The following projects, Customer Data Warehouse and, Staff Welfare (Legal Case Management) were cancelled following pre-project decisions. For instance, the Human Resources Management Department (HRMD) as the Business owners, cancelled the Staff Welfare project, because of the small volume of cases. The Customer Data Warehouse project was reported as pending approval of the AIMS Portfolio Board in the final progress report of 2017. However, delays in achieving readiness to initiate the project combined with the lack of a strong business case meant the project did not meet the approval criteria and was subsequently removed from the scope of the portfolio

17.   For both cancelled projects, no costs were incurred prior to or after the decision to cancel, and in all instances, the decisions were subsequently communicated in Progress reports on the ERP Portfolio.

18.   In June 2016, the AIMS Portfolio Board resolved to combine the Customer Financial Reporting project with the Revenue Management project rather than run it as a separate project. This was because when developing the project brief and agreeing to the scope of the Revenue Management project, it was found that the scope, in addition to covering the full revenue cycle, also included reporting to customers among others. As a result, for better efficiency, the Customer Financial Reporting was no longer required as a stand-alone project.

19.   In 2010, the overall estimated cost for the implementation of the ERP Portfolio of projects amounted to approximately 25 million Swiss francs, which was planned to be spent over a five year timeframe. As of December 2017, the Organization spent 20.87 million Swiss francs.

Table 2: ERP Portfolio of Projects Budget Utilization (in Thousands of Swiss francs)

Details	Portfolio Budget	Expenditure as at December 31,2017[4]	Budget Utilization (Per cent)	Additional Expenditure up to July 31, 2018	Expenditure as at July 31,2018	Balance as at July 31, 2018
Implementation of the ERP System	25,341	20,876	82.4	299	21,175	4,166

Source: Compiled from Enterprise Resource Planning Project Management Office (EPMO)

20.   As can be seen in the table 2 above, 82.4 per cent of the budget had been spent by December 31, 2017. Additional expenditure of about 299,000 Swiss francs was incurred up to July 31, 2018 bringing the total expenditure to 21.18 million Swiss francs and leaving a balance of 4.17 million Swiss francs as at the close of the Portfolio in July, 2018.

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[4] WIPO Performance Report 2016/17.

21.   The total expenditure for the Portfolio would further increase to around 23.34 million Swiss francs by the end of the first quarter of 2019. The increase would include costs mostly related to external implementation partners, project personnel, application hosting, training and communications for the projects currently in progress. The balance of approximately two million Swiss francs will be returned to the reserves after a financial audit is completed.

2.   AUDIT OBJECTIVES

22.   The objectives of the audit are to take stock of the evolution the ERP Portfolio, and review effective and efficient management of the projects of this Portfolio, including assessing:

(a)   Governance, risk management and controls put in place to effectively manage projects of the ERP Portfolio;

(b)   Timely completion of projects and efficient use of funds; and

(c)   Effective measurement of expected benefits, and whether lessons learned have been captured and subsequently applied.

3.   AUDIT SCOPE AND METHODOLOGY

23.   The audit scope covered projects managed by the EPMO, taking into consideration previous audits and reviews conducted on the subject matter. Areas reviewed included among others, effective management of the project Portfolio, budgets and costs efficiencies, risk management, internal controls, and consistent use of project management methodologies, and effective project governance.

24.   The methodology included: interviews with stakeholders, analyses and review of project documentation, and tests of a sample of projects, with a view to:

(a)   Assessing effective governance, risk management and control environment surrounding the ERP Portfolio;

(b)   Assessing whether the Project Management policies and procedures have been consistently applied to projects of the Portfolio;

(c)   Verifying whether measures taken to control ERP Portfolio costs, timeliness and quality are effective;

(d)   Reviewing and confirming the status of the implementation of the ERP Portfolio and verifying whether projects have been delivered as per requirements;

(e)   Checking whether a periodic evaluation of the ERP Portfolio is conducted, as well as establishing whether feedback and/or lessons learnt are incorporated to improve the performance of subsequent projects; and

(f)   Assessing whether a methodology is in place and functioning effectively, to measure expected benefits from the projects of the Portfolio.

25.   The audit was performed in accordance with the International Standards for the Professional Practice of Internal Auditing (the Standards) issued by the Institute of Internal Auditors (IIA).

