University of Derby

Cloud migration project for a local accountancy firm

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7CS089 – IT Project Management

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1.0   Project Introduction

The field of modern accounting is changing quickly, and our firm is responding to this dynamic environment by taking a revolutionary step towards cloud adoption. With the help of this project, the company hopes to boost security, scalability, and efficiency by moving its current infrastructure to a cloud-based environment. Our 20-person team depends on the Microsoft Applications Suite, a variety of accountancy programmes, and vital server infrastructure; moving to the cloud will undoubtedly transform our business and keep us at the forefront of cutting-edge financial services.

1.1   Request for Proposal

Our local accountancy firm is inviting proposals for a cloud migration project. We are in need of capable service providers with a focus on cloud services solution to help us smoothly migrate our on-premise infrastructure. Data migration, application implementation, employee training, and continuous maintenance are among the essential needs. Submission of proposals is required by 01/10/2023. For information, get in touch with us at contact_us@accountancysolutions.com.

2.0   Proposal by Microsoft Azure

2.1   About Microsoft Azure

Offering more than 200 products and cloud services, the Azure cloud platform enables you to develop new ideas, overcome obstacles in the present, and shape the future. Create, execute, and oversee applications on-premises, in various clouds, and at the edge using the frameworks and tools of your choosing. Azure is the only reliable hybrid cloud as it offers developer productivity that is unmatched and comprehensive, provides multilayered security, boasts the broadest compliance coverage of any cloud provider, and is available at a lower cost to many other cloud solution providers. In fact, AWS is five times more expensive than Azure for Windows Server and SQL Server. (Microsoft, 2023)

Azure SQL Managed Instance vs SQL Server on AWS RDS MSOLTPE Benchmark
16 Core SQL MI vs AWS RDS db.r5b.4xlarge April 2022

A $13.14   93% LESS

aws $198.45
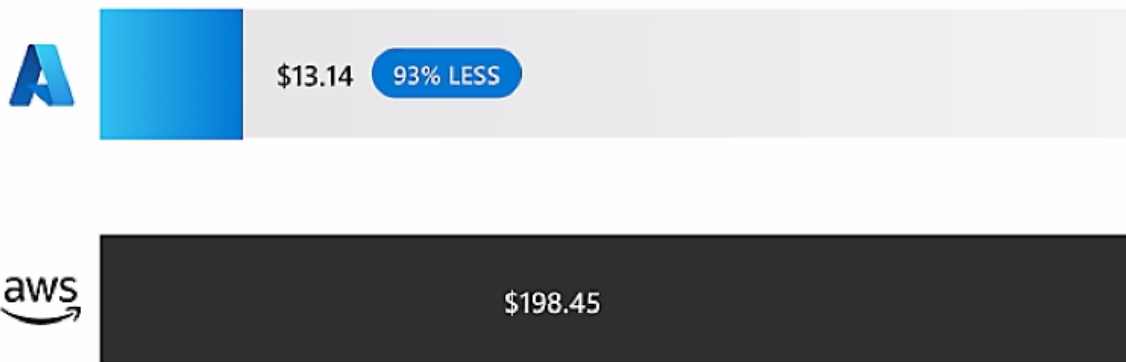
Price/Transactions per second (tps). Price performance comparison. Lower is better. Includes Azure Hybrid Benefit
Source: Principled Technologies, Inc., 2022

Figure 1: Azure vs AWS

2.2   Overview of Client's Infrastructure

We are aware that our client is very interested in payroll services and the recurring accounting business model in addition to compliance work. At the moment, the client's on-premise server lacks redundancy for data backup. The present hardware, software, and users that comprise the client's environment are listed below:

- 20 members of staff using Microsoft Applications Suite: Excel, Word, Outlook, PowerPoint.
- 1 Microsoft SQL Server
- QuickBooks Online – a Tier 5 easy-to-use accounting software
- Microsoft Dynamics GP – versatile mid-market account
- Sage 50 – a robust and fast system with good business analytics
- Microsoft Power BI – an Excel based business intelligence tool
- Windows Server 2012R2 – able to support up to 64 processors and 1 terabyte of memory

2.3   Our Digital Transformation proposal

Microsoft Azure will follow a six-step procedure to actualise the migration of the client's current environment to cloud. Although, specific planning and tools may be needed depending on factors including the types of workloads, the complexity of the current digital estate, and industry or regulatory compliance needs, the six processes are nearly always the same:

- Define strategy.
- Plan: Match corporate objectives with feasible adoption strategies.
- Ready - Get your environment ready for your cloud migration plan.
- Adopt: Transfer your workloads to a cloud-based system.
- Govern: For your environment and workloads, benchmark and put best practices for governance into effect.
- Manage: To manage your cloud and hybrid solutions, employ tried-and-true techniques.

As the firm is a financial services provider, we will suggest the adoption of a hybrid cloud that can provide both Infrastructure-as-a-Service (IaaS) and Software-as-a-Service (SaaS) tools which will unleash limitless potentials of the organisation and its workforce. We can provide the tools below to bring about this change:

Azure Virtual Machines (IaaS) - Provides scalable computing resources, allowing the firm to run virtual servers for accounting applications, data processing, and other workloads.
Azure Blob Storage (IaaS) - Offers scalable and secure storage for financial data, facilitating efficient data management and backup processes.
Azure SQL Database (IaaS) - A managed relational database service that ensures high availability and scalability for handling financial data securely.

Microsoft 365 (SaaS) - Provides a suite of productivity applications, including Excel and Teams, facilitating collaboration, document management, and communication.

Dynamics 365 (SaaS) - Cloud-based business applications for finance and operations, offering tools for accounting, customer engagement, and business process automation.

Azure Logic Apps (SaaS) - Enables the automation of workflows, streamlining repetitive tasks and improving overall operational efficiency.

Power BI (SaaS) - Business analytics service that helps visualise financial data, create reports, and gain insights for better decision-making.

