

## Exam A

### QUESTION 1

Please read this scenario prior to answering the question

Your role is that of a senior architect, reporting to the Chief Enterprise Architect, at a medium-sized company with 400 employees. The nature of the business is such that the data and the information stored on the company systems is their major asset and is highly confidential.

The company employees travel extensively for work and must communicate over public infrastructure using message encryption, VPNs, and other standard safeguards. The company has invested in cybersecurity awareness training for all its staff. However, it is recognized that even with good education as well as system security, there is a dependency on third-party suppliers of infrastructure and software.

The company uses the TOGAF standard as the method and guiding framework for its Enterprise Architecture (EA) practice. The CTO is the sponsor of the activity.

The Chief Security Officer (CSO) has noted an increase in ransomware (malicious software used in ransom demands) attacks on companies with a similar profile. The CSO recognizes that no matter how much is spent on education, and support, it is likely just a matter of time before the company suffers a significant attack that could completely lock them out of their information assets.

A risk assessment has been done and the company has sought cyber insurance that includes ransomware coverage. The quotation for this insurance is hugely expensive. The CTO has recently read a survey that stated that one in four organizations paying ransoms were still unable to recover their data, while nearly as many were able to recover the data without paying a ransom. The CTO has concluded that taking out cyber insurance in case they need to pay a ransom is not an option.

Refer to the scenario

You have been asked to describe the steps you would take to improve the resilience of the current architecture?

Based on the TOGAF standard which of the following is the best answer?

- A. You would determine business continuity requirements, and undertake a gap analysis of the current Enterprise Architecture. You would make recommendations for change requirements to address the situation and create a change request. You would manage a meeting of the Architecture Board to assess and approve the change request. Once approved you would produce a new Request for Architecture Work to activate an ADM cycle to carry out a project to define the change.

- B. You would monitor for technology changes from your existing suppliers that could improve resilience. You would prepare and run a disaster recovery planning exercise for a ransomware attack and analyze the performance of the current Enterprise Architecture. Using the findings, you would prepare a gap analysis of the current Enterprise Architecture. You would prepare change requests to address identified gaps. You would add the changes implemented to the Architecture Repository.
- C. You would ensure that the company has in place up-to-date processes for managing change to the current Enterprise Architecture. Based on the scope of the concerns raised you recommend that this be managed at the infrastructure level. Changes should be made to the baseline description of the Technology Architecture. The changes should be approved by the Architecture Board and implemented by change management techniques.
- D. You would request an Architecture Compliance Review with the scope to examine the company's resilience to ransomware attacks. You would identify the departments involved and have them nominate representatives. You would then tailor checklists to address the requirement for increased resilience. You would circulate to the nominated representatives for them to complete. You would then review the completed checklists, identifying and resolving issues. You would then determine and present your recommendations.

**Correct Answer: A**

## QUESTION 2

Please read this scenario prior to answering the question

You are serving as the Lead Architect for an Enterprise Architecture team within a leading multinational biotechnology company. The company works in three major industries, including healthcare, crop production, and agriculture. Your team works within the healthcare division.

The healthcare division is developing a new vaccine, and has to demonstrate its effectiveness and safety in a set of clinical trials that satisfy the regulatory requirements of the relevant health authorities. The clinical trials are undertaken by its research laboratories at multiple facilities worldwide. In addition to internal research and development activities, the healthcare division is also involved in publicly funded collaborative research projects with industrial and academic partners.

The Enterprise Architecture team has been engaged in an architecture project to develop a secure system that will allow the healthcare researchers to share information more easily about their clinical trials, and work more collaboratively across the organization and also with its partners. This system will also connect with external partners.

The Enterprise Architecture team uses the TOGAF ADM with extensions required to support healthcare manufacturing practices and laboratory practices. Due to the highly sensitive nature of the information that is managed, special care has been taken to ensure that each architecture domain considers the security and privacy issues that are relevant.

The Vice President for Worldwide Clinical Research is the sponsor of the Enterprise Architecture activity. She has stated that disruptions must be minimized for the clinical trials, and that the rollout must be undertaken incrementally.

Refer to the scenario

You have been asked to recommend the approach to identify the work packages for an incremental rollout meeting the requirements.

Based on the TOGAF standard which of the following is the best answer?

