COMP1787:

REQUIREMENTS MANAGEMENT

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Section A: Executive Summary

1. Business goals

- **Introduction**

  Trust Bank is a well-established financial institution with a rich legacy spanning over a century. Renowned for its commitment to trust, reliability, and customer-centric approach, Trust Bank has become a leader in the national banking industry. Despite its longstanding success, the bank faces various challenges, including data fragmentation, manual reporting processes, and limited real-time insights. To address these issues and align with its vision for the future, Trust Bank aims to develop an innovative and customer-focused management information system (MIS) that empowers decision-makers, enhances data integration, and provides real-time analytics.

- **Vision for the Future** : Trust Bank envisions a future where it continuously improves customer experiences by offering innovative solutions, expanding its digital presence, and staying responsive to market changes and customer demands. The bank's agility and ability to provide exceptional customer service are central to its long-term vision.
- **Current Issues**: Trust Bank faces challenges such as data fragmentation, manual reporting processes, lack of real-time insights, data security concerns, limited customization, compliance challenges, evolving customer expectations, limited mobile access, competitive pressure, and the absence of predictive analytics.
- **Interviews to Gather Requirements:** In the case study, key stakeholders from Trust Bank, including the CEO, CFO, CIO, heads of customer relations, risk management, operations, marketing, and human resources, were interviewed. These interviews provided valuable insights into the bank's requirements for the new system, emphasizing the importance of real-time analytics, integration capabilities, data security, scalability, customizability, comprehensive customer insights, and support for various departments

2. Methodologies

- **Scrum**

Scrum, as described by Clark (2019), is an Agile methodology commonly utilized in software development projects, yet applicable to various project types. Its core values are transparency, inspection, and adaptability. In Scrum, teams are encouraged to maintain openness and honesty about their progress, regularly review their work to identify areas for improvement, and adjust their strategies as needed to achieve their goals.

Figure 1: Scrum methodology

- **Rapid Application Development (RAD)**

According to Martin (1991), RAD (Rapid Application Development) is a software development approach that highlights iterative development and quick prototyping. The primary objective of this methodology is to swiftly create a functional software prototype by engaging end users in the design and development phases. RAD employs multiple minor iterations, each concentrating on developing a small component of the system. This approach fosters collaboration and communication among stakeholders, including developers, customers, and end users, ensuring that the final product meets the needs of all parties involved.

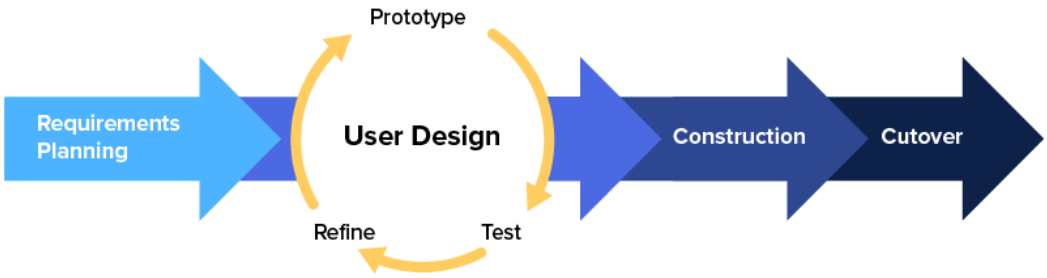

Figure 2: Rapid Application Development

- **Dynamic Systems Development Method (DSDM)**

According to Jennifer Stapleton (2003), DSDM (Dynamic Systems Development Method) is an agile approach that stresses collaboration among stakeholders from project feasibility to implementation. Its aim is to deliver top-notch software systems within the stipulated time and budget. DSDM achieves this by embracing changing requirements

and ensuring the system delivers substantial business value.

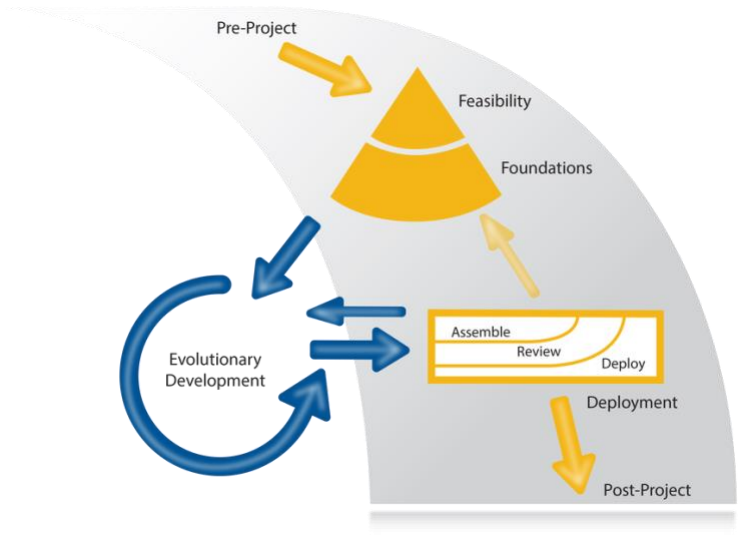

Figure 3: Dynamic Systems Development Method

DSDM, following a time-boxed approach, divides the project into fixed-length iterations, each producing a usable product. These iterations have specific objectives, and their outcomes are thoroughly reviewed. This iterative process enables swift adjustments, ensuring the project stays on track and meets stakeholder needs.DSDM promotes active involvement from various stakeholders like business representatives, users, and developers. It employs a collaborative and iterative method for gathering and prioritizing requirements, ensuring tangible value for the business. The methodology emphasizes continuous testing and quality assurance, guaranteeing a high-quality system throughout the project.Rooted in nine principles like active user engagement, frequent and incremental delivery, DSDM offers a robust project management framework. It delineates roles, deliverables, and procedures from initial feasibility studies to implementation and maintenance phases.In essence, DSDM is highly flexible and adaptable, catering to a wide array of projects. Its emphasis on collaboration, user engagement, and rapid feedback makes it especially suitable for projects with fluctuating requirements or those struggling to define their business value.

- **Extreme Programming (XP)**

Based on Kent Beck's (2004) insights, Extreme Programming (XP) is a software development methodology focused on ensuring customer satisfaction and delivering high-quality software promptly. It places importance on regular product releases, ongoing testing, and continuous user feedback. The core principles of XP include simplicity, effective communication, constant feedback, mutual respect, and the courage to make necessary decisions.