4.   AUDIT RESULTS - POSITIVE DEVELOPMENTS

26.   The Internal Oversight Division (IOD) notes the following positive developments on the ERP Portfolio :

(a)   The ERP Portfolio did not exceed the budgeted envelop of 25 million Swiss francs;

(b)   The ERP Portfolio evolved and delivered a number of solutions and tools aimed at modernizing and improving the quality, efficiency and productivity of WIPO's management, administrative and customer service functions, and improving the Organization's capacity to provide better information to Member States, stakeholders and management;

(c)   The adoption of the PRojects IN Controlled Environments (PRINCE2®) framework and application of a Common Implementation methodology based on the framework helped provide the guidance for consistent project management practices;

(d)   Two Independent Verification and Validation (IV&V) exercises were conducted. In 2013 to provide more effective leadership and decision making and ensure a consistent approach between projects. In 2016, to ensure effective implementation of the recommendations made in the first validation exercise. The reviews made a combined total of 99 (58 in 2013 and 41 in 2016) recommendations out of which 89 per cent (88/99) have been implemented;

(e)   The External Auditors conducted a Performance Audit of the ERP System in 2014 for the period 2010 - 2014. This audit made nine recommendations, six of which have been implemented. Three pending recommendations are currently being tracked in the IOD recommendation management system;

(f)   The development of a dedicated Wiki space whose purpose is to store and share relevant information on the ERP Portfolio projects' lifecycle; and

(g)   The ERP team in coordination with Business owners monitored the progress of Benefit realization plans over time by using a set of key performance indicators.

5.   OBSERVATIONS AND RECOMMENDATIONS

27.   The report presents observations on: (i) post implementation and transition, which relates to benefit realization and the evolution of the ERP in the changing ICT landscape of the Organization; and (ii) overall management of the ERP Portfolio projects and lessons learned that could be applied to future project across the Organization.

5.1 OBSERVATIONS ON POST IMPLEMENTATION AND TRANSITION

(A)   BENEFITS REALIZATION AND MATURITY OF THE ERP SYSTEM

28.   The ERP Portfolio project closed in July 2018, with 12 of the 20 projects going live, two projects completed, three in progress (to be completed outside the Portfolio), two cancelled and one merged. The audit work included among others, interviews of stakeholders, including five members the AIMS Portfolio Board, and eight business owners whose projects have gone live during the lifecycle of the Portfolio. IOD verified whether the expected

benefits have been derived, and assessed actions being taken to ensure adaptability, stability and maturity of the ERP in the evolving business and Information Technology needs of the Organization.

(i)   Benefits Realization

29.   According to PRINCE2®, Benefit realization is the achievement of project benefits envisaged in the business case. A Benefit realization plan is used to define how and when to measure the achievement of project benefits.

30.   Following Project completion, the EPMO in coordination with Business owners monitored the progress of the Benefit realization plan using a set of key performance indicators. The baseline used for estimating benefits such as process efficiencies was a comparison of efforts compiled for the "As-Is" processes and the documented "To-Be" processes as outlined in the authorized version of the Project Implementation Document (PID).

31.   Table 3 below shows that the ERP Portfolio Benefit realization plan has 132 expected benefits. As of July 2018, 82 per cent (108/132) were reported to have been achieved, three percent (4/132) were partly achieved, four percent (5/132) were not achieved, eight per cent (11/132) were open, and the remaining three per cent (4/132) were either closed or cancelled.

Table 3: Benefits Realization Plan by Project

Project	Achieved	Partly Achieved	Not Achieved	Open	Cancelled	Closed	Total number of Benefits
Recruitment	13	0	0	0	0	0	13
EPM	12	1	1	0	0	0	14
HR[5]	12	0	0	0	1	0	13
Core HR and Payroll[4]	11	0	1	0	0	0	12
Self-Service	11	0	0	0	0	0	11
Business Intelligence (BI)	10	0	0	0	0	0	10
Enterprise Risk Management	8	0	0	0	0	0	8
PROdest	7	0	0	0	0	0	7
PS 9.2 Upgrade	7	3	2	0	0	0	12
Talent Management	7	0	0	1	0	0	8
Revenue Management	5	0	0	8	0	0	13
Online Booking Tool	3	0	1	0	0	0	4
DSS Transition	2	0	0	0	0	3	5
Time Management	0	0	0	2	0	0	2
Total	**108**	**4**	**5**	**11**	**1**	**3**	**132**
Per cent	**82%**	**3%**	**4%**	**8%**	**1%**	**2%**	**100%**

Source: Compiled from EPMO Benefits Realization Plan.

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[5] HR combined with Core HR and Payroll as one project

32.   Discussions with business owners revealed that focus is currently put on among others, consolidating the benefits achieved from the deployed systems as outlined in the respective PID. A number of actions are being taken to further stabilize and mature the systems in place. For instance, the Talent management is currently focusing on the Skills Inventory, to take stock of all the skills in house, whilst projects such as DSS Transition and PROdest are still conducting data validation exercises.