3.0   Proposal by Amazon Web Services

3.1   About Amazon Web Services

Amazon Web Services (AWS) is the most extensive and widely used cloud platform in the world, providing over 200 fully functional services from data centres all over the world. Millions of users are utilising AWS to cut costs, become more flexible, and innovate more quickly. These users include the biggest corporations, fastest-growing startups, and top government agencies. AWS is the world's leading cloud solution provider as it boasts the most functionalities, has the largest community of customers and partners, offers unmatched security to highly sensitive organisations with its over 300 compliance, security and governance features, and it has the most proven operational expertise. ((AWS), 2023)

3.2   Overview of Client's Infrastructure

We understand that our client is not only into compliance business, but has keen interest in recurring accounting business model and payroll services. The client currently has an on-premise server which has no redundancy for data backup. Below is a list of the current software, hardware, and users that make up the client's environment:

- 20 members of staff using Microsoft Applications Suite: Excel, Word, Outlook, PowerPoint.
- 1 Microsoft SQL Server
- QuickBooks Online – a Tier 5 easy-to-use accounting software
- Microsoft Dynamics GP – versatile mid-market account
- Sage 50 – a robust and fast system with good business analytics
- Microsoft Power BI – an Excel based business intelligence tool
- Windows Server 2012R2 – able to support up to 64 processors and 1 terabyte of memory

3.3   Our Digital Transformation proposal

In order to meet the needs of the client, AWS will be implementing the migration of the client's entire applications to the cloud using the AWS Application Migration Service which follows a 5 step approach, which are:

- Map – Do an assessment of the physical or virtual servers to be migrated
- Set-up – Replicate data to the cloud
- Test – Conduct pre-cutover checks with non-disruptive tests
- Migrate – Cutover services and application
- Modernise – Explore optional application modernization features available on cloud.
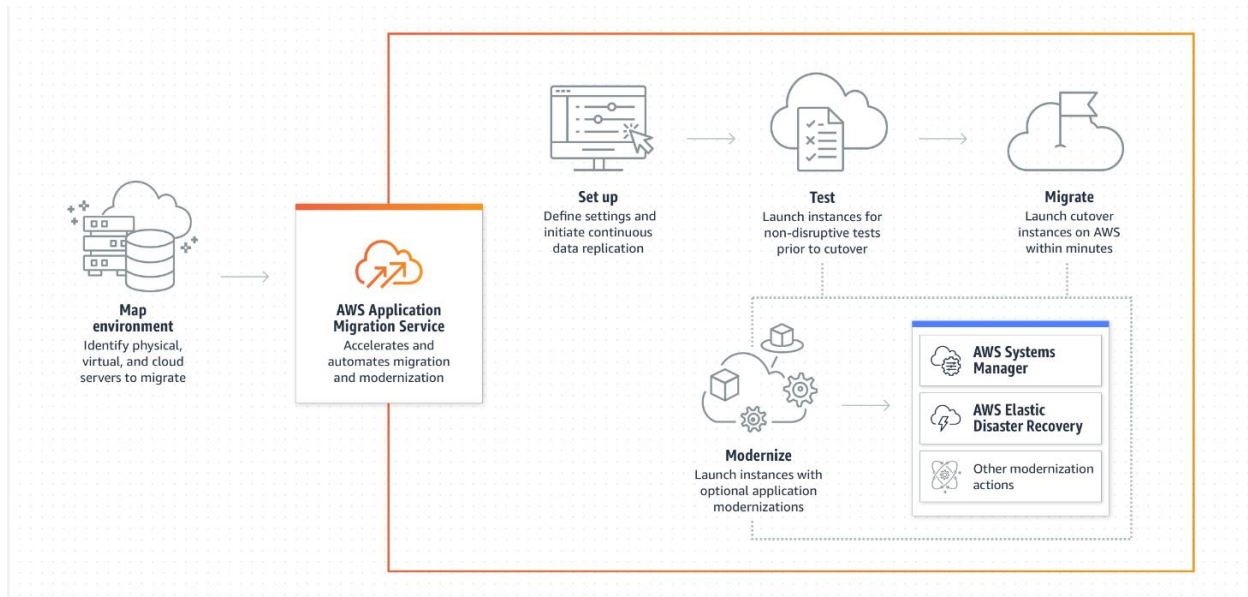
Figure 2: AWS Migration Plan
Source: AWS Application Migration Service

In order for the firm to enjoy all the tremendous features available to financial services institution on AWS, their services will be migrated to a hybrid cloud which will offer both (IaaS) and (SaaS) solutions. This environment will put these versatile tools listed below at the disposal of the client:

Amazon Elastic Compute Cloud (EC2) (IaaS) - Scalable computing capacity for running accounting applications, data processing, and other computational tasks.
Amazon S3 (IaaS) - Object storage for secure and scalable data storage, management of financial records, and backups.
Amazon RDS (IaaS) - Managed relational database service for secure and scalable handling of financial data.
Amazon WorkSpaces (SaaS) - Desktop-as-a-Service (DaaS) for secure access to accounting applications and data from any device.
AWS Lambda (SaaS) - Serverless computing for automating specific accounting tasks or processes.
Amazon Connect (SaaS) - Cloud-based contact center service.

4.0 Justification for Proposal Acceptance

The decision to accept Microsoft Azure's proposal for our cloud migration project is rooted in a thorough evaluation of its comprehensive suite of services, its alignment with our specific accounting needs, and Azure's established reputation for reliability and innovation in cloud computing. Azure not only offers a robust IaaS environment but also a rich set of SaaS applications (Michael Collier, 2015) that seamlessly integrate with our existing Microsoft-centric infrastructure. The scalability, security features, and strong compliance framework of Azure align perfectly with our objectives of modernizing our operations while ensuring data integrity and client confidentiality.

4.1 Project Objectives of Accepted Architecture

The objectives of this chosen architecture is to:
- Migrate 20 staff members to Microsoft Azure's IaaS, ensuring seamless access to Microsoft Applications Suite.
- Transfer the existing Microsoft SQL Server, QuickBooks Online, Microsoft Dynamics GP, Sage 50, Microsoft Power BI, and Windows Server 2012R2 to the Azure cloud.
- Implement Azure Active Directory for enhanced identity and access management.
- Integrate Microsoft Power BI into the Azure environment for advanced data analytics and reporting.
- Ensure data security and compliance with industry regulations.
- Design the cloud infrastructure to be scalable and future-proof.
- Develop and implement a comprehensive training program for staff adaptation.
- Conduct thorough testing and quality assurance to minimise disruption.

4.2 User Groups Identification: Requirements, Expectations, Constraints

Staff Members:
Requirements: Seamless access to Microsoft Applications Suite, training for adapting to the new cloud environment.
Expectations: Improved collaboration, increased flexibility, and ease of access.
Constraints: Potential resistance to change, adaptation learning curve.

IT Department:
Requirements: Secure migration of critical financial applications, implementation of Azure security measures.

Expectations: Smooth transition with minimal downtime, enhanced infrastructure management, regular system updates and bug fixes are readily available.
Constraints: Limited technical experience with cloud environments.

Management:
Requirements: Data security, compliance adherence, scalability for future growth.
Expectations: Improved operational efficiency, cost-effectiveness, system availability (especially during working hours).
Constraints: Potential budget limitations.

4.3   Highlight Available Opportunities

The digital transformation that migration of services to cloud brings is expected to usher in these opportunities:

- **Enhanced Efficiency:** Streamlining operations and improving collaboration through cloud-based Microsoft applications.
- **Scalability:** Azure's scalable infrastructure allows for easy adaptation to growing business needs.
- **Data Security:** Improved security measures in Azure, reducing the risk of data breaches.
- Advanced Analytics: Integration of Microsoft Power BI for advanced data analytics and reporting.
- **Cost Optimisation:** Potential cost savings through Azure's pay-as-you-go pricing model.