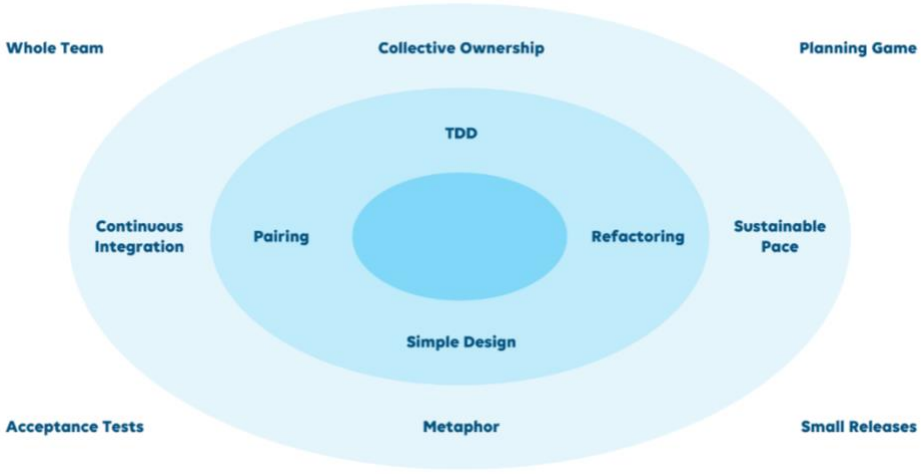

Figure 4: Extreme Programming

3. Chosen method for the scenario

Given the challenges faced by Trust Bank, the most suitable method for addressing the scenario is to implement the Dynamic Systems Development Method (DSDM). DSDM's focus on collaboration, iterative development, and adaptability aligns well with Trust Bank's need to streamline operations, enhance data management, and improve customer experience. By adopting DSDM, Trust Bank can address its current issues, such as data fragmentation, manual reporting processes, lack of real-time insights, data security concerns, and compliance challenges. DSDM's emphasis on active stakeholder involvement and continuous feedback will enable Trust Bank to develop a comprehensive and advanced Management Information System (MIS) that meets its specific requirements. Additionally, DSDM's flexibility allows customization to cater to the unique needs of Trust Bank, ensuring the successful implementation of the new system.

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4. **Feasibility of the project**

   Assessing the feasibility of the project is a critical step in determining whether the proposed Management Information System (MIS) implementation for Trust Bank is viable. Feasibility analysis typically considers various aspects such as technical, economic, legal, operational, and scheduling factors. Let's evaluate the feasibility of the project in these key areas:

5. **Technical Feasibility:**

   Data Integration: Assess the technical compatibility of existing systems with the proposed MIS. Determine if seamless integration is possible without disrupting current operations.

   Scalability: Evaluate whether the chosen technology can handle increased data volumes as the bank grows.

   Mobile Accessibility: Ensure the technical infrastructure supports secure mobile access to the MIS, allowing employees to access critical data remotely.

6. **Economic Feasibility:**

   Cost-Benefit Analysis: Conduct a comprehensive cost-benefit analysis to determine the financial implications of implementing the MIS. Compare the costs of development, training, and maintenance against the anticipated benefits in terms of efficiency, reduced operational costs, and improved customer satisfaction.

   Return on Investment (ROI): Calculate the expected ROI over a specific period, considering the increased operational efficiency and potential revenue growth resulting from the MIS implementation.

7. **Legal and Regulatory Feasibility:**

   Compliance: Ensure the MIS complies with banking regulations, data protection laws, and industry standards. Address any legal challenges related to data security and customer privacy.Intellectual Property: Verify the legal aspects related to software licenses, copyrights, and intellectual property rights for the MIS components.

8. **Operational Feasibility:**

User Acceptance: Assess the willingness and readiness of employees to adapt to the new system. Provide adequate training and support to ensure smooth adoption.

Process Alignment: Analyze how well the MIS aligns with existing operational processes. Identify potential bottlenecks or areas where processes need adjustment for optimal MIS utilization.Change Management: Develop a change management plan to address resistance and ensure a smooth transition to the new system.

9. **Scheduling Feasibility:**

   Project Timeline: Develop a realistic project timeline considering the complexity of the MIS, availability of resources, and potential challenges. Identify critical milestones and deadlines.Resource Availability: Assess the availability of skilled personnel, technology resources, and external vendors. Ensure that the necessary resources can be allocated as per the project requirements.

10. **the strengths and weaknesses of DSDM as an agile methodology, and why it may be suitable for the Brightstar Ltd case:**

    - **Strengths of DSDM:**

    Focuses on delivering business value early through incremental delivery of working software. This allows feedback from users to guide the development.

    Prioritizes requirements using MoSCoW rules to determine must-haves vs nice-to-haves. This ensures the most critical features are delivered first.

    Emphasizes collaboration between all stakeholders throughout the project. This improves communication and shared understanding.

    Provides a framework of best practices for agile project management and development.

    - **Weaknesses of DSDM:**

    Can be difficult to accurately estimate effort for requirements upfront. Timeboxes are set but scope may need to change.

    Depends heavily on active user involvement throughout the project, which may not always be feasible.Less focus on technical practices compared to methods like XP. Relies more on skills/judgement of team.

    - **Why DSDM may suit Brightstar Ltd:**

They need to develop an MVP quickly, so incremental delivery will help get core features out faster.MoSCoW prioritization will ensure they focus on the most critical requirements first within the 3 month timeframe.

Collaborative workshops have already proven effective to gather requirements from various stakeholders.A framework of best practices will provide helpful guidance for their first agile project.Timeboxes will help scope the work for the short 3 month development window.So in summary, DSDM's iterative approach, focus on collaboration, MoSCoW prioritization, and timeboxing make it a good fit for Brightstar's needs based on the information provided. The incremental delivery will help them get an MVP built rapidly.

⇨ Conclusion:

Considering the technical compatibility, economic viability, legal adherence, operational readiness, and feasible project scheduling, the MIS implementation for Trust Bank appears to be feasible. However, it is essential to continuously monitor and evaluate these factors throughout the project lifecycle to mitigate risks and ensure successful implementation. Regular assessments and adaptability to changing circumstances are crucial to the overall feasibility and success of the project.

