

ICMAP Pathway exam

Thursday 14 December 2023

Time allowed

4 hours including reading, planning and reflective time.

This question paper is an integrated case study with two questions containing a total of 100 marks and ALL questions must be completed.

All questions contain professional skills marks which are included in the marks shown.

Do NOT open this question paper until instructed by the supervisor.

You must NOT write in your answer booklet until instructed by the supervisor.

This question paper must not be removed from the examination hall.

Paper 1PE

ACCA

Think Ahead

The Association of
Chartered Certified
Accountants

1 **Company background**

Millican AI Solutions (MAS) is a fast-growing company that specialises in developing artificial intelligence (AI) solutions and was founded in 2018 by three computer science graduates. Since then, MAS has recruited a team of engineers and data scientists with the aim of revolutionising the AI industry. MAS now employs 140 staff across its six operational departments.

The MAS management team, comprised of the three founders (Xander Millican, Alisha Clayton and Omar Khan), recently updated and clarified its strategy for the next phase of development. MAS now wishes to embark on a new period of significant growth by exploiting its strength in AI. Xander, the current Chief Executive Officer (CEO) of MAS, has internally branded this next phase as “AI-X”.

AI-X: Mission and strategic objectives

The revised mission statement for MAS is “to be a trusted and strategic partner for clients globally, helping them to use the potential of AI to unlock new opportunities and optimise their operations, and thereby help MAS to achieve sustainable, long-term success”.

MAS has identified the following four objectives to support AI-X and its revised mission:

1. To develop innovative AI products: the primary objective for MAS is to continue innovating and developing AI products that can solve complex business challenges for its clients. MAS define an AI product as using technology “to either perform a task that a human would normally perform or initiate an automated process from a simple question”.
2. To expand market reach: MAS has previously focused on the manufacturing sector but has recently identified additional industries where AI can make a significant impact, such as healthcare, finance, and retail.
3. To foster strategic partnerships: MAS recognises the importance of collaboration and strategic partnerships, and therefore actively seeks alliances with technology companies in various industries to utilise their expertise, knowledge, and customer base to help develop new AI solutions.
4. To attract and retain talent: to sustain its growth plan, MAS places a strong emphasis on attracting and retaining top talent to assemble a world-class team of experts dedicated to driving AI innovation.

MAS plans on securing new bank funding to help to fund the delivery of AI-X.

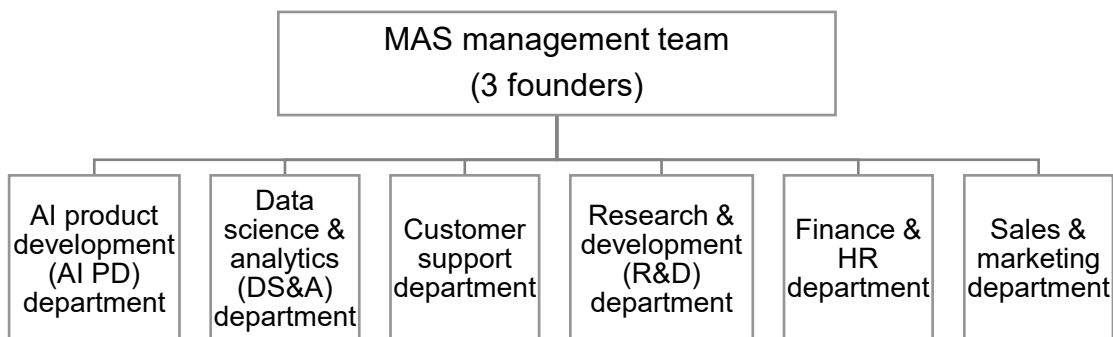
Balanced scorecard

Alisha, currently studying for an MBA, has suggested that the introduction of a balanced scorecard (BSC) may be appropriate for MAS given its revised mission and objectives. She has provided the MAS management team with a proposed set of performance indicators that may be incorporated into its first BSC (Exhibit 1). Alisha has also shared this information with the MAS finance team, as they will be responsible for reporting on the BSC. The finance team have expressed concerns as the information may not be available within existing systems.

The other founders are also unaware of the concept of the balanced scorecard and fear that it may not be suitable for use in MAS. They are concerned that Alisha simply wishes to develop a case study for her MBA studies and, with the recent introduction of AI-X to employees, Xander feels that the introduction of a further new concept, such as the BSC, may confuse employees.