4.4   Project's Feasibility Evaluation

Technical Feasibility: Azure provides the technical capabilities, easy-to-use environment, and customer support required for seamless migration and ongoing operations.

Operational Feasibility: Staff training and change management programs ensure smooth adaptation to the new cloud environment.

Economic Feasibility: Cost estimation indicates a favorable return on investment, considering the long-term benefits of improved efficiency and scalability.

4.5   Cost Estimation: Development, Service, and Maintenance

An estimate of the annual cost that will be incurred if Amazon Web Services (AWS) Application Migration Service will be deployed, along with other maintenance, testing and management cost is **£483,507** while the annual cost of using Microsoft Azure Migrate is **£182,412.88.**

Using the pricing calculator provided by Microsoft Azure Migrate Services (Azure Migrate Services, 2023), an estimation of the monthly service cost that will be incurred for this cloud migration project was also obtained as shown in image below:

Service category	Service type	Region	Description	Estimated monthly cost	Estimated upfront cost
Compute	Virtual Machines	UK South	1 D2 v3 (2 vCPUs, 8 GB RAM) x 730 Hours (Pay as you go), Windows (License included), OS Only; 0 managed disks – S4; Inter Region transfer type, 5 GB outbound data transfer from UK South to East Asia	£66.22	£0.00
Storage	Storage Accounts	UK South	Block Blob Storage, General Purpose V2, Hierarchical Namespace, LRS Redundancy, Hot Access Tier, 5 TB Capacity - Pay as you go, 10 x 10,000 Write operations, 10 x 10,000 Read operations, 10 x 10,000 Iterative Read operations, 10 x 100 Iterative Write operations, 1,000 GB Data Retrieval, 1,000 GB Data Write, SFTP disabled, 1,000 GB Index, 1 x 10,000 Other operations	£98.49	£0.00
Databases	Azure SQL Database	UK South	Single Database, vCore, General Purpose, Provisioned, Standard-series (Gen 5), Locally Redundant, 1 - 2 vCore Database(s) x 730 Hours, 32 GB Storage, RA-GRS Backup Storage Redundancy, 0 GB Point-In-Time Restore, 0 x 5 GB Long Term Retention	£221.54	£0.00
Compute	Azure Functions	UK South	Consumption tier, Pay as you go, 256 MB memory, 100 milliseconds execution time, 0 executions/mo	£0.00	£0.00
Compute	App Service	UK South	Basic Tier; 1 B1 (1 Core(s), 1.75 GB RAM, 10 GB Storage) x 730 Hours; Windows OS; 0 SNI SSL Connections; 0 IP SSL Connections; 0 Custom Domains; 0 Standard SLL Certificates; 0 Wildcard SSL Certificates	£53.66	£0.00
Analytics	Power BI Embedded	UK South	1 node(s) x 730 Hours, Node type: A1, 1 Virtual Core(s), 3GB RAM, 1-300 Peak renders/hour	£575.49	£0.00
Web	API Management	UK South	Developer tier, 1 unit(s), 730 Hours, 0 x 730 Hours x 5 overage workspaces	£37.56	£0.00
Compute	Azure Virtual Desktop	UK South	Pooled, 50 Users, 90% Peak concurrency, 5% Off peak concurrency, 220 Usage hours/month, multi-session, heavy workload, per user access pricing - Not Applicable, D4s v5 (4 vCPU(s), 16 GB RAM) (Pay as you go), P10 (128 GiB, 500 IOPS) Disks, Premium File Storage: 0 GB of data at-rest, Inter Region transfer type, 5 GB outbound data transfer from UK South to East Asia	£486.44	£0.00
Developer tools	Azure DevOps		5 Basic Plan license users, 5 Basic + Test Plans license users, Free tier - 1 Microsoft Hosted Pipeline(s), 1 Self Hosted Pipeline(s), 0 GB Artifacts	£203.32	£0.00
Support		Free level	Support	£0.00	£0.00
			Total	£1,742.74	£0.00

Figure 3: Azure Services Pricing Breakdown

A breakdown of the annual cost to be incurred using Microsoft Azure:

Development Cost: Initial setup costs for migration tools, training programs, and necessary adjustments – estimated at **£76,500.**

Service Cost: Monthly service charges for Azure IaaS and SaaS applications – estimated at **£1742.74** per month; **£20,912.88** annually.

Maintenance Cost: Ongoing support and maintenance costs – estimated at **£85,000** annually.

4.6   SWOT Analysis for Project's Risk Evaluation

As this is a new venture for the organisation, a SWOT analysis was carried out to affirm that the perks and benefits of this project outweigh the downsides. (Status.net Articles, n.d.)

Strengths:
- Established reputation and reliability of Microsoft Azure.
- Comprehensive suite of IaaS and SaaS solutions.
- Integration with existing Microsoft infrastructure.

Weaknesses:
- Potential learning curve and resistance to change among staff.
- Dependence on external service provider for cloud services.

Opportunities:
- Improved efficiency and collaboration.
- Enhanced data security and compliance.
- Potential for cost savings through scalability.

Threats:
- Potential disruptions during migration.
- Unforeseen technical challenges during the adaptation phase.

4.7   Recommendations of Accepted Architecture

- Implement a phased migration approach to minimise disruptions.
- Prioritise training and change management to ensure a smooth transition.
- Regularly monitor and optimise costs based on actual usage.
- Collaborate closely with Microsoft Azure support for ongoing technical assistance.
- Periodically review and update security measures to address evolving threats.
- Leverage Azure's scalability for future technology integration and business growth.

The acceptance of Microsoft Azure's proposal positions the firm for a successful and future-ready cloud platform, aligning with our strategic goals of efficiency, security, and scalability.

5.0   Initial Planning by Microsoft Azure Service Provider

5.1   Project Name and Aims

Project Name: Azure Accounting Cloud Migration 2023

Project Aims:

- Migrate local accountancy firm's on-premise infrastructure to Microsoft Azure for enhanced efficiency, security, and scalability.
- Integrate Microsoft Azure's IaaS and SaaS solutions tailored to the accounting domain.
- Provide rapid and effective training for the staff on the new Azure-based system.

5.2   Project's Completion Criteria

When all designated systems and applications are successfully moved to Azure on schedule, within budget, and with the least amount of interference with continuing business as usual, the project is considered completed. The criteria below act as a yardstick for determining whether the project is successfully completed.

- Successful migration of all infrastructure and applications to Microsoft Azure: All designated systems, applications, and data are successfully migrated to Microsoft Azure with zero downtime.
- Elimination of on-premise server storage and transition to Azure cloud infrastructure.
- Completion of staff training with a documented increase in proficiency.
- Smooth integration of Microsoft Azure's IaaS and SaaS solutions with the local accountancy firm's operations.
- Operational efficiency improvements, tracked progress, and optimised Azure services.