11. Summarize for section B.

The high-level requirements outlined in Appendix A of the case study need significant revision. Some of the requirements do not meet the criteria for well-defined high-level requirements. The task involves a comprehensive review of the list, identification of inappropriate requirements, rewriting and adding new ones, resulting in an updated list of 8-10 functional and non-functional requirements. These requirements will be prioritized using MoSCoW/Timebox rules.

12. Summarize for section C.

BL is required to incorporate considerations for Legal, Social, Ethical, and Professional Issues (LSEPI) into its daily operations and appoint a Data Controller. The task necessitates elucidating the responsibilities of the Data Controller within the organization and pinpointing potential legal, social, ethical, and professional challenges

that BL might encounter. A practical example from the case study will be provided for each aspect of LSEPI.

Section B: High level requirements analysis and MoSCoW prioritisation

Here are all the requirements in Facilitated Workshop Data

ID	Requirement Detail	Stakeholder
TB-RQ-1	The Management Information System (MIS) has the capability to offer real-time analytics on financial performance, customer behavior, and market trends.	CEO - Sarah Mitchell
TB-RQ-2	Ensuring the accuracy and timeliness of financial data is crucial for our financial planning and reporting processes.	CFO - Mark Johnson
TB-RQ-3	The Management Information System (MIS) must integrate seamlessly with our accounting systems, ensuring a unified and accurate source of financial data.	CFO - Mark Johnson
TB-RQ-4	Additionally, we require customizable financial dashboards to monitor essential key performance indicators.	CFO - Mark Johnson
TB-RQ-5	The Management Information System (MIS) should incorporate strong data encryption, stringent access controls, and detailed audit trails to ensure the protection of sensitive financial data.	CIO - Lisa Chen
TB-RQ-6	Furthermore, it should be scalable to accommodate the increasing volumes of our data as our organization expands.	CIO - Lisa Chen
TB-RQ-7	The MIS should empower us to track customer interactions, analyze their preferences, and provide personalized services tailored to their needs.	HCR - David Garcia
TB-RQ-8	We require a comprehensive 360-degree view of each customer's relationship with the bank.	HCR - David Garcia
TB-RQ-9	The MIS system needs to be able to model risk, track regulatory changes, and automatically generate compliance reports.	HRM - Emily Turner

TB-RQ-10	It should be easy to use for our risk analysts.	HRM - Emily Turner
TB-RQ-11	The MIS should assist in pinpointing bottlenecks, streamlining processes, and optimizing resource allocation for us.	HO - Michael Patel
TB-RQ-12	We require real-time dashboards to oversee transaction processing and customer service levels.	HO - Michael Patel
TB-RQ-13	The MIS should support segmentation and targeting, track campaign performance, and provide ROI analysis.	MD - Rachel Wong
TB-RQ-14	It should be able to seamlessly integrate with our customer databases.	MD - Rachel Wong
TB-RQ-15	We need an MIS that can effectively manage workforce data, including employee performance metrics, training needs analysis, and recruitment analytics.	HR - Thomas Anderson
TB-RQ-16	User-friendly reporting tools are crucial for our HR team.	HR - Thomas Anderson

1. **B1 - Identify Requirements are not High-level Requirement**

ID	Requirement Detail	FR/N-FR	Reason
TB-RQ-5	The Management Information System (MIS) should incorporate strong data encryption, stringent access controls, and detailed audit trails to ensure the protection of sensitive financial data.	Functional Requirement	Consistent with the security focus of the case study, MIS should invest in off-the-shelf cybersecurity solutions. Banking operations are required to comply with audit and data protection laws. Basic security measures, such as strong data encryption, strict access controls, and comprehensive auditing processes, are essential and non-negotiable requirements.
TB-RQ-8	We require a comprehensive 360-degree view of each customer's relationship with the bank.	Non-Functional Requirement	We need a comprehensive view of each customer's relationship with the bank to provide the best service and optimize their experience. However, user data tracking and privacy concerns are an issue that needs to be addressed. For now, we need to clarify the requirements and gain a better understanding of privacy regulations before considering this a high-level request.

TB-RQ-11	The MIS should assist in pinpointing bottlenecks, streamlining processes, and optimizing resource allocation for us.	Functional Requirement	The claim "should be easy to use for our risk analysts" is unclear in scope or specifics. Additionally, it doesn't focus on our customers or current problems. Furthermore, there is no note articulating a long-term or long-term strategy. For this reason, this is not considered a high-level requirement.
TB-RQ-14	It should be able to seamlessly integrate with our customer databases.	Functional Requirement	The claim that "the MIS system should support segmentation and targeting, track campaign performance, and provide ROI analysis" has no relevance to current issues or future vision. It only deals with basic financial techniques without addressing future challenges or strategies. This causes this request to not be considered a high-level request.
TB-RQ-16	User-friendly reporting tools are crucial for our HR team.	Functional Requirement	User-friendly reporting tools are valued by our HR team due to their ability to enhance efficiency, guarantee data accuracy, save time, and boost overall satisfaction within the group. However, the current priority is improving quality and prioritizing customer needs, making this requirement not of high-level significance.

2. **B2 - List of requirements needed to build system**

ID	Requirement Detail	FR/N-FR	Reason
TB-RQ-1	The Management Information System (MIS) has the capability to offer real-time analytics on financial performance, customer behavior, and market trends.	Functional Requirement	The MIS must provide real-time analytics on financial performance, customer behavior, and market trends. This requirement is particularly crucial given its recent introduction in Trust Bank's current operations. Additionally, leveraging 4.0 technology, the system should incorporate predictive tools to anticipate market changes. This is vital to prevent being left behind in the face of competition from new entrants and fintech disruptors offering innovative