(ii)   <u>Enhancing Benefits</u>

33.   Acknowledging that 82 per cent of expected benefits initially set, were achieved, there are however, opportunities to further extract benefits from the systems implemented through the ERP Portfolio. For instance, IOD Audit of Recruitment (IA 2017-04) conducted in 2017, indicated that recruitment processes can be more efficient, and more benefits can be derived from the tool used to manage recruitments (Taleo), by making use of the tool's data analytics and reporting functionalities, which were found to be underutilized.

34.   Likewise, IOD's audit of Payroll (IA 2017-01) also highlighted opportunities for further efficiency gains from the Core HR/Payroll systems by avoiding duplication of manual and automated controls, and using the systems to manage processes that were still being manually managed.

35.   Recognizing that extracting more benefits from the ERP systems would require among others, an evolution and enhancement of current business support, and increasing business areas' awareness, of the extended potential of the ERP system, IOD believes that optimizing the use of the ERP would offer sustainable efficiencies and effective gains to the business areas of the Organization.

36.   IOD notes that actions are being taken within the Department of Program Planning and Finance Department **(**DPPF) in that regard. For example, the MAAS currently responsible for providing ongoing services to users in respect of transitioning into operations and enhancing components of the ERP, is being transformed into the Enterprise Solutions Division to be headed by a Director. This Division will among others, ensure that the ERP matures with the evolving business needs of the Organization, including technology shifts such as the planned transition to Cloud.

(iii)   <u>Measuring Maturity of ERP Solutions</u>

37.   IOD notes that the Organization would benefit from developing a collaborative mechanism and process to support business areas in maturing in the use of, and to extract more benefits from, deployed ERP solutions.

38.   Collaborative work can be initiated with respective business areas to examine and proactively define the specific areas of continuous improvements and accountability for the level of maturity of deployed solutions.

39.   This can be achieved using a maturity model developed within the context of the Benefits Realization Management (BRM). The aim of a maturity assessment is to quantify the organization's capability in respective functional or business areas where solutions have been deployed. A key outcome of the maturity assessment process is to set reasonable, necessary and mutually agreed targets for each solution based on a capability assessment and assessed level of the solution's maturity. The model can be further supported by establishing an effective user feedback mechanism to capture relevant information for assessing maturity.

40.   A continuous improvement action plan can be subsequently established to drive towards optimized use to derive more business value from these solutions. Therefore, the

process is a proactive and robust way to clarify capability, and set targets for gradual and stable evolution of solutions towards an optimized support of business areas.

(iv) <u>ERP Transition to the Cloud</u>

41.   According to the Terms of Reference (TOR) of the AIMS Portfolio Board, one of the key roles of the Board is to make to strategic decisions and ensure the ongoing alignment of the portfolio to the Organization. As WIPO transitions its ERP to the Cloud, it needs to adopt a strategic outlook and diligently assess key aspects such as financial outlays on system upgrades, new risks, changes in work practices, and alignment of related policies and procedures.

42.   WIPO is currently developing a Cloud Strategy, and has already issued an Office Instruction (No15/2018) - Cloud Hosting Services Policy, defining the Cloud hosting models available, identifying roles and responsibilities, and outlining the procedures for using Cloud services. Furthermore, part of the roles of the new Enterprise Solutions Division, included ensuring effective and efficient shift of the ERP to the Cloud.

43.   As the move to the Cloud is in its early stages, IOD would emphasize the importance of effective coordination and cooperation among the stakeholders. IOD also highlights the need for the AIMS Portfolio Board to take a leading role, in reviewing the potential impact of Cloud on both ERP System, and related organizational policies, regulations, rules, and practices, in order to ensure adaptability, alignment and safeguard operational continuity among others. IOD will conduct an audit of the Organization's Cloud initiative in the near future.

Recommendation (s)

1.   The Administration and Management Sector should work with the AIMS Board to develop a collaborative mechanism with guidelines to support business areas in identifying opportunities to extract further benefits from the ERP system and establish a method to assess the maturity of business solutions deployed through the ERP Portfolio.

(Priority: Medium)

5.2 OBSERVATIONS ON THE MANAGEMENT OF PROJECTS IN ERP PORTFOLIO

44.   IOD interviewed a number of stakeholders including, eight of the 12 business owners whose projects have gone live, five of the eight members of the AIMS Portfolio Board, and reviewed documentation for 10 projects, as well as related policies and project management procedures and guidelines. More emphasis was placed on projects that were delivered in 2017 (5/12), after the last external independent verification and validation exercise of 2016. These form the basis for the observations that follow.

45.   A number of observations made below have been identified as systemic issues raised during past audits on other projects and in particular, during IOD's audit of Project Management in WIPO, conducted in 2016.