5.3   Resources Identification

Resources include the personnel that make up a dedicated project team, Azure cloud services, migration tools, and budget allocation for unexpected contingencies. For a seamless and successful execution of the **Azure Accounting Cloud Migration 2023** project, the following resources were identified:

Personnel:
- Project Manager: Oversees project from start to finish
- Cloud Solutions Architect: Designs the Azure solution
- System Administrators: Implement the designed architecture in readiness for migration.
- Network Administrators: Configure network-related aspects of the cloud environment.
- Software Specialists: Oversee installation and testing of all client applications.
- Training and Change Management Experts: Prepares training modules, manuals, guides, and structured learning materials to get the staff ready to use the applications on the new cloud environment.

Hardware/Software:
- Microsoft Azure Cloud Services: Selection of the relevant services for the integration of the hybrid cloud solution for the client.
- Laptops/Desktops for training
- Communication tools: Project management software to track progress, assign tasks, and maintain communication. Other collaboration tools for team discussions and document sharing.

5.4 Tasks Definition

- Conduct Initial Infrastructure Assessment: The objective is to assess IT infrastructure, inventory assets, analyse network, identify challenges, and recommend Azure migration.
- Plan Migration Strategy and Timeline: Develop a strategy for Azure data migration, categorise, choose tools, plan transfer, and ensure security. (Veracity Solutions, 2022)
- Prepare and Provision Azure Environment: Design tailored Azure infrastructure, select services, plan scalability, ensure security, and consider compliance measures.
- Design and Develop Azure-Optimised Applications (Veracity Solutions, 2022)
- Conduct Staff Training Programs
- Perform Data Migration to Azure: Execute data migration, test integrity, deploy applications on Azure, integrate with cloud services, and optimise functionality.
- Implement Azure Security Measures (Veracity Solutions, 2022)
- Monitor and Optimise Azure Services (Veracity Solutions, 2022)
- Conduct Regular Testing and Quality Assurance
- Implement Change Management Strategies
- Document and Communicate Progress

5.5   Work Breakdown Structure Definition
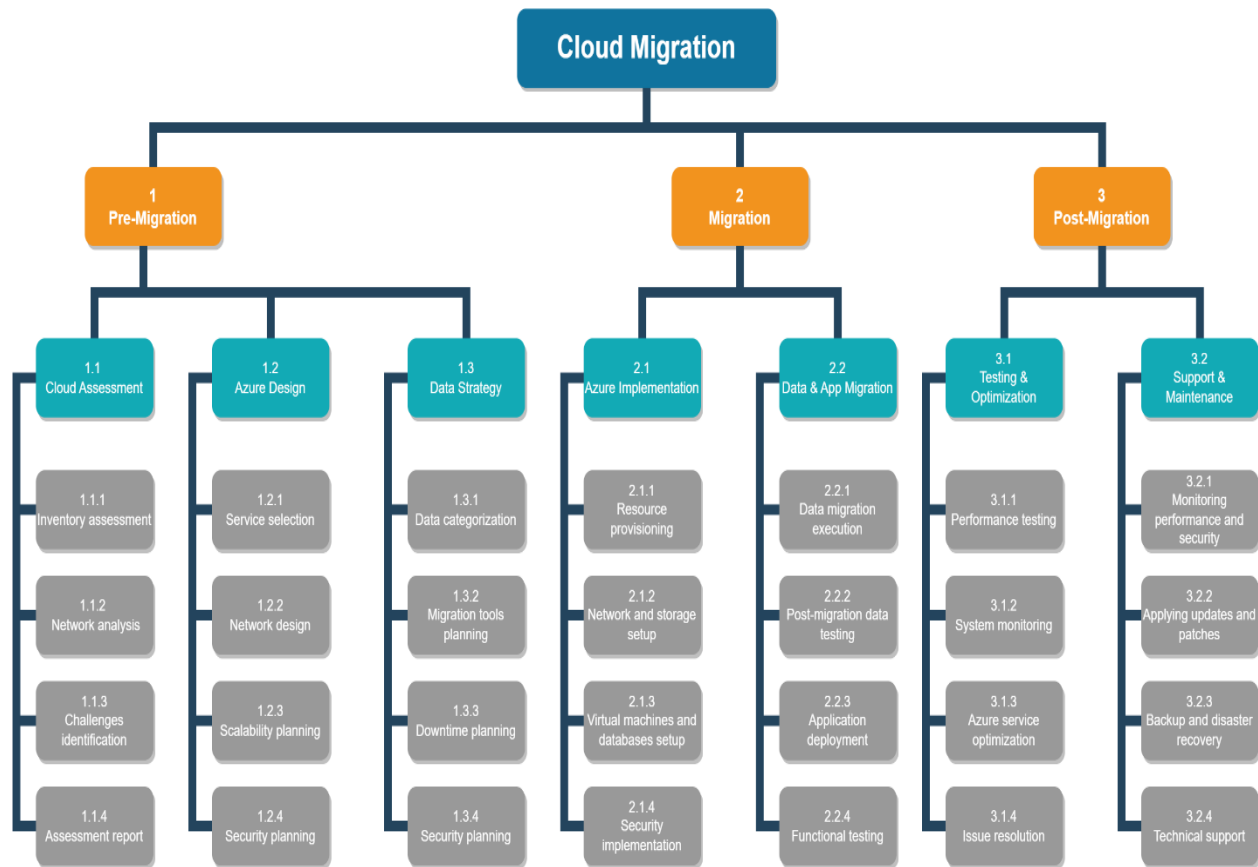
Figure 4: Work Breakdown Structure of Azure Accounting Cloud Migration 2023

5.6   Project's Dependency Relations

Task	Dependencies	Milestones/Control Points	Deliverables	Associated Risks
1. Cloud Migration Project	None	Project Kick-off	Project Initiation	Unclear project scope, Stakeholder alignment issues
1.1 Initial Cloud Readiness Assessment	None	Cloud Assessment Completion	Cloud Readiness Assessment Report	Incomplete or inaccurate assessment data
1.1.1 Inventory assessment	None	-	Inventory report	Incomplete hardware/software inventory
1.1.2 Network analysis	1.1.1 Inventory assessment	-	Network analysis report	Insufficient network documentation
1.1.3 Challenges identification	1.1.2 Network analysis	-	Identified challenges document	Overlooking critical challenges
1.1.4 Assessment report	1.1.3 Challenges identification	Initial Assessment Report Completion	Cloud Assessment Summary	Misinterpretation of assessment findings
1.2 Planning and Design of Azure Architecture	1.1 Initial Cloud Readiness Assessment	Azure Architecture Design Completion	Azure Architecture Design Document	Inadequate consideration of scalability
1.2.1 Service selection	1.2 Planning and Design of Azure Architecture	-	Selected Azure Services list	Suboptimal service choices
1.2.2 Network design	1.2 Planning and Design of Azure Architecture	-	Azure Network Design Document	Network inefficiencies
1.2.3 Scalability planning	1.2 Planning and Design of Azure Architecture	-	Scalability Plan	Inadequate scalability for future needs
1.2.4 Security planning	1.2 Planning and Design of Azure Architecture	Azure Security Planning Completion	Azure Security Plan	Security vulnerabilities
1.3 Data Migration Strategy Formulation	1.2 Planning and Design of Azure Architecture	Data Migration Strategy Formulation Completion	Data Migration Strategy Document	Data integrity risks during migration
1.3.1 Data categorization	1.3 Data Migration Strategy Formulation	-	Data Categorization Report	Misclassification of critical data