Organisation structure

MAS originally adopted an entrepreneurial organisational structure centred around the three founders, but as MAS has grown, it has developed a functional structure with departments based on the specialised functions within MAS. The current structure is presented below.



MAS needs its employees to work together on customer focused projects, as staff from AI PD, DS&A, and R&D are required to cooperate in the design, testing and development of new AI solutions for clients. The current structure, however, has led to departments being protective of their work and responsibilities, and therefore not willing to share resources or credit for any projects undertaken. The AI PD department is particularly dominant, as its employees believe that MAS's future success depends on them, and other departments should always support them.

It has now reached the stage where the heads of department very rarely communicate with each other, and information sharing is limited to those

occasions when the management team is required to step in and force heads of department to collaborate. Xander has received several emails from key clients commenting that projects appear to be slipping due to increased departmental bureaucracy within MAS. One client also commented that MAS is no longer as proactive as it used to be, especially in terms of providing advice and guidance on new technology and how it may impact its business – “they appear to be more concerned with arguing with each other”. Following this feedback, all current MAS projects are now being led by one of the founders.

The current structure has also had a negative impact on some of the more junior, technical members of MAS staff, as they receive limited exposure to other departments and how AI solutions are designed and developed to meet client needs. The original members of staff back in 2018 were all involved in every client project, which provided an excellent training environment to develop knowledge and skills, and this led to many of these original members becoming the technical experts and high performers in MAS today. The management team is aware that the current structure no longer provides this experience, and given the evolving nature of AI, staff with a broad range of technical knowledge and experience could be MAS’s competitive advantage. The directors are concerned that if this is not addressed, it may lead some employees to leave, and possibly deter new recruits from joining.

MAS is seeking to undergo a reorganisation of its organisational structure to encourage greater integration between the departments and improve overall client satisfaction, which in turn will support the AI-X strategy. Omar believes that a matrix structure may be appropriate.

Manufacturing CPUs for an external market

In the AI industry there are several different hardware devices required for AI tasks and applications. Many of these devices are high-value and MAS uses a range of specialist manufacturers to supply these devices. However, MAS has always manufactured its own Central Processing Units (CPUs) which are a general-purpose processor that can handle a range of tasks. CPUs are used in a wide range of applications beyond AI and therefore in high demand, although they are also manufactured by many different firms.

Xander is considering selling the MAS manufactured CPU (internally referred to as the CP-M) externally to other technology companies, to provide an additional income source for MAS. He would like to operate a trial period of manufacture in 2024 but first needs to understand the current internal cost structure of the CP-M to determine if MAS can be competitive in this market. Xander has requested the finance team to provide cost information for the CP-M and the current average market price for this type of CPU. The information is presented in Exhibit 2.

External advice

You are a consultant and know Xander from past engagements with MAS and he has approached you to provide advice to him and the management team on several strategic and performance management issues faced by MAS.

Exhibit 1: Proposed performance indicators for a MAS balanced scorecard (BSC)

Exhibit 2: CPU information (provided by the finance team)

Exhibit 1: Proposed performance indicators for a MAS balanced scorecard (BSC)

Financial perspective:

- Revenue growth (percentage increase in annual revenue)
- Return on investment (ROI) (the ratio of net profit to the total investment made)

Customer perspective:

- Customer satisfaction (based on an annual customer survey)
- Customer extension (the percentage of customers who buy additional MAS solutions)

Internal process perspective:

- Product development cycle (average time taken from idea to launch of new AI products)
- Quality control (number of defects or errors in the delivered solutions)

Learning and growth perspective:

- Employee satisfaction and engagement (based on an annual employee survey)
- Innovation and research (number of patents filed)

When indicators have been agreed by the MAS management team, the finance team will be responsible for the monthly reporting of BSC performance.

Exhibit 2: CPU information (provided by the finance team)

Current market price of a CPU:

The current average market price for an equivalent CPU to the CP-M is \$99 per unit.

Manufacturers of CPUs would expect to achieve a gross profit margin of 20%.

