APPENDIX A

Cloud Adoption Strategy Checklist

You learned in Chapter 13 that the cloud has become the mainstream phenomenon for running digital applications. Digital project managers need to understand the cloud’s suitability for digital applications and define the steps for enabling digital applications on the cloud. This appendix defines a sample checklist for determining how digital applications fit on the cloud and includes the key steps for enabling these applications on the cloud.

The following table shows a sample checklist for determining the cloud suitability of a digital application. You assign a score to each parameter. This example uses a three-scale scoring model, with 1 indicating a negative or minor fit, 2 indicating a medium fit, and 3 indicating a strong fit. A high total score implies that the application is well suited to cloud deployment.

<table>
<thead>
<tr>
<th>Category</th>
<th>Parameter</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure</td>
<td>Is the existing infrastructure fully utilized?</td>
<td>High score if existing infrastructure is less utilized.</td>
</tr>
<tr>
<td></td>
<td>How much of the existing hardware is virtualized (servers abstracted through use of virtual machines)?</td>
<td>High score for high degree of virtualization.</td>
</tr>
<tr>
<td></td>
<td>Is dynamic scalability (on-demand allocation of resources to serve the request) needed for the application?</td>
<td>High score if dynamic scalability is needed.</td>
</tr>
<tr>
<td>Application</td>
<td>How mission-critical is the application?</td>
<td>High business criticality means a low score.</td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>Category</th>
<th>Parameter</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the amount of integration needed</td>
<td>High degree of internal applications means a low score.</td>
<td></td>
</tr>
<tr>
<td>with enterprise applications?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there any privacy needs or compliance</td>
<td>Stricter compliance and regulatory policy mean a low score.</td>
<td></td>
</tr>
<tr>
<td>and regulatory policies about security and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>data sharing?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the application need consistent high</td>
<td>Stricter performance needs and stricter availability needs (such as</td>
<td></td>
</tr>
<tr>
<td>performance and maximum availability?</td>
<td>99.999%) mean a high score.</td>
<td></td>
</tr>
</tbody>
</table>

**Steps for Cloud Deployment**

Here are the detailed steps involved in moving digital applications to the cloud:

- *Infrastructure analysis:* Analyze the dependencies of the application on various infrastructure components, such as enterprise interfaces and internal systems.

- *Analysis of quality parameters:* Compile the list of SLAs for non-functional requirements, such as security, scalability, availability, and performance. The SLAs are usually specified by the business during the requirements elaboration phase. You then use these SLAs for evaluating the cloud plans.

- *Evaluation of cloud options:* During this stage, you identify the applications and services suitable for a public cloud, a private cloud, or a hybrid cloud (which is a combination of a public and private cloud). Applications and services accessed by the general public and by Internet users are best suited for a public cloud. Applications and services that are accessible to a larger community are best suited for a hybrid cloud, and applications and services that are accessible only to internal users and intranet users qualify for a private cloud.
• **Digital application deployment:** Digital applications are deployed and hosted on selected cloud environments. Security and monitoring policies are set up.

• **Governance:** Once the application and services are deployed, they are continuously monitored using the defined SLAs.
APPENDIX B

Domain-Specific Functional Use Cases and Key Business Drivers

The appendix provides functional domain-specific business use cases and business drivers. These insights can be used by a digital project manager to build domain-specific solutions and accelerators to speed up development. The tracking metrics and KPIs can also be designed based on the business drivers.

- Insurance domain
  - **Key use cases**: User registrations, claims processing, premium calculator, quote processing, policy purchases, claim tracker, office locator, customer dashboards, searches, grievance redresses, policy renewals, social integration, collaboration (chat, blog, wiki, community), FAQs, premium payment and policy recommenders, and product management
  - **Key business drivers**: Unified experiences, effective information discovery, and decision making tools

- Retail Banking domain
  - **Key use cases**: User enrollment, account opening, loan processing, product comparator, complaint handling, branch locator, virtual digital banking, card processing, fund transfer, service request handling, e-statements, personalized dashboard, bill payment, reports downloading, and mobile banking
  - **Key business drivers**: Providing industry leading digital experiences and multi-device enablement
Utility domain