1.3.2 Migration tools planning	1.3 Data Migration Strategy Formulation	-	Migration Tools Plan	Compatibility issues with selected tools
1.3.3 Downtime planning	1.3 Data Migration Strategy Formulation	-	Downtime Minimization Plan	Extended downtime during migration
1.3.4 Security planning	1.3 Data Migration Strategy Formulation	Data Security Planning Completion	Data Security Plan	Data exposure or unauthorized access
2. Implementation of Azure Cloud Services	1.2 Planning and Design of Azure Architecture	Azure Implementation Kickoff	Azure Services Provisioned	Service provisioning delays or failures
2.1 Provisioning of Azure resources and services	2. Implementation of Azure Cloud Services	-	Provisioned Azure Resources and Services	Resource allocation issues
2.2 Configuring network and storage solutions	2.1 Provisioning of Azure resources and services	-	Configured Network and Storage Solutions	Configuration errors
2.3 Setting up virtual machines and databases	2.2 Configuring network and storage solutions	-	Virtual Machines and Databases Set Up	Configuration mismatches
2.4 Implementing security measures	2.3 Setting up virtual machines and databases	Azure Services Implementation Completion	Implemented Security Measures	Security misconfigurations
3. Data Migration and Application Deployment	2. Implementation of Azure Cloud Services	Data & App Migration Kickoff	Data and Applications Successfully Migrated	Data loss or application failures
3.1 Executing the data migration plan	3. Data Migration and Application Deployment	-	Executed Data Migration Plan	Data transfer errors or corruption
3.2 Testing data integrity post-migration	3. Data Migration and Application Deployment	-	Data Integrity Test Results	Data integrity issues
3.3 Deploying applications on Azure	3. Data Migration and Application Deployment	-	Deployed Applications on Azure	Application deployment failures

3.4 Conducting functional testing	3. Data Migration and Application Deployment	Data & App Deployment Completion	Functional Testing Report	Application functionality issues
4. Post-Migration Testing and Optimization	3. Data Migration and Application Deployment	Post-Migration Testing Kickoff	Post-Migration Testing Plan	Undetected issues post-migration
4.1 Performance testing	4. Post-Migration Testing and Optimization	-	Performance Testing Results	Performance bottlenecks
4.2 Monitoring system behavior	4. Post-Migration Testing and Optimization	-	System Monitoring Report	Unidentified system issues
4.3 Tuning and optimization of Azure services	4. Post-Migration Testing and Optimization	-	Tuned and Optimized Azure Services	Inefficient resource utilization
4.4 Addressing any identified issues or shortcomings	4. Post-Migration Testing and Optimization	Post-Migration Testing Completion	Issue Resolution Report	Unresolved issues after optimization
5. Continuous Support and Maintenance	4. Post-Migration Testing and Optimization	Continuous Support and Maintenance Kickoff	Ongoing System Monitoring and Support	Inadequate system support
5.1 Regular monitoring of system performance	5. Continuous Support and Maintenance	-	Monitoring Reports and Alerts	Undetected performance issues
5.2 Applying updates and patches	5. Continuous Support and Maintenance	-	Applied Updates and Patches	System vulnerabilities during updates
5.3 Managing backup and disaster recovery	5. Continuous Support and Maintenance	-	Backup and Disaster Recovery Plan	Inadequate data recovery procedures
5.4 Providing technical support	5. Continuous Support and Maintenance	Project Completion	Ongoing Technical Support	Delayed or ineffective issue resolution

Figure 5: Project Dependency Relations

Additional Project Management Control Points:
- Weekly Progress Meetings and Reports
- Regular Testing and QA Checkpoints
- Change Management Effectiveness Assessment
- Stakeholder Feedback Sessions

5.7   Project's Schedule: Gantt chart

Below is a Gantt chart showing the entire project schedule which is billed to last for **80 days**:

