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STUDENT INFORMATION SYSTEM IMPLEMENTATION

Project Plan and Schedule Review

March 18, 2019

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BACKGROUND

Several years ago Orange County Public Schools embarked on a project to upgrade the Student Information System. The new system is designed to consolidate and replace several key systems. A vendor was selected and the work began, but it was cancelled well into the project. A second vendor was chosen and a new project team assembled. At present, the project is underway with a target go-live date in July of this year.

The Internal Audit Department has undertaken to perform a series of strategic assessments designed to focus on specific areas of risk or concern where we can bring value to the district on this project by highlighting risks or suggesting improvements that would help achieve a successful project. By focusing on smaller areas, we can perform and complete our work and submit our findings in a timely manner while the project is still underway.

The first area of our focus is the project plan, schedule and resources.

OBJECTIVE, SCOPE AND METHODOLOGY

Our objective was to review the project plan, including the project schedule, risk registers, resources allocations, user-acceptance testing, training program, and the change management program.

We performed an initial assessment of areas of risk in the project. We interviewed the Executive Director and reviewed the project's history and progress to date including status reports, the project plan, risk register, gap analysis and other information. We reviewed the project schedule and its pertinent parts as of February 25, 2019.

ASSESSMENT FINDINGS

We recognize that a project plan contains estimates of time, resources, and dependencies, and that actual results will deviate from those estimates. However, a plan is most effective when the estimates are based on sound assumptions and include, as much as possible, all project tasks. With the exception of risks not being included in the project plan, our conclusion is that it includes all project tasks. However, the estimates and assumptions used in developing the resource requirements of the plan degrade its reliability as described below.

- Certain resources in the project schedule were over-allocated to various tasks. Of a total of 71 resources assigned in the project, 23 were over-allocated, meaning they were assigned more work to do than could be done in a typical work day. We identified some of the causes of this over-allocated status:

  o 1) A "day" unit was the smallest time unit allocated. Tasks that require less than a day to complete and the resources associated with them would be more accurately measured in hours instead of days. The effect of this condition is that resource requirements are over-estimated for tasks that actually take less than a day to complete.

  o 2) Certain project resources are represented in the plan by their roles, rather than as individuals. These roles represent multiple individuals who serve in the role. The effect of this condition is that resource availability is understated for tasks where multiple individuals are serving in a role assigned to those tasks. When the

actual number of individuals available to serve in a role is applied to a task, it sometimes reduces the resource over-allocation to the point where there is no longer an over-allocation.

Table 1

Example of a resource that is over-allocated after taking into account the number of employees in the role			
Dates:	**2/15/2019**	**2/18/219**	**2/20/2019**
Total Work Hours for this date:	424	512	560
Number of IPS / BPS employees in role:	6	6	6
Hours needed per person to complete the tasks for that date:	70.7	85.3	93.3

Note: The amount of work, or rather, duration of work, was input as a number of "Days" unit and converted to the "Hours" unit by the MS Project software using an 8-hour day. For example, on 2/15/2019, there were 53 tasks assigned to the BPO's for that day. [53 days * 8 hrs/day = 424 Total Work Hours to be performed on that date.]

Result: After dividing the total work hours by the quantity of personnel in the role, 6 IPS / BPS employees, the total resource is still over-allocated.

Table 2

Example of a resource that is not over-allocated after taking into account the number of employees in the role				
Dates:	**2/15/2019**	**2/18/2019**	**2/20/2019**	**2/21/2019**
Total Work Hours for this date:	392	400	320	272
Number of BPO's in role:	76	76	76	76
Hours needed per person to complete the tasks for that date:	5.2	5.3	4.2	3.6

Note: The amount of work, or rather, duration of work, was input as a number of "Days" unit and converted to the "Hours" unit by the MS Project software using an 8-hour day. For example, on 2/15/2019, there were 49 tasks assigned to the BPO's for that day. [49 days * 8 hrs/day = 392 Total Work Hours to be performed on that date.]

Result: After dividing the total work hours by the quantity of personnel in that role, 76 BPO employees, the total resource is not over-allocated.

- The project's Risk Register as of 2/26/19 did not include information that could have made it more effective, namely:
    - o 1) the date the risk was identified (56 of 62 risks were blank);
    - o 2) the date the risk was resolved (the 32 closed risks did not track this); or,
    - o 3) the estimated risk cost (none of the 62 risks had an associated cost).

In addition, risks are not attached to the project schedule, meaning that time and resources needed to address the risks are not included and the impact on the schedule is not reflected in it. The effect of this condition is that project resource requirements are under-stated.

<u>RECOMMENDATIONS</u>

We recommend that:

1) Resource allocations to tasks should be more accurate. In the future, use the MS Project application more precisely to get a more accurate picture of the use of resources and where they fall short by a) using the "Hours" unit where applicable instead of "Days" unit; and b) when using Roles to represent a class of employees as a resource, adjust the "Units" field in "Resource Availability" table under the "General" tab in the "Resource Information" dialog box to reflect the number employees represented by the Role used (e.g. "IPS / BPS" role would have 600% [6 employees @ 100%])

2) Integrate the Risk Register into the MS Project Plan to reflect a more accurate and complete project state and to track what tasks the Project Team has done to address those risks that have an impact on the Project. For example, if a risk is identified that will cause a delay in the project and a solution to it has also been identified, create a task on MS Project. Detail the solution and add a reference to the Risk Register on the MS Project file (perhaps the Risk ID on the task description or creating a column on the MS Project file asking if it is related to the Risk Register) so it can be tracked. In addition, if that risk has a cost to it that was not budgeted, a column can be added to the Risk Register or MS Project file detailing the cost.