- **Key use cases:** Plan comparators (for comparing various service plans), plan recommendations, bill payments, searches, usage history reports, end-user collaboration (blog, wiki, community, and forums), user profile management, plan switching, enterprise integration (billing system, inventory management, order management ERP—Enterprise Resource Planning, and CRM ERP), customer self-service, digital marketing, campaign management, case/incident management, and personalization

- **Key business drivers:** Revenue increase in business channel, enabling self-service, maintenance cost optimization, and increased collaboration

Manufacturing domain

- **Key use cases:** Information consolidation, searches (such as parts finder), user registration, omni-channel access, user administration, single-sign-on, services based integration, web analytics, SEO (search engine optimization), localization, social integration, personalization, knowledge management, content management, taxonomy management, and responsive and interactive user experience development

- **Key business drivers:** Business self-service, efficient information discovery, single-stop-shops through a unified view, consolidation, business process optimization, and process automation

Healthcare/lifesciences domain

- **Key use cases:** Member preference management, claims management, analytics management, provider integration, records management, payment integration, reporting, workflow management, and personalization

- **Key business drivers:** Business self-service, efficient information discovery, provide single-stop-shop through a unified view, consolidation, and business process optimization
Financial Services domain

*Key use cases:* Virtual branches, enterprise integration (with core banking systems, CRM, email servers, risk management systems, card systems, payment gateways, reporting systems, wealth management), transaction management, social integration, authentication and authorization, mobile app experience, collaboration (such as chat, co-browsing), and alerts and notifications

*Key business drivers:* Customer self-service, increase customer lifetime value, enhanced customer support experiences, and holistic dashboard experiences
APPENDIX C

Exit Criteria for Testing Phases

This appendix explains the exit criteria for various testing activities. Project managers can use it as a checklist and as acceptance criteria during testing phases.

Test planning phase:

- All requirements/use cases/user stories are finalized and the integration, data, and migration requirements are finalized.
- Testing metrics and SLAs such as defect resolution time, along with code coverage, are agreed upon and finalized with stakeholders.
- Test planning document is created, reviewed, and signed off by all stakeholders.
- All needed testing tools are identified and set up in the appropriate environments.
- All test scripts are developed.

Unit testing phase:

- All unit test cases are executed successfully.
- Test case coverage meets the specified criteria.
- Unit test cases are automated and are part of the continuous integration process.
APPENDIX C  EXIT CRITERIA FOR TESTING PHASES

Integration testing phase:

- All system test cases are executed successfully.
- Integration defects with a severity of 1 and 2 are fixed and successfully closed.
- Integration defects with a severity of 3 and 4 are either deferred or closed.
- The impact analysis of deferred defects is published.

System testing phase:

- All system test cases are executed successfully.
- System defects with a severity of 1 and 2 are fixed and successfully closed.
- System defects with a severity of 3 and 4 are either deferred or closed.
- The impact analysis of deferred defects is published.
- System test report is published and signed off on.

Performance testing phase:

- All performance test cases are executed successfully.
- All defined performance SLAs are met during performance testing.
- The system's health check parameters (CPU utilization, memory utilization, and disk utilization) are verified to meet the SLAs.
APPENDIX D

Project Scope Document Template

This appendix provides the structure of a typical Project Scope document. It briefly explains each section of the document. A digital project manager can use this as a reference when creating a Project Scope document.

The Project Scope document should include the following items:

- Introduction
  - *Opportunity details:* This section provides the financial details of the project, such as expected revenue, project duration, and such.
  - *Context and background:* This section summarizes the key business drivers and current challenges. The section also provides brief details about the critical success factors, business KPIs, and metrics.
  - *Executive summary:* The summary highlights the business themes, proposed solutions, high-level timelines, and cost. The summary is presented to business stakeholders.

- Project scope
  - *Technical scope:* This section provides the high-level technical scope that will be further detailed in technical documents such as the architecture document and the design document.
  - *Business/functional scope:* This section provides the high-level business requirements that will be further elaborated on in the business requirements document (BRD).
• **Operations scope:** This details any in-scope operations work, such as incident handling, server maintenance, etc.