			solutions. This represents a high-level requirement to ensure the bank's competitiveness and sustainability in the evolving market landscape.
TB-RQ-2	Ensuring the accuracy and timeliness of financial data is crucial for our financial planning and reporting processes.	Functional Requirement	Ensuring the accuracy and timeliness of financial data is paramount for our financial planning and reporting processes. This requirement is underscored by the case study, where even tiny errors in reports due to a large user base led to significant financial losses. In the banking sector, precision is critical not only to prevent financial losses but also to address potential accounting and audit issues. Thus, the high accuracy demanded in banking operations makes this a high-level requirement, essential for maintaining the trust of stakeholders and ensuring the financial stability of the institution.
TB-RQ-3	The Management Information System (MIS) must integrate seamlessly with our accounting systems, ensuring a unified and accurate source of financial data.	Non- Functional Requirement	The integration of the Management Information System (MIS) with our accounting systems is a high-level requirement due to several factors. Firstly, our current accounting systems are substantial, emphasizing the need for seamless integration to maintain operational continuity. Additionally, considering the focus of our new project on data and mobile technologies, a unified source of financial data is crucial for effective decision-making and customer service. Furthermore, the rapidly changing nature of our current issues necessitates a MIS that can adapt swiftly, making it imperative for this integration to be a high-level requirement. This ensures that our MIS can support short-time projects and agile responses to the dynamic challenges we face.

TB-RQ-4	Additionally, we require customizable financial dashboards to monitor essential key performance indicators.	Functional Requirement	The need for customizable financial dashboards to monitor key performance indicators is a high-level requirement for several compelling reasons. Firstly, in today's fast-paced business environment, it's crucial to monitor rapidly changing market trends to make timely and informed decisions. Customizable financial dashboards allow us to adapt to these changes swiftly. Secondly, real-time analytics and risk monitoring are vital components of modern business strategies. Having access to real-time data enables us to analyze market shifts as they happen and respond proactively. This proactive approach to risk management is essential for ensuring the stability and resilience of our operations. Considering the dynamic nature of the market and the imperative for real-time insights, the need for customizable financial dashboards becomes a high-level requirement, enabling us to stay competitive and make well-informed strategic decisions.
TB-RQ-6	Furthermore, it should be scalable to accommodate the increasing volumes of our data as our organization expands.	Non-Functional Requirement	The scalability of the Management Information System (MIS) to accommodate the increasing volumes of our data is a high-level requirement for several reasons. Firstly, considering our case study where data is stored in silos, a scalable MIS is necessary to break down these barriers and create a unified data ecosystem. This ensures that data can be accessed and utilized efficiently across the organization. Secondly, with the introduction of new services, the rate at which data is growing has accelerated. A scalable MIS is essential to cope with this rapid growth in data volumes, ensuring that our systems can handle the

			influx of information without compromising performance or efficiency. Moreover, preparing our big data storage for analytics is crucial for gaining valuable insights from our data. A scalable MIS allows us to store, manage, and analyze large datasets effectively, enabling advanced analytics that can drive strategic decision-making. Given the need to break down data silos, accommodate growing data volumes, and prepare for advanced analytics, the scalability of the MIS becomes a high-level requirement. This ensures our organization can handle increasing data demands as we expand and innovate
TB-RQ-7	The MIS should empower us to track customer interactions, analyze their preferences, and provide personalized services tailored to their needs.	Functional Requirement	
TB-RQ-9	The MIS system needs to be able to model risk, track regulatory changes, and automatically generate compliance reports.	Functional Requirement	The requirement for the MIS system to model risk, track regulatory changes, and automatically generate compliance reports represents a high-level necessity for several reasons. Firstly, this need has been declared in our current issues, emphasizing its immediate relevance to our organizational challenges and goals. Secondly, proactively modeling risk and tracking regulatory changes help us reduce potential risks before they escalate, providing a proactive approach to risk management. By identifying and addressing potential risks in real-time, we can minimize the impact on our operations, reputation, and financial stability.

			Furthermore, having the capability to automatically generate compliance reports ensures that we meet regulatory requirements efficiently and accurately. Instead of reacting after the fact, this proactive approach allows us to stay ahead of compliance obligations, mitigating the risks associated with regulatory non-compliance. Given the critical role of risk management, regulatory compliance, and proactive decision-making, the ability of the MIS system to model risk, track regulatory changes, and automatically generate compliance reports is a high-level requirement essential for our organization's stability and growth.
TB-RQ-11	The MIS should assist in pinpointing bottlenecks, streamlining processes, and optimizing resource allocation for us.	Non- Functional Requirement	The MIS must assist in identifying bottlenecks, streamlining processes, and optimizing resource allocation. This is a high-level requirement due to the presence of operational inefficiencies and the scale of our organization. Optimization is crucial for improving efficiency and maintaining competitiveness, making it imperative for our MIS to play a central role in these processes.
TB-RQ-12	We require real-time dashboards to oversee transaction processing and customer service levels.	Functional Requirement	The need for real-time dashboards to monitor transaction processing and customer service levels is a high-level requirement due to the lack of real-time insights. In today's fast-paced business environment, timely access to data is essential for making informed decisions and ensuring excellent customer service. Real-time dashboards provide immediate insights, allowing us to respond swiftly to customer needs and market trends, making them a critical requirement for our organization.

TB-RQ-15	We need an MIS that can effectively manage workforce data, including employee performance metrics, training needs analysis, and recruitment analytics.	Functional Requirement	The requirement for an MIS to effectively manage workforce data, including employee performance metrics, training needs analysis, and recruitment analytics, is a high-level necessity. Limited customization and operational inefficiencies highlight the need for a robust system that can tailor to our specific requirements. Efficient management of workforce data is pivotal for organizational success, making it imperative to address these limitations and ensure a high-quality MIS that meets our unique needs.

3. **B3 - MoSCoW/Timebox to prioritize the requirements**

   Assumption: Assume that the project development team consists of 8 members and each team member works 5 days per week, 8 hours per day for 3 months.