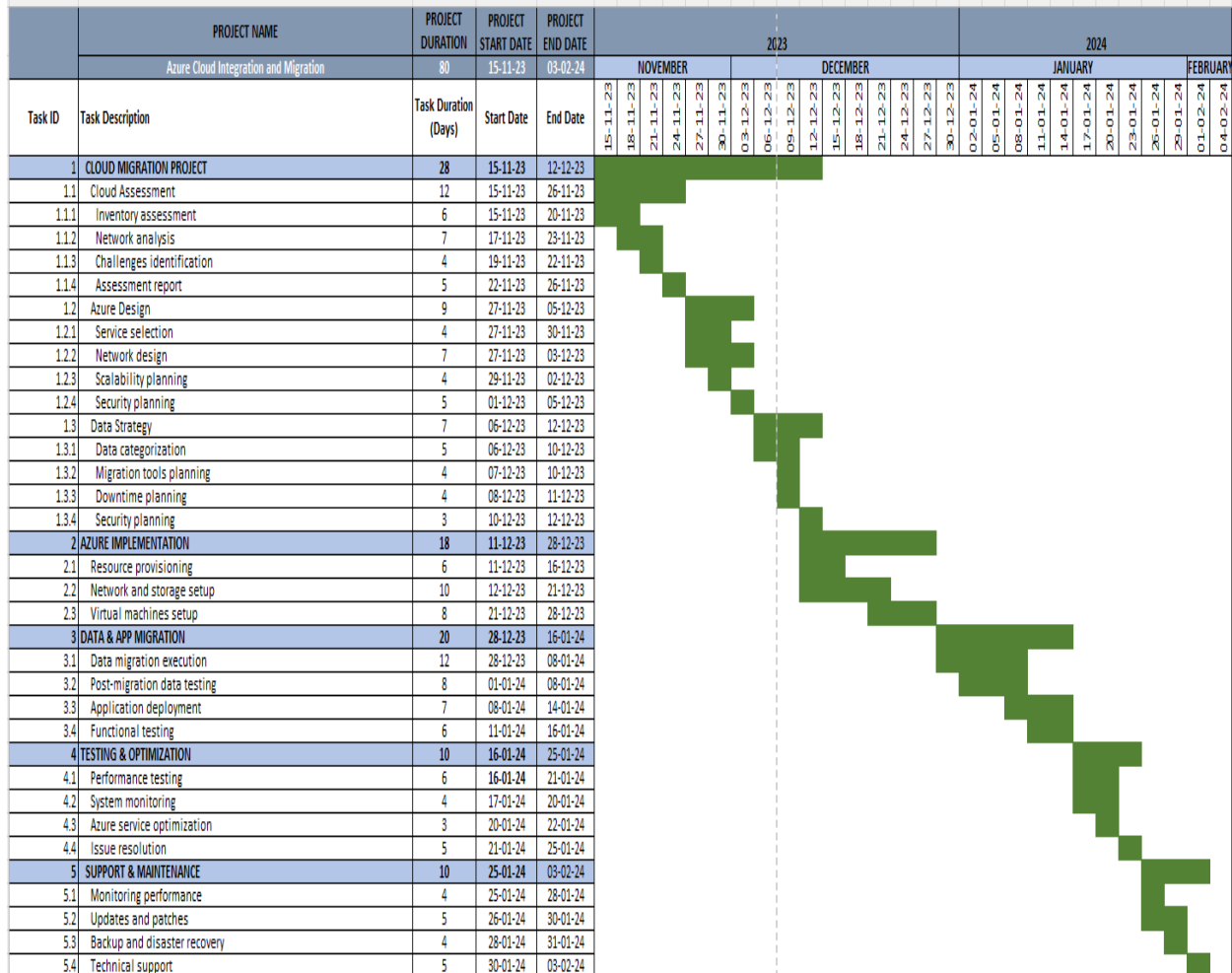| Task ID	Task Description	Task Duration (Days)	Start Date	End Date
	PROJECT NAME / Azure Cloud Integration and Migration	**PROJECT DURATION** 80	**PROJECT START DATE** 15-11-23	**PROJECT END DATE** 03-02-24
1	**CLOUD MIGRATION PROJECT**	28	15-11-23	12-12-23
1.1	Cloud Assessment	12	15-11-23	26-11-23
1.1.1	Inventory assessment	6	15-11-23	20-11-23
1.1.2	Network analysis	7	17-11-23	23-11-23
1.1.3	Challenges identification	4	19-11-23	22-11-23
1.1.4	Assessment report	5	22-11-23	26-11-23
1.2	Azure Design	9	27-11-23	05-12-23
1.2.1	Service selection	4	27-11-23	30-11-23
1.2.2	Network design	7	27-11-23	03-12-23
1.2.3	Scalability planning	4	29-11-23	02-12-23
1.2.4	Security planning	5	01-12-23	05-12-23
1.3	Data Strategy	7	06-12-23	12-12-23
1.3.1	Data categorization	5	06-12-23	10-12-23
1.3.2	Migration tools planning	4	07-12-23	10-12-23
1.3.3	Downtime planning	4	08-12-23	11-12-23
1.3.4	Security planning	3	10-12-23	12-12-23
2	**AZURE IMPLEMENTATION**	18	11-12-23	28-12-23
2.1	Resource provisioning	6	11-12-23	16-12-23
2.2	Network and storage setup	10	12-12-23	21-12-23
2.3	Virtual machines setup	8	21-12-23	28-12-23
3	**DATA & APP MIGRATION**	20	28-12-23	16-01-24
3.1	Data migration execution	12	28-12-23	08-01-24
3.2	Post-migration data testing	8	01-01-24	08-01-24
3.3	Application deployment	7	08-01-24	14-01-24
3.4	Functional testing	6	11-01-24	16-01-24
4	**TESTING & OPTIMIZATION**	10	16-01-24	25-01-24
4.1	Performance testing	6	16-01-24	21-01-24
4.2	System monitoring	4	17-01-24	20-01-24
4.3	Azure service optimization	3	20-01-24	22-01-24
4.4	Issue resolution	5	21-01-24	25-01-24
5	**SUPPORT & MAINTENANCE**	10	25-01-24	03-02-24
5.1	Monitoring performance	4	25-01-24	28-01-24
5.2	Updates and patches	5	26-01-24	30-01-24
5.3	Backup and disaster recovery	4	28-01-24	31-01-24
5.4	Technical support	5	30-01-24	03-02-24

Figure 6: Gantt chart for Azure Accounting Cloud Migration 2023

5.8   Critical Path Analysis

A keen review of the project schedule using key artefacts from the Gantt chart helped to determine the critical path of the project which will lead to the point where the accountancy firm can become fully operational on cloud.

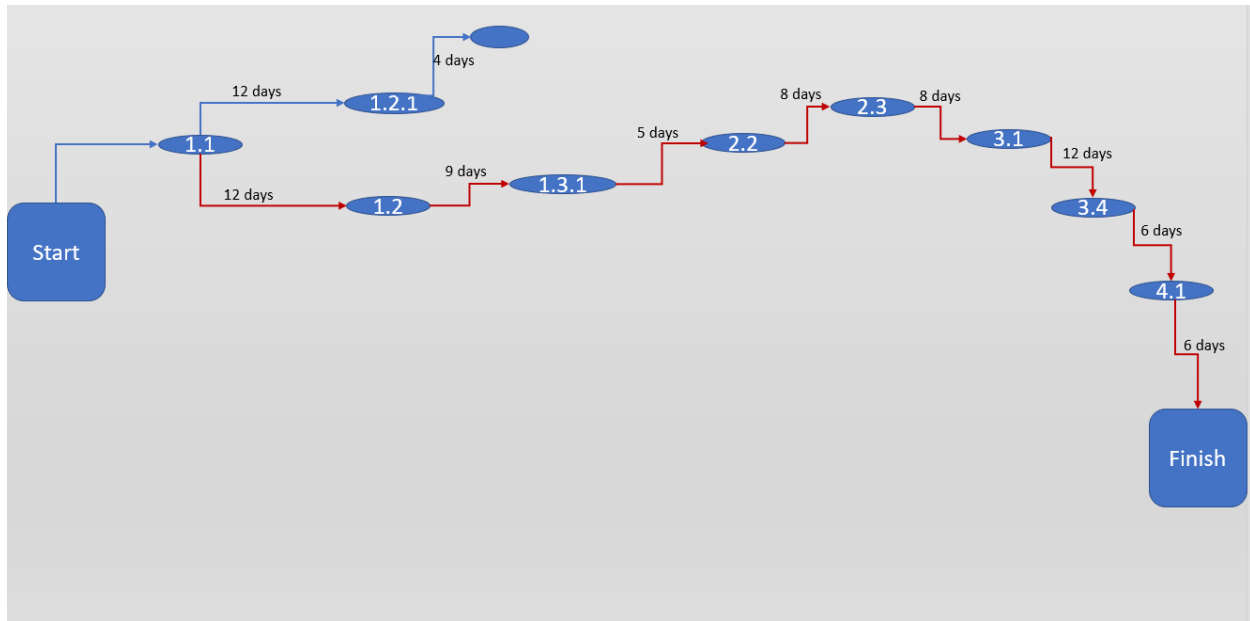The effective critical path is **66 days**, which saves the project 14 days (exactly 2 weeks)!