(A)   PROJECT COST, TIME AND SCOPE MANAGEMENT

46.   All projects are carried out under certain constraints – cost, time and scope – also commonly identified as the project management triad, or the "triple constraint''. Furthermore, sound project management processes and practices supported by clear guidelines and

procedures, are key success factors to effectively manage those constraints, and efficiently deliver. The audit identified a number of good practices, opportunities, and lessons learned that would help further enhance project management at WIPO.
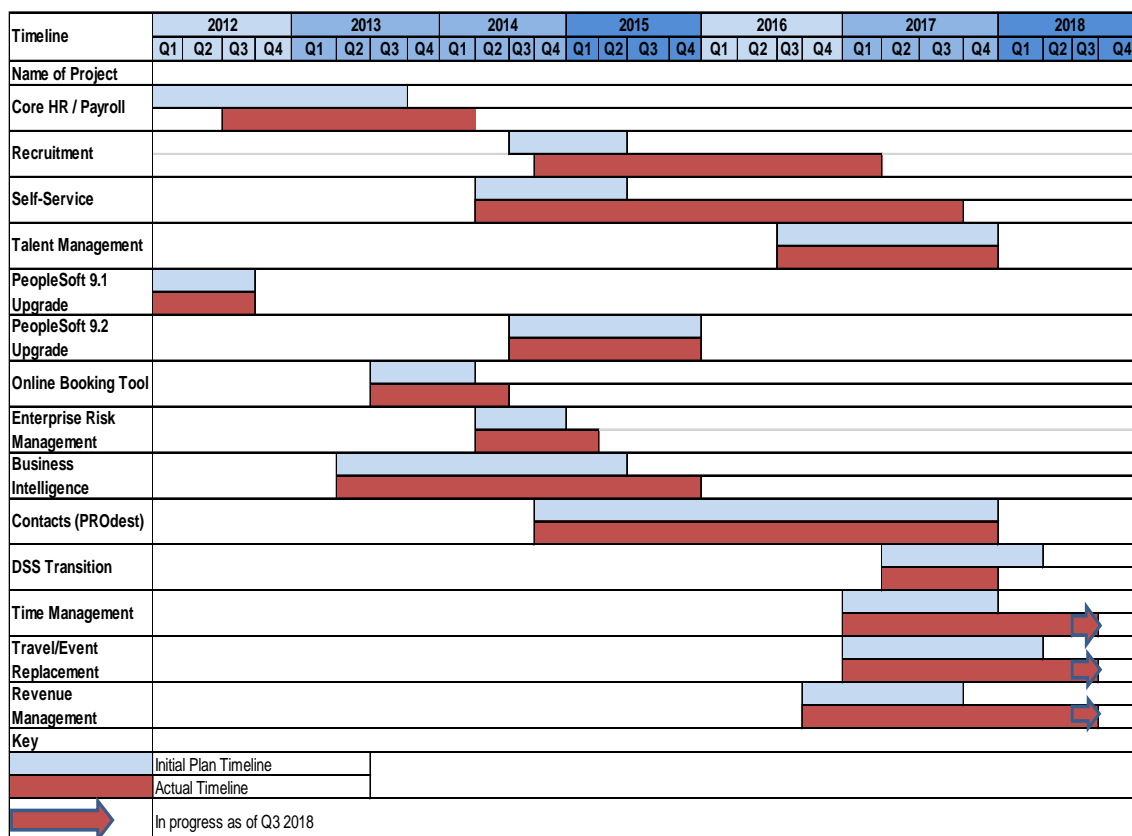
(i)   ERP Portfolio Timelines

47.   IOD observes that the timelines for completion of the Portfolio has been adjusted more than once, and one of the reasons given, among others, is that the Organization emphasized quality and cost over time, in order to achieve the right results.

48.   In more detail, WIPO started the implementation of the ERP system in 2010, which was scheduled for completion by end of 2015. However, in 2015, a revised timeline of second quarter of 2016 was indicated. In the subsequent years, WIPO revised the timeline for completion of the Portfolio to end of first quarter 2017, then end of fourth quarter 2017, and finally to the end of second quarter 2018 as per the final progress report on the ERP System to WIPO Member States. The ERP Portfolio formally closed in July 2018. These revisions have been regularly reported to Member States in the annual progress reports.

49.   A number of factors contributed to the delay in starting and completing a number of projects shown in figure B below, such as interdependencies and complexity. For instance, the PeopleSoft®, upgrade 9.1 and 9.2 were carried out in 2012 and 2014 respectively in order to set a stable foundation for the deployment of future applications. This resulted in revisions in the planned start dates for a number of other projects.