- A. You recommend that the Solution Building Blocks from a Consolidated Gaps, Solutions and Dependencies Matrix be grouped into a set of work packages. Using the matrix as a planning tool, regroup the work packages to account for dependencies. Sequence the work packages into the Capability Increments needed to achieve the Target Architecture, so that the implementation team can schedule the rollout one region at a time to minimize disruption. Document the work packages for the Enterprise Architecture using a Transition Architecture State Evolution Table.
- B. You recommend that a Consolidated Gaps. Solutions and Dependencies Matrix is used as a planning tool for creating work packages. For each gap classify whether the solution is either a new development, purchased solution, or based on an existing product. Group the similar solutions together to define the work packages. Regroup the work packages into a set of Capability Increments to transition to the Target Architecture considering the schedule for clinical trials, and document in an Architecture Definition Increments Table.
- C. You recommend that an Implementation Factor Catalog is drawn up to indicate actions and constraints. A Consolidated Gaps. Solutions and Dependencies Matrix should also be created. For each gap. identify a proposed solution and classify it as new development, purchased solution, or based on an existing product. Group similar activities together to form work packages. Identify dependencies between work packages factoring in the clinical trial schedules. Regroup the work packages into a set of Capability Increments scheduled into a series of Transition Architectures.
- D. You recommend that the set of required Solution Building Blocks be determined by identifying those which need to be developed and which need to be procured. Eliminate any duplicates. Group the remaining Solution Building Blocks together to create the work packages using a CRUD (create, read, update, delete) matrix. Rank the work packages and select the most cost-effective options for inclusion in a series of Transition Architectures. Schedule the roll out of the work packages to be sequential across the geographic regions.

**Correct Answer: B**

## QUESTION 3

Please read this scenario prior to answering the question

You are the Lead Enterprise Architect at a major agribusiness company. The company's main harvest is lentils, a highly valued food grown worldwide. The lentil parasite, broomrape, has been an increasing concern for many years and is now becoming resistant to chemical controls. In addition, changes in climate favor the propagation and growth of the parasite. As a result, the parasite cannot realistically be exterminated, and it has become pandemic, with lentil yields falling globally.

In response to the situation, the CEO has decided that the lentil fields will be used for another harvest. The company will also cease to process third-party lentils and will repurpose its processing plants. Thus, the target market will change, and the end-products will be different and more varied.

The company has recently established an Enterprise Architecture practice based on the TOGAF standard as method and guiding framework. The CIO is the sponsor of the activity. A formal request for architecture change has been approved. At this stage there is no fixed scope, shared vision, or objectives.

Refer to the scenario

You have been asked to propose the best approach for architecture development to realize the CEO's change in direction for the company.

Based on the TOGAF standard which of the following is the best answer?

- A. You propose that this engagement define the baseline Technology Architecture first in order to assess the current infrastructure capacity and capability for the company. Then the focus should be on transition planning and incremental architecture deployment. This will identify requirements to ensure that the projects are sequenced in an optimal fashion so as to realize the change.
- B. You propose that the team uses the architecture definition document and focus on architecture development starting simultaneously phases B, C and D. This is because the CEO has identified the need to change. This will ensure that the change can be defined in a structured manner and address the requirements needed to realize the change.
- C. You propose that the team focus on architecture definition including development of business models, with emphasis on defining the change parameters to support this new business strategy that the CEO has identified. Once understood, the team will be in the best position to identify the requirements, drivers, issues, and constraints for the change.
- D. You propose that the priority is to produce a new Request for Architecture Work leading to development of a new Architecture Vision. The trade-off method should be applied to identify and select an architecture satisfying the stakeholders. For an efficient change the EA team should be aligned with the organization's planning, budgeting, operational, and change processes.

**Correct Answer: D**

#### QUESTION 4

Please read this scenario prior to answering the question

You are the Lead Enterprise Architect at a major agribusiness company. The company's main annual harvest is lentils, a highly valued food grown worldwide. The lentil parasite, broomrape, has been an increasing concern for many years and is now becoming resistant to chemical controls. In addition, changes in climate favor the propagation and growth of the parasite. As a result, the parasite cannot realistically be exterminated, and it has become pandemic, with lentil yields falling globally.

The CEO appreciates the seriousness of the situation and has set out a change in direction that is effectively a new business for the company. There are opportunities for new products, and new markets. The company will use the fields for another harvest and will cease to process third-party lentils. Thus, the target market will change, and the end-products will be different and more varied. This is a major decision and the CEO has stated a desire to repurpose rather than replace so as to manage the risks and limit the costs.

The company has a mature Enterprise Architecture practice based in its headquarters and uses the TOGAF standard as the method and guiding framework. The practice has an established Architecture Capability, and uses iteration for architecture development. The CIO is the sponsor of the activity.

The CIO has assigned the Enterprise Architecture team to this activity. At this stage there is no shared vision, or requirements.

Refer to the scenario

You have been asked to propose the best approach for architecture development to realize the

CEO's change in direction for the company.

Based on the TOGAF standard which of the following is the best answer?