• **Success criteria:** This defines the key success criteria and the desired end state.

• **Metrics:** This section details the main metrics and KPIs that can be used for tracking and monitoring.

• **Assumptions and constraints:** This section details all the technical and requirement assumptions and constraints.

• **Non-functional/quality criteria:** This section details the non-functional requirements related to performance, scalability, availability, security, etc.

• **Execution approach**

  • **Project execution methodology:** In this section, the project manager details the execution model (such as Agile, iterative, waterfall, etc.).

  • **Project timelines:** This section provides the phase-wise delivery and schedule plan.

  • **Project milestones:** This section describes the major milestones and corresponding payment details.

• **Others**

  • **Stakeholders:** This section lists all the key stakeholders along with their roles and responsibilities.

  • **Compliance standards:** This section provides a list of all compliance standards related to technology.

  • **Legal and regulation rules:** This section lists all the regulations applicable to the digital program (such as data sharing, data storing, data archival, and more).

  • **AS-IS landscape:** This section provides a high-level overview of current systems, processes, and workflows.
CMS Product Evaluation Scorecard

This scorecard provides a list of capabilities needed for a typical content management solution. Solution requirements are grouped into three categories—functional capabilities, technology capabilities, and miscellaneous. Each of the solution requirements should be ranked on a score of 1-10, with 1 denoting full customization and 10 denoting full reuse of out-of-the-box features. The score is the weighted value of the rating. For instance, if the rating is 5 and the weight for that requirement is 50%, then the weighted score is 2.5.

This example scorecard includes three categories. The first level category is divided into three high-level capabilities related to functionality, technology, and operations. Each of these high-level categories includes second-level and third-level categories. The weights have been distributed based on their business importance.

The final score for the CMS product is calculated by taking the total of all the weighted scores. The final score is used to rank the candidate products.

<table>
<thead>
<tr>
<th>Requirement#</th>
<th>Evaluation Parameter</th>
<th>Weights</th>
<th>CMS Product 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rating (1-10)</td>
</tr>
<tr>
<td>Functional Capabilities</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Content Targeting</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Tag content for targeting</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>Search optimization (support for SEO)</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Publishing and workflow</td>
<td>10%</td>
<td></td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>Requirement#</th>
<th>Evaluation Parameter</th>
<th>Weights</th>
<th>CMS Product 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Publishing features (support for staging publishing, support for various publishing formats)</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Workflow features (support for complex workflow modeling)</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Multi Device Support and Responsive Design</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Multi-device support</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>Responsive site design</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Versioning and Archival/Legal Discovery</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>Versioning</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>4.2</td>
<td>Archival/legal discovery</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Access Control</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>5.1</td>
<td>Access control lists</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Separation of Content and Presentation</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>6.1</td>
<td>Ease of content authoring (support for templates, rich text editors, tagging support)</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>6.2</td>
<td>Multi-lingual capabilities</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Content Management</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>7.1</td>
<td>Content standards (support for XML, JSON, HTML, and DITA)</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>7.2</td>
<td>Content reuse</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>7.3</td>
<td>Digital asset management</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>7.4</td>
<td>Layouts/components</td>
<td>2%</td>
<td></td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>Requirement #</th>
<th>Evaluation Parameter</th>
<th>Weights</th>
<th>CMS Product 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Capabilities</td>
<td></td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Integrations</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>8.1</td>
<td>Integration with portal</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Integration with other applications</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Architecture</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>9.1</td>
<td>Product architecture</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>9.2</td>
<td>Customization/APIs</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>9.3</td>
<td>Component library</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>9.4</td>
<td>Hosting (support for cloud)</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>9.6</td>
<td>Installation/configuration</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td></td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Operational</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>10.1</td>
<td>Product roadmap alignment</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>10.2</td>
<td>Analyst ranking</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>10.3</td>
<td>Licensing costs</td>
<td>5%</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX F

Digital Project Process and Governance Best Practices

This appendix looks at the best practices of digital project processes and governance. It covers security, employee engagement, knowledge transition, and code quality.