Figure 7: Azure Accounting Cloud Migration 2023 Critical Path Analysis

6.0   Procurement Proposal

Microsoft Azure
Proposal for Services
For Azure Accounting Cloud Migration 2023 project

Cloud Migration and Support Services

Microsoft Azure is delighted to present this procurement proposal for services to facilitate the migration to Microsoft Azure's cloud platform. Our partnership with small businesses, commitment to enhancing customer experience and embracing modern technologies, positions us to assist your local accounting firm in achieving its goals for improved efficiency, security, and scalability through cloud adoption.

Overview
The Objectives:

- 1: Seamless migration of all infrastructure and applications to Microsoft Azure.
- 2: Transition from on-premise server storage to Azure cloud infrastructure.
- 3: Training and support for staff on the new Azure-based system.

The Opportunities:

- 1: Achieve excellence in utilizing Microsoft Azure's IaaS and SaaS for optimal performance.
- 2: Integrate software applications tailored to the client's domain and the Azure cloud environment.
- 3: Maintain operational efficiency, monitor progress, and optimise Azure services for the firm.

The Solution:

- 1: Design and implement applications that align with user needs in the accounting domain.
- 2: Conduct scheduled testing to ensure the efficiency and fluidity of the Azure-based system.
- 3: Deploy Azure services to all departments based on the firm's unique requirements.

Our Proposal:

Our client, renowned for its commitment to customer service in accounting, faces limitations and lack of flexibility in its current infrastructure. Our proposal focuses on leveraging Microsoft Azure's cloud services to enhance operational efficiency, security, and scalability. We offer a

seamless integration process, ensuring a seamless staff technical adaptation, resulting in tangible improvements in service delivery, customer satisfaction, and overall business performance metrics. This is in line with the company's mission to achieve complete digital transformation, upskill their pool of resources with the knowledge of cloud technologies, and open doors to new market opportunities.

Execution Strategy:
Our execution strategy involves leveraging proven methodologies, deploying highly qualified personnel, and maintaining a responsive approach to managing deliverables. Our team comprises service technicians, network administrators, and software specialists, ensuring a holistic approach to the project.

Project Deliverables

Deliverable	Description
Server Upgrade	Transition from on-premise server storage to Azure cloud infrastructure
Cloud Infrastructure	Consolidation of cloud storage on Microsoft Azure
Software	Development and delivery of optimisation software for Azure usage

Timeline for Execution

Description	Start Date	End Date	Duration
Project Start	15/11/2023	15/11/2023	1 day
Development	15/11/2023	12/12/2023	28 days
Development Done	12/12/2023	12/12/2023	1 day
Implementation	11/12/2023	28/12/2023	18 days
Implementation Done	28/12/2023	28/12/2023	1 day
Migration	28/12/2023	08/01/2024	12 days
Migration Complete	08/01/2024	08/01/2024	1 day
Testing and Modernisation	08/01/2024	16/01/2024	8 days
Testing and Modernisation Done	16/01/2024	16/01/2024	1 day
Optimisation	16/01/2024	Ongoing	TBD
Project End	03/02/2024	03/02/2024	1 day

TBD: To be Determined

7CS089 – Cloud migration project

Materials Supplied

Materials to be supplied by Microsoft Azure	Due Date
Laptop/Desktop/Mi-Fi/Monitors	27/11/2023
Server Purchases	27/11/2023

Expected Results

We expect our proposed solution to yield the following benefits:

Financial Benefits:
Greater return on investments (ROI) with 391 percent ROI over a 3-year period
Energy efficiency of over 93%
Lower maintenance cost with 54% savings compared to on-premise.

Technical Benefits:
Disaster Recovery
Security
Work from anywhere

Other Benefits:
Upturn in customer satisfaction
Effortless client communication
Reduced lag times

Pricing
Below is the breakdown of the development cost required to commence this project:

Services Cost Category #1	Price
Azure Cloud Services for 20 workstations	£22,000.00
Maintenance and Optimisation	£24,500.00
Facilities	£10,000.00
Training	£20,000.00
Total	£76,500.00

Qualifications
Microsoft Azure is a proven industry leader in cloud services solution, evidenced by these certifications:

- Microsoft Certified: Azure Solutions Architect Expert
- Microsoft Certified: Azure Administrator Associate
- Certified Information Systems Security Professional (CISSP)

Conclusion

We eagerly anticipate the opportunity to collaborate with your accountancy firm and support your efforts in embracing digital transformation, enhancing client relationship management, and providing top-notch training and support services. We are confident in our ability to meet the challenges ahead and stand ready to partner with you in delivering an effective cloud migration solution.

If you have any questions on this proposal, please feel free to contact by email at cloudservices@microsoftazure.co.uk or by phone at +44332123456. We look forward to arranging a follow-up conversation at your convenience to discuss the proposal further.

Thank you for considering Microsoft Azure for your cloud migration needs.

Microsoft Azure Migrate Services
Procurement Proposal

7.0   References

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CW2 – Peer Evaluation Exercise

Week 8 to 11: Formative

Week 12: Summative

Instructions:

- Mark – give a mark out of 1 depending on group member contribution.
- Name your file with all the first names of your group members and email the report to your tutor by the end of the workshop session.
- When a group member is not present, the other group members should still present their evaluation and include a note as 'absent' in the comments section.
- Email the evaluation report to your tutor by the 5pm Friday for a given week.

Example:

- Student 1 and Student 2 contributing equally – both should receive a mark of 1.
- Student 3 contributing half of those from student 1 and student 2 – should receive a mark of 0.5.
- Student 4 and 5 contributing nothing – should receive a mark of 0.

Group Information:

Enter your group information here: Assignment 2 – Group Project.

Evaluation:

Student Name	Evaluation	Week 8	
		Comments	Mark
100629696	Self	Chapter 1 & 2: Contributed significantly	1
	100638075	Chapter 1 & 2: Contributed significantly	1
	100643504	Chapter 1 & 2: Contributed significantly	1
	100640743	Chapter 1 & 2: Contributed significantly	1
	100646322	Chapter 1 & 2: Contributed significantly	1
100638075	Self	Chapter 1 & 2: Contributed significantly	1
	100629696	Chapter 1 & 2: Contributed significantly	1
	100643504	Chapter 1 & 2: Contributed significantly	1
	100640743	Chapter 1 & 2: Contributed significantly	1
	100646322	Chapter 1 & 2: Contributed significantly	1
100643504	Self	Chapter 1 & 2: Contributed significantly	1
	100629696	Chapter 1 & 2: Contributed significantly	1
	100638075	Chapter 1 & 2: Contributed significantly	1
	100640743	Chapter 1 & 2: Contributed significantly	1
	100646322	Chapter 1 & 2: Contributed significantly	1
100640743	Self	Chapter 1 & 2: Contributed significantly	1
	100629696	Chapter 1 & 2: Contributed significantly	1
	100638075	Chapter 1 & 2: Contributed significantly	1
	100643504	Chapter 1 & 2: Contributed significantly	1
	100646322	Chapter 1 & 2: Contributed significantly	1

