IT Questions (Performance Management)

Chartered Professional Accountants of Canada, CPA Canada, CPA
are trademarks and/or certification marks of the Chartered Professional Accountants of Canada.
© 2019, Chartered Professional Accountants of Canada. All Rights Reserved.
2021-04-14

IT QUESTIONS (PERFORMANCE MANAGEMENT)

Question 1

Which of the following is the step in the systems development life cycle (SDLC) at which an organization has become committed to a new system?

a) Planning
b) Analysis
c) Implementation
d) Design/development

Question 2

Which of the following terms refers to a system implementation where the new system is rolled out to a small group of users for testing and evaluation?

a) Phased conversion
b) Simultaneous conversion
c) Parallel conversion
d) Pilot conversion

Question 3

Which of the following lists the stages of a waterfall model of systems development in the correct linear order?

a) Planning, implementation, testing, maintenance
b) Planning, development, design, testing
c) Design, development, testing, implementation
d) Requirements analysis, planning, implementation, testing

Question 4

Healthline (HL) is a publicly funded health service, staffed by registered nurses, that offers advice 24 hours per day on health- and illness-related questions. Its purpose is to provide medical consultations on routine matters for individuals who do not have access to a family doctor and aren't sure if an emergency room visit is necessary. If needed, HL can also dispatch emergency services, such as an ambulance or a police officer. HL is currently using an outdated information system to track inquiries and log calls.

Required:

When designing and developing a new system, what special considerations does HL need to keep in mind? How would HL's approach to implementation differ from that of other types of businesses?

Question 5

David is the CEO of a provincial health care authority. The authority has consistently been rated in the bottom quartile of health care providers in the country for the past several years. It is generally agreed that one of the reasons for this is a lack of IT available for use by medical professionals and the authority's administrators. David would like to implement a major change within the authority that he believes will positively impact patient outcomes. The change would involve: (1) implementation of new technology — an enterprise resource planning system (ERP) and (2) extensive training for front line medical professionals and administrators.

Required:

Discuss the project planning principles that the health care authority should consider from both strategic and risk perspectives when undertaking this major project.

Solutions

Solution to Question 1

Option d) is **correct**. The design/development stage is when the organization begins to specify in detail the features and operations that will satisfy the functional requirements, investing significant resources to ensure all user needs are met. The development stage signifies the start of production. It is characterized by instillation and change.

Solution to Question 2

Option d) is **correct**. A pilot conversion is a hardware or software migration method that involves rolling out the new system to a small group of users for testing and evaluation. During the pilot implementation, the test group users can provide valuable feedback on the system to make the eventual rollout to all users go more smoothly.

Solution to Question 3

Option c) is **correct**. The importance of the waterfall model is the sequential linear flow from phase to phase with the clear milestones and signoffs. The seven common stages (in order) are planning, requirements analysis, design, development, testing, implementation, and maintenance.

Solution to Question 4

HL has unique needs based on the urgency of the response it provides and the potential threat to people's lives if HL's systems are not operating properly. From a control perspective, HL needs to ensure that any new system has guaranteed reliability and that effective controls are in place to ensure the integrity of the data being captured and relied on by staff who are guiding the public.

From a strategic perspective, HL can use an updated system to enhance its services to the community. Perhaps it can incorporate more online tools to provide general information and education to help concerned citizens self-assess their own issues. Another possibility may be tracking where calls are coming from. If there is a high incidence of calls from one area, it may indicate inadequate medical resources in that area, and the provincial government may need to begin some targeted recruiting in the area.

From a quality perspective, integration with the province's medical records system would be beneficial in helping assess a caller's medical history and prescription drug usage. This additional information could provide valuable insight into the caller's symptoms and allow HL's nurses to more accurately diagnose conditions and make appropriate recommendations.

A key difference in the approach taken by HL versus that of other businesses is that HL is more likely to run a parallel conversion system than other businesses. Because of the critical nature of HL's service, the added cost is justified to make sure that the new

system is working and reliable before the old system is discontinued. HL's approach will be slow and steady; thus, the traditional waterfall method is more likely to be used than agile methodologies. HL would benefit from using the SDLC — planning, analysis, design and development, implementation, maintenance — to provide a process to recognize user needs followed by an analysis of the system features required to meet those needs.

Solution to Question 5

The health authority's ERP project may be defined as an important temporary undertaking (although it also has long-term implications) to create a distinct, deliverable piece of IT infrastructure. The authority cannot afford to fail in its implementation of the ERP in terms of monetary cost, time spent by employees, and reputation. Therefore, a strong project management process will be necessary for the ERP implementation.

The first step will be to determine the goals and objectives of the project as defined by the authority's governing board. Two important items related to project management are project deliverables and project milestones. To prepare these, the requirements of the board should be considered. The project manager needs to ensure that the timing of the milestones is both realistic (with a time allowance for unexpected contingencies) and well-coordinated.

The ERP project manager must clarify with the CEO what specific deliverables are expected. The authority's administrators and medical staff who will be using the software should also be consulted. During the strategic selection phase, the project manager will work with project stakeholders. This may include physicians, nurses, and patients in addition to the authority's administrators, IT specialists, and operational staff. This will help ensure that the project aligns with the overall goals and objectives of the authority.

As CEO, David should provide visible leadership as the main executive stakeholder. This would ensure that the project is adequately resourced and that the project maintains its strategic focus. Other needed aspects of project planning would include:

- a formal project plan document — approved by the authority's governing board
- a project scope definition — signed-off by the CEO
- a list of project tasks and activities
- a project schedule, including time and cost estimates to be included in the budget
- a list of project resources (human and capital)
- assignment of project roles and responsibilities

Experience with ERP systems implementations indicates that the project scope is one of the most important parts of project planning. Because the health care authority is in the bottom quartile of performance, there is a strong likelihood that many stakeholders

will seek additional IT improvements that may not be core to the project. This creates a great potential for “scope creep” or “scope drift.” The ERP project should not be allowed to veer too far off the agreed-upon deliverables (although some flexibility may be necessary).

The objectives of the new ERP must be both understandable and measurable. The metrics used in measuring the project objectives may include cost, time, and items related to patient care quality such as wait times, revisits, and employee satisfaction. Given the high failure rate of ERP implementations, the health care authority should insist on the development of contingency plans and a communication strategy. The plan should also specify the conditions for a “kill switch,” which triggers the potential shutdown of a project before it is completed. The health care authority’s board itself would have to be directly involved in such a drastic decision.

Two key tools used in project planning are project evaluation and review technique (PERT) and Gantt charts. These can be used to monitor the project execution phase to continuously update the projected completion date.