   - **Total effort:** 8 (member) * 8 (work hours/day) * 5 (day/week) * 4 (weeks) * 3 (months) = 3840 (Hour)

3.1. TimeBox

ID	High level Requirements	Estimation (Hour)	Break tasks
TB-RQ-1	The Management Information System (MIS) has the capability to offer real-time analytics on financial performance, customer behavior, and market trends.	168	During the first 2 weeks, we will focus on reading data from databases (18 hours) and developing complex data analysis models (64 hours). Next, the next 2 weeks will be spent developing the front end, including creating the display page for analytics (32 hours) and implementing real-time updates using socket.io (32 hours). The fifth week will be devoted to testing the functionality of the system (32 hours), followed by a week of adjustments, fixes, and improvements (20 hours). Finally, week six will include documentation and report preparation (18 hours), and a

			final review along with a demonstration for the client (10 hours). A 20-hour flex period during the seventh week will be reserved for unforeseen issues. This way, we will complete the project in a total time of 168 hours, while ensuring efficiency
TB-RQ-2	Ensuring the accuracy and timeliness of financial data is crucial for our financial planning and reporting processes.	336	To ensure the accuracy and timeliness of financial data, we spend a total of 336 hours on the planning and analysis process. During the first 4 weeks, we will spend (128 hours) collecting and verifying financial data from different sources. Next, (160 hours)will be spent over the next five weeks on further analysis of this data, including examining transactions, classifying data and building predictive models. Finally, the last (48 hours)will be spent comparing data and writing the final report. This ensures that we have enough time to ensure accuracy and timeliness in our financial planning and reporting processes.
TB-RQ-3	The Management Information System (MIS) must integrate seamlessly with our accounting systems, ensuring a unified and accurate source of financial data.	520	To ensure smooth integration between our Management Information System (MIS) and accounting systems, ensuring consistent and accurate financial data, we spent a total of 520 hours on the process This.

			During the first 6 weeks, we spent (200 hours) mastering knowledge of the current accounting system and MIS, and analyzing the most optimal integration. Next, (280 hours)will be spent over the next 7 weeks implementing the integration. This process includes identifying and solving technical problems, building interfaces between the two systems, and testing integration to ensure coherent connectivity. Finally, the final (40 hours) will be spent on final evaluation, data cleaning, and writing user documentation. This ensures that the integration will be thorough and smooth, fully satisfying our need for consistency and accuracy in our financial data sources.
TB-RQ-4	Additionally, we require customizable financial dashboards to monitor essential key performance indicators.	400	To meet the requirements of creating customizable financial dashboards to track key key performance indicators, we spent a total of 400 hours on the process.In the first five weeks, we spent 180 hours understanding key performance indicators, customization requirements, and building a plan for the financial dashboard. Next, over the next 8 weeks, we spent 200 hours developing the dashboard, including building interactive elements, customizing the user interface,

			and connecting data. This process also includes ongoing testing and adjustments to ensure panel compatibility and performance. Finally, the final 20 hours will be spent on final evaluation, interface optimization, and user documentation writing. This ensures that the financial dashboard will meet our custom requirements and provide accurate and flexible management information.
TB-RQ-6	Furthermore, it should be scalable to accommodate the increasing volumes of our data as our organization expands.	420	To meet the system's scalability requirements to accommodate increased amounts of data as our organization expanded, we spent a total of 420 hours on this process. During the first five weeks, we spent 200 hours gaining an understanding of current data scale and future scaling requirements. Next, over the next 7 weeks, we spent 180 hours designing and implementing scaling solutions. This includes choosing the right technologies, building scalable databases, and designing user interfaces to support large amounts of data. Finally, the last 40 hours will be spent on extensive testing, performance tuning, and writing user documentation. This ensures that the system will

			have the flexibility to scale and handle large amounts of data as our organization grows.
TB-RQ-7	The MIS should empower us to track customer interactions, analyze their preferences, and provide personalized services tailored to their needs.	520	To meet the demands of tracking customer interactions, analyzing their preferences, and providing personal service customized to their needs, we spent a total of 520 hours on this process. During the first 6 weeks, we spent 240 hours collecting and verifying customer data, understanding their requirements, and building an analytics plan. Next, over the next 8 weeks, we spent 240 hours developing analytics tools, building predictive models, and implementing personalized solutions. This work includes customizing user interfaces to reflect customer preferences and connecting systems to deliver personalized service. Finally, the last 40 hours will be spent testing, tuning, and writing user manuals. This ensures that we have enough time to build robust systems capable of tracking customer interactions and providing personalized service customized to their needs.
TB-RQ-9	The MIS system needs to be able to model risk, track regulatory changes,	350	To meet the requirements of risk modeling, tracking regulatory changes, and

	and automatically generate compliance reports.		automatically generating compliance reports, we spent a total of 320 hours on this process. During the first four weeks, we spent 160 hours understanding risk modeling and regulatory monitoring requirements and developing an implementation plan. Next, over the next 4 weeks, we spent 160 hours developing and implementing tools that model and automate compliance report generation. This work includes building risk prediction models, setting up alerts for regulatory changes, and connecting systems to generate automated reports. Finally, the last 40 hours will be spent testing, tuning, and writing user manuals. This ensures that the system will be able to effectively model risks, track regulatory changes and meet compliance reporting requirements automatically and accurately.
TB-RQ-11	The MIS should assist in pinpointing bottlenecks, streamlining processes, and optimizing resource allocation for us.	250	To help identify stagnation points, optimize processes, and improve resource allocation, we spent a total of 250 hours on this process. During the first 3 weeks, we spent 100 hours analyzing and defining process problems, identifying stagnation points and developing optimization

			plans. Next, over the next 2 weeks, we spent 100 hours implementing optimization solutions, including setting up automated rules, improving processes, and setting up monitoring tools. Finally, the last 50 hours will be spent testing, tuning, and writing user manuals. This ensures that the system will be able to identify problems, optimize processes and improve resource utilization in an efficient and flexible manner.
TB-RQ-12	We require real-time dashboards to oversee transaction processing and customer service levels.	350	To monitor transaction processing and customer service levels in real time, we spent a total of 350 hours on this process. During the first 4 weeks, we spent 140 hours understanding the requirements, gathering data, and building an implementation plan. Next, over the next five weeks, we spent 180 hours developing and implementing real-time dashboards, including connecting to data sources and setting up real-time update mechanisms. Finally, the last 30 hours will be spent testing, tuning, and writing user manuals. This ensures that the real-time dashboard will operate accurately and dynamically,

			helping us monitor trading processes and improve customer service levels effectively.
TB-RQ-15	We need an MIS that can effectively manage workforce data, including employee performance metrics, training needs analysis, and recruitment analytics.	400	To effectively manage HR data, including employee performance metrics, training needs analysis, and recruitment analytics, we spent a total of 400 hours on this process. During the first five weeks, we spent 200 hours understanding detailed requirements, gathering data, and building an implementation plan. Next, over the next 6 weeks, we spent 180 hours developing and implementing an HR data management system, including building performance reports, analyzing training needs, and optimizing recruitment process. Finally, the last 20 hours will be spent testing, tuning, and writing user manuals. This ensures that the HR data management system will meet detailed requirements and provide accurate and flexible HR management information.