- A. You propose that the team focus on architecture definition, with emphasis on defining the change parameters to support this new business strategy that the CEO has identified. Once understood, the team will be in the best position to identify the requirements, drivers, issues, and constraints for the change. You would ensure that the architecture development addresses non-functional requirements to assure that the target architecture is robust and secure.
- B. You propose that this engagement define the baseline Technology Architecture first in order to assess the current infrastructure capacity and capability for the company. Then the focus should be on transition planning and incremental architecture deployment. This will identify requirements to ensure that the projects are sequenced in an optimal fashion so as to realize the change.
- C. You propose that the priority is to understand and bring structure to the definition of the change. The team should focus iteration cycles on a baseline first approach to architecture development, and then transition planning. This will identify what needs to change in order to transition from the baseline to the target, and can be used to work out in detail what the shared vision is for the change.
- D. You propose that the team focus its iteration cycles on architecture development by going through the architecture definition phases (B-D) with a baseline first approach. This will support the change in direction as stated by the CEO. It will ensure that the change can be defined in a structured manner and address the requirements needed to realize the change.

**Correct Answer: C**

## QUESTION 5

Please read this scenario prior to answering the question

Your role is that of a consultant to the Lead Enterprise Architect to an international supplier of engineering services and automated manufacturing systems. It has three manufacturing plants where it assembles both standard and customized products for industrial production automation. Each of these plants has been operating its own planning and production scheduling systems, as well as applications and control systems that drive the automated production line.

The Enterprise Architecture department has been operating for several years and has mature, well-developed architecture governance and development processes that are based on the TOGAF Standard. The CIO sponsors the Enterprise Architecture.

During a recent management meeting, a senior Vice-President highlighted an interview where a competitor company's CIO is reported as saying that their production efficiency had been improved by replacing multiple planning and scheduling systems with a common Enterprise

Resource Planning (ERP) system located in a central data center. Some discussion followed, with the CIO responding that the situations are not comparable, and the current architecture is already optimized.

In response, the Architecture Board approved a Request for Architecture Work covering the investigations to determine if such an architecture transformation would lead to improvements in efficiency. You have been assigned to support the architecture team working on this project.

A well-known concern of the plant managers is about the security and reliability of driving their planning and production scheduling from a remote centralized system. Any chosen system would also need to support the current supply chain network consisting of local partners at each of the plants.

Refer to the scenario

You have been asked to explain how you will initiate the architecture project.

Based on the TOGAF Standard, which of the following is the best answer?

- A. You would research vendor literature and conduct a series of briefings with vendors that are on the current approved supplier list. Based on the findings from the research, you would define a preliminary Architecture Vision including summary views, high-level requirements, and high-level definitions of the baseline and target environments from a business, information systems, and technology perspective. You would then use that to build consensus among the key stakeholders.
- B. You would conduct a pilot project that will enable vendors to demonstrate potential off-the-shelf solutions that address the concerns of the stakeholders. Running a pilot project will save time and money later in the process. Based on the findings of that pilot project, a complete set of requirements can then be developed that will drive the evolution of the architecture. Once the requirements are completed, a formal stakeholder review should be held, and permission sought to proceed to develop the target architecture.
- C. You would hold a series of interviews at each of the manufacturing plants using the business scenarios technique. This will allow you to understand the systems and integrations with local partners. You would use stakeholder analysis to identify key players in the engagement, and to understand their concerns. You will then identify and document the key high-level stakeholder requirements for the architecture. You will then generate high level definitions of the baseline and target architectures.
- D. You would develop baseline and target Architectures for each of the manufacturing plants, ensuring that the views corresponding to selected viewpoints address key concerns of the stakeholders. A business case, together with performance metrics and measures should be defined to ensure the architecture meets the business needs. A consolidated gap analysis between the architectures will then validate the approach and determine the capability increments needed to achieve the target state.

**Correct Answer: C**

## QUESTION 6

Please read this scenario prior to answering the question

Your role is consultant to the Lead Architect within a multinational company that manufactures electronic components. The company has several manufacturing divisions located worldwide and a complex supply chain. After a recent study, senior management have stated a concern about business efficiency considering the company's multiple data centers and duplication of applications.

The company has a mature Enterprise Architecture (EA) practice and uses the TOGAF architecture development method in its EA practice. In addition to the EA program, the company has several management frameworks in use, including business planning, project/portfolio management, and operations management. The EA program is sponsored by the CIO.

A strategic architecture has been defined to improve the ability to meet customer demand and improve management of the supply chain. The strategic architecture includes the consolidation of multiple Enterprise Resource Planning (ERP) applications that have been operating independently in the divisions' production facilities.

Each division has completed the Architecture Definition documentation to meet its own specific manufacturing requirements. The enterprise architects have defined a set of work packages that address the gaps identified.