100646322	Self	Chapter 1 & 2: Contributed significantly	1
	100629696	Chapter 1 & 2: Contributed significantly	1
	100638075	Chapter 1 & 2: Contributed significantly	1
	100643504	Chapter 1 & 2: Contributed significantly	1
	100640743	Chapter 1 & 2: Contributed significantly	1

Student Name	Evaluation	Week 9	
		Comments	Mark
100629696	Self	Chapter 3 & 4: Contributed significantly	1
	100638075	Chapter 3 & 4: Contributed significantly	1
	100643504	Chapter 3 & 4: Contributed significantly	1
	100640743	Chapter 3 & 4: Contributed significantly	1
	100646322	Chapter 3 & 4: Contributed significantly	1
100638075	Self	Chapter 3 & 4: Contributed significantly	1
	100629696	Chapter 3 & 4: Contributed significantly	1
	100643504	Chapter 3 & 4: Contributed significantly	1
	100640743	Chapter 3 & 4: Contributed significantly	1
	100646322	Chapter 3 & 4: Contributed significantly	1
100643504	Self	Chapter 3 & 4: Contributed significantly	1
	100629696	Chapter 3 & 4: Contributed significantly	1
	100638075	Chapter 3 & 4: Contributed significantly	1
	100640743	Chapter 3 & 4: Contributed significantly	1
	100646322	Chapter 3 & 4: Contributed significantly	1
100640743	Self	Chapter 3 & 4: Contributed significantly	1
	100629696	Chapter 3 & 4: Contributed significantly	1
	100638075	Chapter 3 & 4: Contributed significantly	1
	100643504	Chapter 3 & 4: Contributed significantly	1
	100646322	Chapter 3 & 4: Contributed significantly	1
100646322	Self	Chapter 3 & 4: Contributed significantly	1
	100629696	Chapter 3 & 4: Contributed significantly	1
	100638075	Chapter 3 & 4: Contributed significantly	1
	100643504	Chapter 3 & 4: Contributed significantly	1
	100640743	Chapter 3 & 4: Contributed significantly	1

Student Name	Evaluation	Week 10	
		Comments	Mark
100629696	Self	Chapter 5: Contributed significantly	1
	100638075	Chapter 5: Contributed significantly	1
	100643504	Chapter 5: Contributed significantly	1
	100640743	Chapter 5: Contributed significantly	1
	100646322	Chapter 5: Contributed significantly	1
100638075	Self	Chapter 5: Contributed significantly	1

	100629696	Chapter 5: Contributed significantly	1
	100643504	Chapter 5: Contributed significantly	1
	100640743	Chapter 5: Contributed significantly	1
	100646322	Chapter 5: Contributed significantly	1
100643504	Self	Chapter 5: Contributed significantly	1
	100629696	Chapter 5: Contributed significantly	1
	100638075	Chapter 5: Contributed significantly	1
	100640743	Chapter 5: Contributed significantly	1
	100646322	Chapter 5: Contributed significantly	1
100640743	Self	Chapter 5: Contributed significantly	1
	100629696	Chapter 5: Contributed significantly	1
	100638075	Chapter 5: Contributed significantly	1
	100643504	Chapter 5: Contributed significantly	1
	100646322	Chapter 5: Contributed significantly	1
100646322	Self	Chapter 5: Contributed significantly	1
	100629696	Chapter 5: Contributed significantly	1
	100638075	Chapter 5: Contributed significantly	1
	100643504	Chapter 5: Contributed significantly	1
	100640743	Chapter 5: Contributed significantly	1

Student Name	Evaluation	Week 11	
		Comments	Mark
100629696	Self	Chapter 6 & Report: Contributed significantly	1
	100638075	Chapter 6 & Report: Contributed significantly	1
	100643504	Chapter 6 & Report: Contributed significantly	1
	100640743	Chapter 6 & Report: Contributed significantly	1
	100646322	Chapter 6 & Report: Contributed significantly	1
100638075	Self	Chapter 6 & Report: Contributed significantly	1
	100629696	Chapter 6 & Report: Contributed significantly	1
	100643504	Chapter 6 & Report: Contributed significantly	1
	100640743	Chapter 6 & Report: Contributed significantly	1
	100646322	Chapter 6 & Report: Contributed significantly	1
100643504	Self	Chapter 6 & Report: Contributed significantly	1
	100629696	Chapter 6 & Report: Contributed significantly	1
	100638075	Chapter 6 & Report: Contributed significantly	1
	100640743	Chapter 6 & Report: Contributed significantly	1
	100646322	Chapter 6 & Report: Contributed significantly	1
100640743	Self	Chapter 6 & Report: Contributed significantly	1
	100629696	Chapter 6 & Report: Contributed significantly	1
	100638075	Chapter 6 & Report: Contributed significantly	1
	100643504	Chapter 6 & Report: Contributed significantly	1
	100646322	Chapter 6 & Report: Contributed significantly	1
100646322	Self	Chapter 6 & Report: Contributed significantly	1
	100629696	Chapter 6 & Report: Contributed significantly	1
	100638075	Chapter 6 & Report: Contributed significantly	1
	100643504	Chapter 6 & Report: Contributed significantly	1

	100640743	Chapter 6 & Report: Contributed significantly	1

Student Name	Evaluation	Week 12	
		Comments	Mark
100629696	Self	Report Writing: Contributed significantly	1
	100638075	Report Writing: Contributed significantly	1
	100643504	Report Writing: Contributed significantly	1
	100640743	Report Writing: Contributed significantly	1
	100646322	Report Writing: Contributed significantly	1
100638075	Self	Report Writing: Contributed significantly	1
	100629696	Report Writing: Contributed significantly	1
	100643504	Report Writing: Contributed significantly	1
	100640743	Report Writing: Contributed significantly	1
	100646322	Report Writing: Contributed significantly	1
100643504	Self	Report Writing: Contributed significantly	1
	100629696	Report Writing: Contributed significantly	1
	100638075	Report Writing: Contributed significantly	1
	100640743	Report Writing: Contributed significantly	1
	100646322	Report Writing: Contributed significantly	1
100640743	Self	Report Writing: Contributed significantly	1
	100629696	Report Writing: Contributed significantly	1
	100638075	Report Writing: Contributed significantly	1
	100643504	Report Writing: Contributed significantly	1
	100646322	Report Writing: Contributed significantly	1
100646322	Self	Report Writing: Contributed significantly	1
	100629696	Report Writing: Contributed significantly	1
	100638075	Report Writing: Contributed significantly	1
	100643504	Report Writing: Contributed significantly	1
	100640743	Report Writing: Contributed significantly	1