3.2. MoSCoW

ID	High level requirement	MoSCoW	Reason for Priotization
TB-RQ-1	The Management Information System (MIS) has the capability to offer real-time analytics on financial performance,	Must Have	The prioritization of this requirement is paramount due to multiple compelling reasons. Firstly, it stands as a pivotal goal in the implementation of the new system outlined in the case study, emphasizing its strategic

	customer behavior, and market trends.		importance in shaping the future landscape of our operations. Secondly, the explicit endorsement from the CEO of Trust Bank elevates its status to the highest priority level, underlining its critical role in fulfilling the organization's objectives as envisioned by the top leadership. Furthermore, this requirement directly addresses ongoing challenges faced by Trust Bank, as depicted in the case study. By providing a solution to these challenges, it promises to enhance our operational efficiency and effectiveness significantly. Additionally, in a market environment characterized by rapid changes and the continuous expansion of data, this requirement becomes indispensable. The Management Information System (MIS) tool not only ensures swift and accurate analysis but also prevents time-intensive manual processes, thereby allowing us to adapt promptly to market fluctuations and maintain a competitive edge. In light of these factors, this requirement is unequivocally classified as a "Must Have." Its implementation is not just essential; it is imperative for the success, efficiency, and competitiveness of Trust Bank, both in the present and in the face of future challenges and opportunities.
TB-RQ-2	Ensuring the accuracy and timeliness of financial data is crucial for our financial planning and reporting processes.	Must Have	Ensuring the accuracy and timeliness of financial data is indisputably a "Must Have" for our organization due to its profound impact on various critical aspects of our operations. Firstly, accurate financial data forms the bedrock of reliable decision-making, ensuring that strategic choices align with our organizational objectives. Secondly, it is imperative for meeting stringent legal and regulatory requirements, safeguarding us from potential legal ramifications and upholding our reputation.Moreover, accurate

			financial data fosters investor confidence by providing a clear and truthful picture of our financial health, thereby maintaining our market credibility and attracting investments. Additionally, it plays a pivotal role in strategic planning, enabling us to identify trends, foresee future scenarios, and make well-informed decisions about our investments and resources.Operational efficiency is greatly enhanced when financial data is precise. Teams can focus on strategic tasks, unhindered by the need to correct errors, thus improving overall productivity. Furthermore, accurate financial data is essential for robust risk management, allowing us to identify potential financial risks early and develop effective mitigation strategies.Above all, accuracy in financial reporting builds credibility and trust. It establishes our organization as transparent and reliable, nurturing positive relationships with stakeholders, customers, and partners. Therefore, ensuring the accuracy and timeliness of financial data isn't just a preference—it's an absolute necessity, safeguarding our financial health, compliance, strategic decisions, and overall reputation.
TB-RQ-3	The Management Information System (MIS) must integrate seamlessly with our accounting systems, ensuring a unified and accurate source of financial data.	Must Have	Seamless integration of our Management Information System (MIS) with our accounting system is not just a wish, but a necessity. This ensures consistent and accurate financial data, helping us make decisions based on real-time information and optimize operational performance. This seamless integration not only enhances our efficiency but also helps ensure regulatory compliance and create a competitive advantage in a competitive market.
TB-RQ-4	Additionally, we require customizable financial dashboards to monitor	Must Have	Requiring a customizable financial dashboard is indispensable for many important reasons. First, it provides flexible and accurate tracking of key

	essential key performance indicators.the suitable standards for each category		performance indicators. Second, having a personalized financial dashboard allows us to tailor to standards appropriate to each category, ensuring that we are tracking the parameters that matter in the most accurate way. Furthermore, this dashboard is an important tool that helps us better understand financial performance and inform strategic decisions. In short, the ability to customize financial dashboards is not only necessary, but is absolutely required for the flexibility, accuracy and efficiency of our financial management.
TB-RQ-6	Furthermore, it should be scalable to accommodate the increasing volumes of our data as our organization expands.	Must Have	System scalability is not only a desire but also an indispensable requirement. Faced with organizational expansion and significantly increased data volumes, having a scalable system is important. This not only helps us process current data but also prepares for the future, helping us remain productive and reliable as our organization grows and expands.
TB-RQ-7	The MIS should empower us to track customer interactions, analyze their preferences, and provide personalized services tailored to their needs.	Must Have	MIS requirements that allow tracking customer interactions, analyzing their preferences and providing personalized services are considered indispensable for a variety of reasons. First and foremost, tracking customer interactions helps us understand them better, create a better experience, and strengthen relationships. Analyzing customer preferences helps us predict their needs, providing products and services that they like and need. Service personalization not only enhances customer satisfaction but also creates a competitive advantage, builds loyalty and helps us maintain long-term relationships with customers. This is not only a wish, but also an indispensable requirement to build a close and long-term relationship with customers.
TB-RQ-9	The MIS system needs to be able to model risk, track	Should Have	Requiring an MIS system capable of modeling risk, tracking regulatory changes, and

	regulatory changes, and automatically generate compliance reports.		automatically generating compliance reports is not just a desire, but an indispensable requirement. This ensures that we can assess and predict potential risks, keep up with changes in regulatory regulations, and automatically generate accurate and timely compliance reports. Automation in handling these tasks not only helps us save time and resources, but also ensures that we always maintain regulatory compliance and compliance, which is important to protect reputation and trust of customers and partners.
TB-RQ-11	The MIS should assist in pinpointing bottlenecks, streamlining processes, and optimizing resource allocation for us.	Should Have	Asking for an MIS system that helps identify dead spots, optimize processes, and improve resource allocation is not just a dream, but an indispensable requirement. This helps us identify bottlenecks in the workflow, reduce waste and optimize resource use. By optimizing processes and allocating resources more effectively, we can increase productivity, reduce costs and provide better service to customers. This not only helps us improve efficiency but is also key to achieving agility and competitiveness in today's challenging business environment.
TB-RQ-12	We require real-time dashboards to oversee transaction processing and customer service levels.	Could Have	Requiring a real-time dashboard to monitor transaction processing and customer service levels is not only a good option, but also a requirement that can be considered. By providing immediate information about transactions and customer support levels, we can increase monitoring, resolve issues promptly and improve customer experience. This helps us capture changes in customer needs as they happen, helping us adapt quickly to market requirements and provide better service in a competitive business environment.
TB-RQ-15	We need an MIS that can effectively manage	Could Have	Requiring an MIS capable of effectively managing HR data, including employee performance