Security Governance

Based on the functional domain of the application, security gains prominent importance. As a part of robust security governance, the digital project manager has to cover the following aspects:

- **Application security**: Security issues in code, black box and white box testing, secure code reviews, system security, secure design, security checklists, and best practices adherence.
- **Testing**: Penetration testing and vulnerability assessments.
- **Security compliance**: Security audits, security policy setup, and compliance to standards such as Data Security Standard (DSS), Open Web Application Security Project (OWASP), Payment Card Industry (PCI), Common Weakness Enumeration (CWE), and System Admin, Audit, Network, Security (SANS).
- **Operations security**: Secure operations, security related monitoring, and system patching.
Data security: Data encryption, data masking, secure data storing and transmission, and rights management.

Infrastructure security: End point security, setting up virus scanners, server hardening, and any applicable organization-specific security guidelines.

The following table provides various security-related activities that can be carried out in various SDLC phases.

<table>
<thead>
<tr>
<th>SDLC Phase</th>
<th>Security Best Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements elaboration</td>
<td>Gather security requirements</td>
</tr>
<tr>
<td>Architecture and design</td>
<td>Define security principles and create security checklist</td>
</tr>
<tr>
<td>Development</td>
<td>Security reviews and usage of security checklist and secure coding guidelines</td>
</tr>
<tr>
<td>Testing</td>
<td>Security testing, vulnerability testing, and penetration testing</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Security monitoring and system patching</td>
</tr>
</tbody>
</table>

Best Practices During Knowledge Transition

Here are some of the best practices in performing knowledge transition:

- The project manager has to collect all the needed information related to systems such as the technical ecosystem, the incident patterns, and the needed documentation.

- Establish the processes related to knowledge transition such as training, documentation, etc.

- Trained persons to provide reverse knowledge sharing sessions with the team to validate their understanding.

- The project manager has to clearly define the success criteria that includes feedback assessment.
Develop and use centralized knowledge repository.

During ticket handling, trainees can provide shadow support by contributing to the ticket handling, issue resolution, and developing enhancements.

Project manager has to clearly define the SLAs based on the priority of the defects, enhancements, and incidents.

Identify and define gaps and opportunities for continuous improvement.

At the end of knowledge transition, the trainees should be evaluated based on performance assessments.

**Best Practices During Employee Engagement**

Here are some of the best practices in employee engagement:

- Regular interaction of leaders and senior management with employees through open house sessions, all hands meet, live chats, and quarterly town halls.

- Establish open communication channels with employees by enabling employees to freely express their concerns about the organization practices.

- Conduct frequent skill set and technology-related training programs so employees can upgrade their skills.

- Encourage the culture of innovation through various initiatives such as coding challenges, rewarding IP creation, etc.

- Project managers need to provide frequent feedback to employees and understand their concerns and aspirations.

- Conduct “brown bag lunches” with senior management and high-performing employees.

- Conduct employee engagement surveys, whereby employees can freely participate and express their opinions.
System Quality Attributes in Quality Governance

System quality is the key component of the overall project quality governance. The following table includes system quality attributes along with questions that can be used to understand the metric values. Digital project managers can use the tools and questions listed here to track and monitor the overall code quality.

<table>
<thead>
<tr>
<th>System Quality Attribute</th>
<th>Capturing the Attribute Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>Defect rate, availability, and mean time to failure (MTTF)</td>
</tr>
<tr>
<td>Maintainability</td>
<td>Incident rate, production outage frequency, and mean time to repair (MTTR)</td>
</tr>
<tr>
<td>Usability</td>
<td>Average time needed for a new user to learn the system, UI defect rate</td>
</tr>
<tr>
<td>Portability</td>
<td>Compliance to standards</td>
</tr>
<tr>
<td></td>
<td>Test results on supported platforms</td>
</tr>
<tr>
<td>Fault tolerance</td>
<td>Error handling rate</td>
</tr>
<tr>
<td></td>
<td>Mean time to failure (MTTF)</td>
</tr>
<tr>
<td>Performance</td>
<td>Average response time and perceived response time</td>
</tr>
<tr>
<td>Testability</td>
<td>Ease of testing the system, presence of test cases, and availability of automated test setup</td>
</tr>
</tbody>
</table>
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