They have identified the value produced, effort required, and dependencies between work packages to reach a target architecture that would integrate a new ERP environment into the company.

Because of the risks posed by change from the current environment, the architects have recommended that a phased approach occurs to implement the target architecture with several transition states. The overall implementation process is estimated to take several years.

Refer to the scenario

You have been asked what the next steps are for the migration planning.

Based on the TOGAF standard which of the following is the best answer?

- A. You conduct a series of Compliance Assessments to ensure that the architecture is being implemented according to the contract. The Compliance Assessment should verify that the implementation team is using the

proper development methodology. It should include deployment of monitoring tools and ensure that performance targets are being met. If they are not met, then you would identify changes to performance requirements and update those in the Implementation and Migration Plan.

- B. You place the Architecture Definition Document under configuration control. This will ensure that the architecture remains relevant and responsive to the needs of the enterprise. You would identify the development resources to undertake the projects. You would then produce an Implementation Governance Model to manage the lessons learned prior to finalizing the plan. You recommend that lessons learned be applied as changes to the architecture without review.
- C. You estimate the business value for each project by applying the Business Value Assessment Technique to prioritize the implementation projects and project increments. The assessment should focus on return on investment and performance evaluation criteria that can be used to monitor the progress of the architecture transformation. You would confirm and plan a series of Transition Architecture phases using an Architecture Definition Increments Table that lists the projects.
- D. You assess how the Implementation and Migration plan impacts the other frameworks in use in the organization. Minimally, you ensure that the plan is coordinated with the business planning, project/portfolio management and operations management frameworks. You would then assign a business value to each work package, considering available resources and strategic fit. You then use the work packages to identify projects that will be in the Implementation and Migration Plan

**Correct Answer: C**

#### QUESTION 7

Please read this scenario prior to answering the question

You are working as Chief Enterprise Architect at a large Internet company. The company has many divisions, ranging from cloud to logistics. The company has grown rapidly, expanding from initially selling physical books and media to a range of services including an online marketplace, live-streaming, eBooks. and cloud services.

Overall management of the numerous divisions has become challenging. Recent high-profile projects have overrun on budget and under delivered, damaging the company's reputation, and adversely impacting its share price. There is a widely held view within the executive management that the organization structure has played a major role in these project failures.

The company has an established Enterprise Architecture program based on the TOGAF standard, sponsored jointly by the Chief Executive Officer (CEO) and Chief Information Officer (CIO). The CEO has decided that the company needs to reorganize its divisions around artificial intelligence and machine learning with a focus on automation. The CEO has worked with the Enterprise Architects to create a strategic architecture for the reorganization, including an Architecture Vision, together with definitions for the four domain architectures. This sets out an ambitious vision of the future of the company over a three-year period. This includes a set of work packages and includes three distinct transformations.

The CIO has made it clear that prior to the approval of the detailed Implementation and Migration plan, the EAteam will need to assess the risks associated with the proposed architecture. He has received concerns from key stakeholders across the company that the proposed reorganization may be too ambitious and there is doubt whether it can produce sufficient value to warrant the risks.

Refer to the scenario

You have been asked to recommend an approach to satisfy these concerns. Based on the TOGAF Standard, which of the following is the best answer?

- A. The Enterprise Architects should evaluate the organization's readiness to undergo change. This will allow the risks associated with the transformations to be identified, classified, and mitigated for. This should include identifying dependencies between the set of changes, including gaps and work packages. It will also identify improvement actions to be worked into the Implementation and Migration Plan. The business value, effort, and risk associated for each transformation should be determined.
- B. The Enterprise Architects should bring together information about potential approaches and produce several alternative target transition architectures. They should then investigate the different architecture alternatives and discuss these with stakeholders using the Architecture Alternatives and Trade-offs technique. Once the target architecture has been selected, it should be analyzed using a state evolution table to determine the Transition Architectures. A value realization process should then be established to ensure that the concerns raised are addressed.
- C. Establishing interoperability in alignment with the corporate operating model will ensure risks are minimized. The Enterprise Architects should apply an interoperability analysis to evaluate any potential issues across the architecture. This should include the development of a matrix showing the interoperability requirements. These can then be included within the transformation strategy embedded in the target transition architectures. The Enterprise Architects should then finalize the Architecture Roadmap and the Implementation and Migration Plan.
- D. Before preparing the detailed Implementation and Migration plan, the Enterprise Architects should review and consolidate the gap analysis results from Phases B to This will identify the transformations required to achieve the proposed Target Architecture. The Enterprise Architects should then assess the readiness of the organization to undergo change and determine an overall direction to address and mitigate risks identified. The Transition Architecture should then be planned to use a state evolution table.

**Correct Answer: A**