	workforce data, including employee performance metrics, training needs analysis, and recruitment analytics.		metrics, training needs analysis, and recruiting analytics, is not just a desire, but a necessity. an option to consider. This way, we can collect important HR-related data to evaluate performance, train employees as needed, and optimize the recruitment process. Accurate HR information management helps us improve the organization, increase productivity and create a positive work environment. Although not a mandatory requirement, the ability to effectively manage HR data provides many benefits in optimizing resources and meeting organizational needs.

- **Must have:** 3714 (Hour) * 64% = 2377 (Hour)
- **Should have:** 3714 (Hour) * 16% = 594 (Hour)
- **Could have:** 3714 (Hour) * 20% = 743 (Hour)

MoSCoW rule: 60:20:20
the prioritization satisfy the MoSCoW rule with the scale nearly of Musthave:Should have:Could have ~ 60:20:20.
the project can be finished on time as the estimation plan with the MoSCoW prioritization

Section C: Legal, Social, Ethical and Professional issues

1. **C1 - Role of the Data Controller within the organization**
   - **Introduce Data Controller**

   In today's world, data is considered one of the most valuable assets for organizations. As organizations collect and handle more data, effectively managing this data while safeguarding individuals' privacy becomes increasingly crucial. This is where the role of a Data Controller becomes significant.

   A Data Controller is an individual or organization responsible for determining the purposes and methods of processing personal data. Simply put, they decide what data needs to be collected, how it will be processed, and for what purposes it will be used.

   The Data Controller is accountable for ensuring that personal data is processed in compliance with relevant data protection regulations, such as the European Union's General Data Protection Regulation (GDPR). Companies must implement appropriate

technological and organizational measures to ensure that personal data is processed securely, preserving individuals' privacy.

Additionally, the Data Controller is responsible for ensuring that individuals have access to their personal data and can exercise their rights, such as the right to data rectification or deletion.

The role of the Data Controller is crucial in any business that processes personal data, as it ensures that data is handled legally, ethically, and securely.

To sum up, the Data Controller is in charge of determining the purposes and methods of processing personal data:

- Ensuring that personal data is processed in line with applicable data protection laws.
- Implementing suitable technological and organizational measures to protect the security of personal data.
- Providing individuals with the ability to exercise their rights regarding their personal data.

By appointing a Data Controller, companies can verify that they are processing personal data responsibly and in compliance with regulations, while also safeguarding individuals' privacy.

- **Data Controller in Trust Bank (TB)**

  Trust Bank (TB) is a company dedicated to integrating legal, social, ethical, and professional considerations (LSEPI) into its daily operations. To achieve this, TB must appoint a Data Controller responsible for managing the company's data processing activities.
  Every organization involved in collecting, processing, and maintaining personal data is required to have a Data Controller. The primary role of the Data Controller is to ensure that the company adheres to relevant data protection regulations, such as the EU's General Data Protection Regulation (GDPR) and the United Kingdom's Data Protection Act 2018.
  The Data Controller's key responsibilities include ensuring that personal data is processed in a legal, fair, and transparent manner, while respecting individuals' rights. Additionally, the Data Controller must confirm that TB has established comprehensive policies and procedures to safeguard personal data against loss, theft, or unauthorized access.
  At TB, the Data Controller will oversee the company's data protection policies and procedures. This includes ensuring compliance with all applicable data protection laws and processing personal data in a legal, fair, and transparent

manner. The Data Controller will be tasked with implementing suitable technological and organizational measures to protect personal data from unauthorized access, loss, or theft.

One of the primary duties of the Data Controller is to develop a clear and effective privacy policy for TB. This policy should outline how the company collects, processes, and retains personal data, as well as individuals' rights regarding their data. It is the Data Controller's responsibility to ensure that this privacy policy is easily accessible, transparent, and regularly reviewed and updated for accuracy.

Another crucial role of the Data Controller is to establish robust data protection policies at TB, covering areas such as data subject access requests (DSARs), data breaches, and data retention procedures. To maintain the effectiveness and relevance of these processes, the Data Controller must ensure they are documented, communicated to staff, and periodically reviewed.

Additionally, the Data Controller must guarantee that TB provides comprehensive data protection training for all employees. This training should encompass fundamental data protection principles as well as specialized topics such as handling DSARs and managing data breaches. It is the Data Controller's responsibility to ensure that all employees understand their data protection obligations and recognize the importance of securing personal data.Furthermore, the Data Controller will oversee TB's relationships with third-party data processors. This involves ensuring that appropriate contracts with data processors, including suitable data protection clauses, are in place.In summary, the Data

Controller plays a vital role in any organization dealing with personal data. TB's Data Controller will ensure compliance with relevant data protection laws, process personal data in a legal, fair, and transparent manner, and implement appropriate technical and organizational measures to protect personal data from loss, theft, or unauthorized access.

2. **C2 – Legal, Social, Ethical and Professional issues that TB may faced with**

Companies are facing growing challenges in terms of legal, social, ethical, and professional aspects. Addressing these concerns is essential to ensure that the company operates in a socially responsible and legally compliant manner (UKEssays, November 2018). TB, similar to other organizations, is not exempt from these challenges. It is crucial to handle these issues prudently to prevent adverse consequences.

- **Legal issues:**

  In the context of implementing its new management information system, Trust Bank (TB) must carefully address several legal considerations:

Data Protection and Privacy Laws: Trust Bank is obligated to adhere to data protection and privacy regulations specific to its operating regions, such as the GDPR in the European Union. Compliance with these laws is vital to ensure the lawful collection, processing, and storage of customer data. Non-compliance may lead to substantial fines and reputational damage.