We wish to thank the staff of Student Information System and Projects for their cooperation and assistance during the assessment. We would be pleased to provide additional information to the project team if requested.

Luis E. Aponte Santiago, IT Auditor
Jan Skjersaa, CPA, Internal Auditor

AUDIT RESPONSE MATRIX   FISCAL PERIOD: __2018-2019_____

DEPARTMENT/SCHOOL:	Student Information System and Projects
ADMINISTRATOR/PRINCIPAL:	John Davis
DEPARTMENT HEAD/AREA SUPERINTENDENT:	Kathy Shuler

SIS SCHEDULE REVIEW

Exception Noted	Management Response	Responsible Person	Outcome Timeline
What is? What should be?	What needs to be done?	Who needs to do it?	When will the action be completed? What is the evidence of completion?
Resource allocations to tasks be more accurate. Use the MS Project application more precisely to get a more accurate picture of the use of resources and where they fall short by a) using the "Hours" unit where applicable instead of "Days" unit; and b) when using Roles to represent a class of employees as a resource, adjust the "Units" field in "Resource Availability" table under the "General" tab in the "Resource Information" dialog box to reflect the number employees represented by the Role used (e.g. "IPS / BPS" role would have 600% [6 employees @ 100%])	During the transfer of this project from ITS to Teaching and Learning, the project team was told to implement the project using the "OCPS PMO Standards and Procedures" document. These items were not identified as requirements in that document. At the time of project transfer, it was stated that this document was the standard to be used by the Audit department.

a) The "Duration" days in the Skwyard project plan are based off of the Start and End Dates of each specific task. These duration days are only an estimate, since the project team does not know how long each task will take until that task has been completed.

b) In the twice per week Project Plan meetings, tasks are broken out by individuals. At that time, the individual responsible for each specific task, reports the progress on the task. The Resource reports from MS Project software are not used as reporting tools for this project. All resources for this project are | Senior Director PMO-ITS

Project Manager-SISP

Executive Director-SISP | ASAP – This item will be completed when the requirements from these findings are added to "OCPS PMO Standards and Procedures" document.

Project Implementation Completion – This item will be completed on 10/16/2019 when all tasks in the project plan have been completed.

Ongoing. Late tasks reports are provided to team leaders and executive leadership on a weekly basis. |

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	administrators, so the expectation is that tasks are completed on time, regardless of the amount of time that each task would take. It was understood (and identified as an accepted risk) before actual project work started, that there would be overallocation of work for IPSs/BPSs and BPOs in this project. The count of tasks which have not been completed by the due date of the task, is the measurement metric which is being used for resource reporting for this project. Those late tasks are identified by the Resource teams found in the project plan. The reports of late tasks are provided to the leaders of these resource teams and the executive leadership of the project on a regular basis.		
Integrate the Risk Register into the MS Project Plan to reflect a more accurate and complete project state and to track what tasks the Project Team has done to address those risks that have an impact on the Project. For example, if a risk is identified that will cause a delay in the project and a solution to it has also been identified, create a task on MS Project. Detail the solution and add a reference to the Risk Register on the MS Project file (perhaps the Risk ID on the task description or creating a column on the MS Project file asking if it is related to the Risk Register) so it can be tracked. In addition, if that risk has a cost to it that was not budgeted, a column can be added to the Risk Register or MS Project file detailing the cost.	During the transfer of this project from ITS to Teaching and Learning, the project team was told to implement the project using the "OCPS PMO Standards and Procedures" document. These items were not identified as requirements in that document. At the time of project transfer, it was stated that this document was the standard to be used by the Audit department. There were 33 risks identified when the project transitioned to TL and none of them had either the identification date, nor the resolution date (because there were no columns in the spreadsheet for these dates).	Senior Director PMO-ITS	ASAP – This item will be completed when the requirements from these findings are added to "OCPS PMO Standards and Procedures" document and the Risk Register template.
	Some risks are directly related to tasks in the project plan, while other risks are not directly related to any tasks in the project plan. An example of this is the overallocation of IPSs & BPOs and the environmental conditions of a past training location.	Project Manager-SISP	Project Implementation completion – This item will be completed on 10/16/2019 when the project is finished. There will be a mitigation plan or acceptance of each risk.

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	Going forward, when a new risk is identified, the Project Manager will identify the Risk Register identification number in a task note in the project plan - where there is a corresponding task associated with that specific risk. Risks are reviewed with executive leadership in the Leads and Teaching and Learning Executive Steering Team meetings on a regular basis. It was not identified in the "OCPS PMO Standards and Procedures document that the costs of risks was required to be included in the project plan. Many risks do not have a direct funding impact. A cost column will be added to the Risk Register and any risk that has a direct funding requirement will have the cost added.		