Figure B: Project Timelines

Timeline	2012				2013				2014				2015				2016				2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Name of Project																												
Core HR / Payroll																												
Recruitment																												
Self-Service																												
Talent Management																												
PeopleSoft 9.1 Upgrade																												
PeopleSoft 9.2 Upgrade																												
Online Booking Tool																												
Enterprise Risk Management																												
Business Intelligence																												
Contacts (PROdest)																												
DSS Transition																												
Time Management																												
Travel/Event Replacement																												
Revenue Management																												

Key:
- Initial Plan Timeline
- Actual Timeline
- In progress as of Q3 2018

Source: Compiled from Enterprise Resource Planning Project Management Office documentation

50.   Also, the delay in the rollout of the core HR and payroll solution impacted the HR stream and subsequent HR projects, such as Recruitment and Self-Service, which started approximately eight months later than originally planned according to actual project initiation as per PIDs

51.   Additional conditions that impacted timelines include:

(a)   Challenges with requirements definition by the business, and requirements gathering at the inception of the project;

(b)   WIPO's capacity to absorb the changes that new solutions introduced, and the time needed to embed the skills and competences to support the new technologies before starting another implementation; and

(c)   Administrative processes related to procurement and recruitment of project members and subsequent turnover of project personnel.

(ii)   Effect of Project Personnel Turnover on Timelines

52.   IOD found that in 40 per cent (4/10) of the projects reviewed, the project team members were intentionally or unintentionally replaced due to among others, the Regulatory Framework not enabling the recruitment and long term retention of project personnel for multi-year projects. The project members usually hold Temporary Contracts, Individual Contractual Services (ICS), or are from external service providers.

53.   The turnover of project personnel and in particular Project Managers resulted in, changes to, or introduction of, different implementation methods which consequently impacted on timelines of project delivery. For example, the PROdest project, with a planned timeline of less than one year, had three different Project Managers over the course of its implementation.

54.   IOD also notes that timeline could be impacted by dependence on effectiveness and efficiency of implementation partners. For instance, projects would be impacted if implementation partners selected were not equal to the task or did not effectively and efficiently deliver the solution. For example, the implementation of the Performance Management stream and in particular, the development of the technical solution feature for this project, was impacted because the selected project partners were changed three times during the development lifecycle.

55.   Other than timelines, IOD further points out that high turnover of project personnel would also affect retention of valuable project management skills and institutional knowledge within the Organization.

56.   Going forward, timelines for future projects should take into account, among others, WIPO's internal administrative processes, such as those related to recruitment and procurement of goods and services which can be complex and lengthy; as well as consider organizational experience and lessons learned from projects completed in the past, and in particular longer term projects (over two years), whose resource requirements may not align with WIPO contracting rules. The recent changes in WIPO Regulations[6] on the use of temporary staff would support effective management of project personnel.

(iii)   Costs Adjustments within the Overall Budget

57.   Overall, the ERP Portfolio did not have any wide variations on budgeted amounts compared to actual costs because of the following factors ,among others:

(a)   Projects cost less than budgeted, owing to vendor development costs being negotiated to less than forecasted, and previously budgeted amounts such as those for

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[6] Regulation 4.16 on Temporary Appointments - Currently, the maximum cumulative length of temporary appointments that may be granted to a staff member is two years. The amendment will allow the Director General to extend the maximum cumulative length to three years, in exceptional circumstances.

professional services not being used,(e.g. ERM Project). WIPO also used fixed price contracts with implementing partners to manage the overall cost variations that may arise during the project lifecycle; and

(b)   In 2015, the budgets of a number of individual projects were adjusted either upwards or downwards, but within the same envelop of 25.3 million Swiss francs, including a 1.6 million Swiss francs contingency funds. This resulted in maintaining costs, which could have otherwise exceeded initial budgets, within revised budgets in some cases, and also reduced the budget of some projects whose estimated costs were reassessed to be lower than initially planned.

58.   While cost efficiencies among other factors, could be gained by assigning a Project Manager to multiple projects, this practice may not result in efficient and effective project management. For instance, the End of Project Report of the Talent Management Project highlighted coordination challenges faced by the Project Manager who was managing both the Talent Management and Time Management projects.

59.   It would therefore be more efficient and effective to set certain criteria for deciding on whether to assign multiple projects to a single Project Manager, based on for instance; project size, complexity and delivery timelines.

(iv)   Costs Charged by UNICC

60.   Minutes of the AIMS Portfolio Board held on July 26, 2018 indicate that some costs charged by the UNICC[7] for service requests related to the Portfolio may have been charged to the MAAS, thus potentially understating the true cost of the ERP Portfolio. There was no separate service delivery agreement established with UNICC for the ERP Portfolio service requests, and as a result, these requests were charged to the existing operational account for MAAS.

61.   The EPMO further indicated in the minutes that UNICC has yet to provide data that would provide the correct amounts to be charged against the ERP Portfolio.

62.   While IOD's discussions with the EPMO indicate that the outstanding costs are not expected to significantly impact the overall costs associated to the ERP, it would be beneficial to finalize the reconciliation, which is currently underway at the time of the writing of this report, and include the relevant costs in order to report on a more accurate total cost of the ERP Portfolio.