Compliance with Financial Regulations: Trust Bank operates in a heavily regulated industry and must strictly comply with financial regulations and reporting standards. This includes adhering to anti-money laundering (AML) laws, know your customer (KYC) regulations, and other industry guidelines. Violations could result in legal consequences and financial penalties.

Intellectual Property Rights: If Trust Bank is developing proprietary software or unique algorithms, protecting intellectual property rights is essential. This involves securing patents, copyrights, and trademarks to safeguard innovations from unauthorized use.

Contractual Agreements: Trust Bank must pay close attention to the legal aspects of contracts with technology vendors, third-party service providers, and consultants involved in the new system's development. Clear contracts outlining responsibilities, deliverables, timelines, and confidentiality clauses are crucial to prevent disputes.

Cybersecurity Laws: Trust Bank must comply with cybersecurity laws and standards to mitigate the increasing threat of cyber-attacks. Implementing robust security measures and promptly reporting data breaches in accordance with legal requirements is essential. Failure to do so can result in legal consequences and harm the bank's reputation.

Consumer Protection Laws: Trust Bank, as a financial services provider, must adhere to consumer protection laws. This involves transparent communication with customers about their rights, service terms and conditions, and proper handling of complaints and disputes in line with the law.

Accessibility Standards: If Trust Bank develops digital interfaces, ensuring compliance with accessibility standards and regulations is imperative. This guarantees that individuals with disabilities can access digital services without discrimination.

Thoroughly addressing these legal issues is pivotal to the success of Trust Bank's new management information system and its overall operations. Neglecting these considerations could lead to legal liabilities, financial losses, and damage to the bank's reputation.

- **Ethical issues:**

  In the context of implementing its new management information system, Trust Bank must navigate several ethical considerations:

  Customer Privacy: Trust Bank must handle customer data ethically, ensuring responsible and transparent use for intended purposes. Protecting customer privacy is paramount to maintaining ethical standards.

  Data Accuracy and Integrity: Trust Bank must maintain data accuracy and integrity to avoid unethical practices, ensuring that information is represented truthfully and transparently.

  Fair Treatment: Ethical principles demand fair treatment of customers, employees, and stakeholders. Avoiding preferential treatment, discrimination, or biased decision-making is essential to uphold fairness.

  Transparency: Trust Bank should be transparent about its operations, fees, and policies. Misleading customers or stakeholders erodes trust and raises ethical concerns.

  Conflict of Interest: Trust Bank's employees and decision-makers should avoid conflicts of interest. Ethical dilemmas arise if personal interests unduly influence professional decisions, potentially leading to unfair advantages.

Social Responsibility: Trust Bank has a social responsibility to contribute positively to communities. Ethical banking includes initiatives like financial literacy programs and environmentally sustainable practices that benefit society.

Whistleblower Protection: Ensuring a safe environment for employees to report unethical behavior is crucial. Trust Bank should protect whistleblowers, fostering an ethical organizational culture.

Cybersecurity and Data Protection: Ethical considerations in cybersecurity involve safeguarding customer data from cyber threats. Trust Bank must invest in robust cybersecurity measures, ethically handling sensitive information and protecting customers from potential breaches.

Addressing these ethical concerns is vital for maintaining Trust Bank's reputation and integrity. Upholding high ethical standards not only builds trust but also contributes to the bank's long-term success and positive societal impact.

- **Professional Issues**

  In implementing a new management information system at Trust Bank, many professional issues need to be carefully considered. This includes ensuring employees have adequate technical skills, adhere to professional ethics, provide high quality customer service, comply with regulations and laws, communicate effectively, work as a team collaboratively, continuously improving and protecting the confidentiality of customer information. These professional standards not only maintain Trust Bank's reputation but also build trust from customers, shareholders and employees.

- **The BCS Code**

  The BCS Code, also known as the British Computer Society Code of Conduct, is a vital framework of ethical guidelines and professional standards for IT practitioners, including those working in financial institutions like Trust Bank. This code outlines essential principles such as integrity, competence, confidentiality, and professional development, which are crucial for IT professionals in maintaining ethical conduct and ensuring responsible use of technology.

For Trust Bank, adherence to the BCS Code is fundamental. IT professionals within the bank must uphold these principles to ensure the security of customer data, maintain the integrity of financial systems, and promote trust among customers and stakeholders. By following the BCS Code, Trust Bank demonstrates its commitment to ethical practices, ensuring the reliability and integrity of its IT services in the ever-changing digital landscape.

- **In conclusion**

  As Trust Bank (TB) integrates Legal, Social, Ethical, and Professional Issues (LSEPI) into its daily operations, the appointment of a Data Controller becomes crucial. This individual will oversee data collection, processing, and storage, ensuring compliance with relevant regulations. Beyond legal obligations, TB must address social concerns like responsible gaming, ethical considerations regarding societal and environmental impact, and professional issues tied to data handling by its employees. By proactively managing these aspects, TB can establish trust among users and stakeholders, ensuring the enduring sustainability of its operations.

Conclusion and assumptions made

- **Conclusion:**

In summary, implementing an integrated system holds the potential to significantly enhance Trust Bank's operational efficiency, reduce costs, and elevate customer service standards. The structured workshop facilitated the collection of high-level requirements, even though some inconsistencies existed. Nonetheless, a comprehensive set of functional and non-functional requirements was established. These requirements were then prioritized using MoSCoW/Timebox rules. Additionally, crucial discussions were held regarding legal, social, ethical, and professional considerations, highlighting the necessity of appointing a Data Controller to ensure compliance with relevant regulations. Trust Bank's attention to these issues is pivotal, ensuring ethical, legal, and socially responsible operations while upholding professional standards.

- **Assumptions Made:**

In this report, it is assumed that the integration of a system will indeed enhance operational efficiency, reduce costs, and improve customer service at Trust Bank. The provided revised set of functional and non-functional requirements is assumed to accurately meet the bank's needs, and the prioritization using MoSCoW/Timebox rules is considered appropriate. Trust Bank is also expected to consider the legal, social, ethical, and professional issues raised and appoint a Data Controller for overseeing data management. The practical examples provided are assumed to be accurate and pertinent to the discussed issues.

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