63.   Going forward, implementing an internal process whereby, service request accounts are created at the onset, for major projects, portfolios, and programs, would help avoid such conditions in the future.

(v)   Project Scoping

64.   There were instances where changes were made to initial requirements, in order to either deliver on time, or maintain costs. This approach which is commonly referred to as Minimum Viable Product (MVP), ensures that projects deliver the critical requirements or basic functionalities, with additional enhancements or requirements being developed post Go-live.

65.   For example, in order to avoid delayed delivery of phase II of the Talent Management project, it was decided that out of a total of 91 requirements initially identified, the critical

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[7] The United Nations International Computing Centre (UNICC) is a provider of Information and Communications Technology (ICT) services to WIPO and other organizations in the United Nations (UN) System.

requirements (37) would be delivered first, and subsequently deliver remaining requirements after the go-live of the solution.

66.   Likewise, in the Self-Service project, the full scope was not delivered as indicated in the End of Project Report, because a component of the project was moved to support and maintenance, with MAAS supporting the cost for developing this component post go-live.

67.   Overall, IOD notes that the ERP Portfolio was successfully delivered within the overall budget, with emphasis on quality, by taking certain individual or combined actions (based on circumstances) such as:

(a)   Taking measures to reduce costs;

(b)   Adjusting individual project budgets within the overall envelop;

(c)   Adjusting timelines; and

(d)   Deferring delivery of certain requirements in order to meet deadlines.

> **Recommendation (s)**
>
> 2. The Department of Program Planning and Finance and the Information and Communication Technology Department should establish an internal process whereby, Service delivery agreements and related service request accounts are created with the United Nations International Computing Centre at the onset, for:
>
> (a) Any future projects being undertaken for the ERP; and
>
> (b) Any major projects, portfolios, and programs being managed across the Organization, in order to better capture related costs, and avoid reconciliation issues (for ICTD).
>
> (Priority: Medium)

(B)   PROJECT SUPPORT SYSTEMS AND TOOLS

(i)   <u>Use of Microsoft Excel for Maintaining ERP Financial Information</u>

68.   Standard Project Costing Templates using Microsoft® Excel were developed for tracking and monitoring project costs. As the Portfolio evolved and the number of projects increased, some changes were made to the main cost elements that were captured on the Portfolio Microsoft® Excel spreadsheet and the number of project cost sheets increased. These spreadsheets were maintained on a Shared drive.

69.   While the Microsoft® Excel enabled the EPMO and Project Executives to track and monitor costs, there are some risks associated with its use, such as, susceptibility to human errors which may compromise the accuracy and integrity of the financial information.

70.   Going forward, it would be beneficial to utilize a more robust and scalable system or method, using existing tools available in the ERP system, to consolidate future projects financial data so as to enhance accuracy, validity and integrity.

71.   This would be particularly useful to help effectively manage and monitor costs for large projects, portfolios, and programs, such as the current Global IP Platform Integration Program which holds a number of portfolios.

72.   Implementing IOD recommendation on project financial reporting made in the Audit of Project Management (IA 2016-04) issued in 2016, would help address this condition.

(ii)   Electronic Document Management System

73.   The ERP Portfolio included the deployment of an Electronic Document Management System (EDMS) to be carried out between 2010 and 2011.

74.   Between 2010 and 2013, attempts to integrate the Portfolio with an EDMS (new and untested technology at the time) were unsuccessful due to among others, technical integration challenges that were experienced. In 2014, WIPO indicated that an optimal way to technically integrate an EDMS solution to the ERP was agreed and the actual integration would be implemented through an ICTD led Capital Master Plan (CMP) initiative.

75.   Meanwhile, the EPMO and the Project Boards used the Wiki solution and/or the Shared drive to share, manage, and file ERP Portfolio documentation. While the use of the Wiki and Shared drive were useful tools, the absence of an EDMS may have impacted the efficient management of project documentation as follows:

(a)   Projects inconsistently used the Shared drive and the Wiki, with some cases where documentation was available on either the drive or the Wiki, and sometimes on both;

(b)   Document version control was not fully efficient and effective leading to challenges in tracking and filling of documents. Additionally, there was no nomenclature adopted for project documentation. Consequently, some project documents were either duplicated, redundant or both;

(c)   Project information relating to the first stage of the EPM project, Biennial Planning 14/15 was not available; and

(d)   The use of the Shared drive made project documentation susceptible to loss through unintentional deletion or editing. Furthermore, there was a risk of accessing outdated documents because of difficulties in identifying which documents were current and updated.

76.   Going forward, WIPO has implemented an ECM system and the ERP Portfolio is an early adopter for the migration of related documentation into ECM. IOD would emphasize that measures be taken to setup a nomenclature to among others, ensure that document are chronologically organized, valid, accurate and complete.

(iii)   Mechanism and Tool to Foster Cross Project Collaboration

77.   Sharing lessons learned among different project teams can help prevent an Organization from repeating the same mistakes and also allow them to take advantage of organizational best practices. Sharing lessons learned can help improve both future projects and future stages of current projects.

78.   While each Project Board captured lessons learned and included them in End Project Report that were maintained on either the Wiki space or shared drive, there is need to enhance the effectiveness of the mechanism in place for cross project collaboration to ensure that lessons learned are shared in an effective and efficient manner across the Organization.

79.   Furthermore, although lessons learned logs of the ERP Portfolio projects are stored on a shared drive, without an agreed nomenclature, it would be difficult to efficiently retrieve the appropriate lessons, potentially hampering efficient management of subsequent projects.

80.   The Audit of Project Management (IA 2016-04) conducted in 2016, also raised issues and made recommendations on the need for better collaboration and sharing lessons learned across all projects in WIPO. IOD reiterates the importance of enhancing these mechanisms, through for instance:

(a)   Enhanced communication between project management stakeholders from various Sectors/areas of the Organization; and

(b)   Full deployment of the ECM tool with a clear documentation nomenclature.

(iv)   <u>Incident Management System</u>

81.   The use of appropriate tools and procedures in managing incidents is an essential element during and after project implementation. The tool should have capabilities by which all incidents are registered and tracked through to resolution as well as retrieval for subsequent reviews.

82.   The Request Management System tool (an internal tool based on Oracle/PeopleSoft®, platform) that was used for registering and tracking incidents or change requests did not allow MAAS to track ERP Portfolio incidents or change requests properly.

83.   MAAS started using a more effective and efficient IT Service Management (ITSM) platform, Cherwell®, in January 2018 after the tool was reconfigured by ICTD. As a result of the time taken to reconfigure the tool, MAAS has taken a longer period to mature its processes and enhance its management of incidents. It is important to recognize that Incident management is a key component of an effective ITSM system.

Recommendation(s)

3.   The Administration and Management Sector, in particular, the Enterprise Architecture and ICT Program Management Division and the Conference and General Services Division should develop a common nomenclature for classifying, filing and archiving relevant project documentation to be adopted for all WIPO projects including the ERP projects; in order to ensure that project documentation in the Enterprise Content Management (ECM) system is standardized, valid, accurate, and complete.
(Priority: Medium)

(C)   PROJECT CONTROL, ASSURANCE, AND SUPPORT ACTIVITIES

84.   The ERP Portfolio was independently verified[8] in 2013 and 2016 by an independent external provider - Gartner Consulting. The focus of the 2013 review was to establish that appropriate governance, quality assurance and control efforts for WIPO's ERP Portfolio were in place; as well as management processes to capture and develop solutions, were effective, responsive to changing business needs.

85.   The subsequent review of 2016, sought to verify the effective implementation of recommendations made in the previous verification and exercise. IOD notes that the risk status of some key areas reviewed in 2013 did not improve following the 2016 review.

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[8] Independent Verification and Validation (IV & V)

86.   IOD included some of these key areas (Schedule Management, Organizational Change Management, and Requirements Management) in its review as well as other areas it deemed relevant to review as part of the audit. The following observations would benefit the management of future projects across the Organization.

(i)   Requirements Management

87.   The 2013 and 2016 reviews by Gartner Consulting assessed Requirements Management as a high-risk area, and recommended that a standardized approach be adopted. IOD notes that requirements definition and gathering remain challenges in the management of projects. For example, the Time Management project experienced a two weeks delay as initial testing had identified missed or misunderstood requirements. An exception report was raised with a new timeline, taking into account resource requirements and timeline for delivery of the solution.

88.   Going forward, WIPO would benefit from ensuring that future projects have clear steps to efficiently gather requirements, to further enhance the project design phase, and subsequent execution and delivery. Implementing recommendations made in IOD's Audit of Project Management (IA 2016-04) issued in 2016, would help address this condition.

(ii)   Change Management

89.   Change management is the process, tools and techniques to manage the people side of change, in order to better support the achievement of required business outcomes. This process is normally driven by a Change Manager on the project or portfolio of projects, and is important because it facilitates successful transitions that would result in the adoption and realization of change that comes with the deployment of new systems.

90.   The ERP proposal in 2010 indicated that a Change Manager would be appointed as part of the Project Portfolio Management Office, IOD notes that the ERP Portfolio did not appoint one. Attempts to recruit a Change Manager in 2012 were unsuccessful as a suitable candidate could not be found. However, a Training and Communication Officer was appointed from 2013 to early 2017 as part of the Portfolio. Further, to support the Time management project, a relatively large scale and complex project, HRMD appointed a dedicated Change Manager in 2017.

91.   The approach followed by the AIMS Portfolio Board was to make business owners responsible for change and transition, and resort to a dedicated change resource depending on the size and complexity of the project.

92.   While acknowledging that the above approach has its merits such as fostering commitment and accountability, IOD cautions on the need to ensure that business owners have sufficient training to acquire the right knowledge and skillsets to effectively lead change. IOD made a recommendation in the Audit of Project Management (IA 2016-04) on the need to identify training needs and establish a mechanism to assess project management skills.

(iii)   Completeness of Key Project Documents

93.   Sign-off of Project documents by the Project Board members ensures common agreement and support of the goals, deliverables, and requirements of the project. It also serves as a validation of the project documents when they are reviewed at a later stage.

94.   As per the current practice, once a key project document was signed, a scanned copy of the relevant document was to be filed in the project filing system. A review of Project documents such as Project Initiation Documents, End of Stage reports and End of Project reports, for 10 out of the 20 projects, revealed:

(a)   Inconsistency in signing off project documents. In some cases the final version of the documents were signed off electronically by e-mails and, in others there was no evidence of either electronic or physical signed off. In other cases, the documents were signed off after a considerable period of time, for example on the EPM, Core HR/Payroll, and Recruitment;

(b)   Key dates such as planned dates of completion were not explicitly stated for the Follow-on Actions outlined in the End of Project reports e.g. Self Service and PROdest Projects;

(c)   The Handover of the Projects to Operational Support was not signed off to provide confirmation that that Project Board had in place all necessary operational, maintenance and support services, and that handover and acceptance activities and products have been completed and approved; and

(d)   There were difficulties in establishing the dates when some projects actually went live following completion due to incomplete or no information provided in the End of Project reports, or staggered/gradual approach to Go live

95.   Further, the PIDs, End of Stage and End of Project Reports were not comprehensive in their description of the relevant aspects of the project. For example the Vision, and DSS Transition projects did not have sufficient quantitative information on the financial aspects of the project, or did not sufficiently describe the scope. In addition the tabulation of activities in project reports needs to be made in a sufficiently clear, concise and chronological order.

96.   Going forward, and as a lesson learned for future projects, it is important that key project documents are thoroughly reviewed, signed off appropriately, as this ensures ownership, accountability, and minimizes delays in proceeding to the next stage. In addition, it is imperative that key dates are explicitly stated for Follow-on Actions as this will facilitate better tracking and monitoring of progress against the plan.

97.   IOD made a recommendation on project procedures and standards in the Audit of Project Management (IA 2016-04) issued in 2016. The recommendation is still pending.

(iv)   Project Assurance – Health Checks

98.   In line with the Common Implementation Methodology adopted by the ERP Portfolio, each Project defined the Assurance activities that are going to be conducted, considering factors such as the size, complexity, cost, timeline and risk of the project. In the sample of ten projects reviewed, IOD notes two instances where the ICTD PMO was requested to conduct an independent Health check.

99.   A Health Check can act as a key diagnostic tool that provides a snapshot of the program or project's condition at a point in time. It is practical in projects to have a number of these checks as it's often regarded as a preventative measure. The tool analyzes the performance of the project and its conformance to the original plan and provides a basis for taking timely corrective action.

100.   Although Health checks are currently not mandatory, IOD is of the view that they constitute good practices that support effective project management and assurance, and ensure an objective assessment of the project methodology and its conformance with PRINCE2® standards and practices. IOD would encourage the development of procedures and criteria that determine and budget beforehand, the use of Health checks, whether through the ICTD PMO, or by using external services. The aforementioned criteria would be based on for instance, project size, risk, complexity, and budget.

101. Implementing the recommendation made on project assurance in the Audit of Project Management (IA 2016-04) issued in 2016, would help address this condition.

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ANNEX I: RISK RATING AND PRIORITY OF AUDIT RECOMMENDATIONS

The risk ratings in the tables below are driven by the combination of likelihood of occurrence of events and the financial impact or harm to the organization's reputation, which may result if the risks materialize. The ratings for audit recommendations are based on the control environment assessed during the audit.

Table II.1: Effectiveness of Risks/ Controls and Residual Risk Rating

		Compound Risk Rating (Likelihood x Impact)			
		Low	**Medium**	**High**	**Very High**
Control Effectiveness	**Low**	Low	Medium	High	Very High
	Medium	Low	Medium	High	High
	High	Low	Low	Medium	Medium

Table II.2: Priority of Audit Recommendations

Priority of Audit Recommendations	Residual Risk Rating
Requires Immediate Management Attention	**Very High**
Requires Urgent Management Attention	**High**
Requires Management Attention	**Medium**
Routine in Nature	**Low**