Cost details for the CP-M based on the previous 12 months:

- CP-Ms produced for MAS - 2,000 units.
- Materials cost \$54 per unit.
- Each CP-M unit will take 0.3 hours of labour at a cost of \$40 per hour.
- Each CP-M unit will use 0.1 hours of machine time at a cost of \$70 per machine hour.
- Each CP-M unit will use 0.05 hours of inspection time at a cost of \$60 per hour.
- The failure rate on average of the CP-M is 3%.
- A failed CP-M will be reworked at a cost of \$40 per unit.

Additional information:

- Proposed packaging cost for external sales \$8.50 per unit.
- Available annual capacity to produce the CP-M is 10,000 units.

Required:

(a) Prepare a briefing paper to the MAS management team that:

- (i) Assesses how each of the proposed performance indicators in Exhibit 1 could be used to measure progress against MAS's revised mission and objectives for AI-X. Where appropriate, include appropriate recommendations on how the indicators may be improved.**

(16 marks)

Professional skills marks are available for demonstrating *commercial acumen* skills in assessing the value of the proposed indicators when monitoring progress against MAS's mission and objectives.

(4 marks)

- (ii) Advises on the potential problems for MAS of implementing a balanced scorecard approach.**

(8 marks)

Professional skills marks are available for demonstrating *scepticism* skills in identifying and explaining the problems MAS may face when implementing a balanced scorecard.

(2 marks)

(b) Prepare a report to the MAS management team that discusses the advantages and disadvantages for MAS of adopting a matrix organisational structure to support AI-X.

(8 marks)

Professional skills marks are available for demonstrating *evaluation* skills in assessing the suitability of a matrix structure to support AI-X.

(2 marks)

- (c) Prepare an email to Xander Millican that calculates, using the cost information in Exhibit 2, the target cost gap for the CP-M and recommend reasons supporting MAS's manufacture of the CP-M for an external market.

(8 marks)

Professional skills marks are available for demonstrating *analysis* skills in using the available information to advise Xander regarding the manufacture of the CP-M.

(2 marks)

(50 marks)

2 Company background

Tingle Automotive (TA) is an established manufacturing company with a history of producing components for combustion engines. An internal combustion engine creates its energy by burning fuel inside the engine, which then powers the working of the engine and its components. Combustion engines have traditionally been used in the production of cars, boats, trains, and airplanes. TA has been operating exclusively in the automotive industry for several decades, supplying components to global car manufacturers. TA has built a reputation for high-quality products, reliability, and innovation in its manufacturing processes.

TA was originally founded by Joseph Tingle and the company's management has remained within the Tingle family, with Joseph's great-grandson, James, now leading the company as its Chief Executive Officer (CEO). James oversees TA's four manufacturing sites across its home country of Jayland and its 4,200 employees.

The current share ownership of TA is outlined below.

	% Shares
James Tingle (CEO)	30%
Danny Wong (sales director)	7.5%
Carmen Nunez (finance director)	7.5%
Steven Tingle (brother of James)	20%
Clare Tingle (sister of James)	20%
A&D Venture Capital Fund (overseas)	15%

TA has a senior management team (SMT) made up of James, Danny Wong, and Carmen Nunez, who meet and report monthly on the performance of TA to all shareholders. There is no formal board structure and no non-executive directors.

James and his two siblings – Steven Tingle and Clare Tingle - each received 20% of TA from their parent's inheritance, with James acquiring further shares based on his executive performance. Steven and Clare are not involved in the running of TA.

A&D Venture Capital Fund is a large investment fund with a significant global portfolio. James meets with A&D on a quarterly basis to discuss TA's performance and plans.

The transition plan to the electric vehicle market

As the automotive industry undergoes a significant change towards the production of electric vehicles (EVs) and more sustainable transportation, the SMT recognises the need to adapt TA's business model to stay competitive and align with the evolving market demands. The SMT believes that moving TA's operations to exclusively focus on manufacturing components specifically designed for EVs will be a strategic move to capture new future opportunities and ensure TA's long-term success.

The SMT has now launched this as a new strategic priority for TA and refer to this as the "transition plan". This will involve the gradual reduction and ceasing of component manufacture for combustion engines and the creation of a new technology-led manufacturing process for EV components, that will also be more environmentally beneficial. TA aims to position itself as a leading provider of EV components.

The transition plan involves reconfiguring TA's production processes, investing in new technologies and machinery, and acquiring the necessary labour expertise to manufacture components tailored to the requirements of EVs. Over time the SMT expects that TA will need to lose up to 25% of its current workforce, due to the more efficient EV manufacturing process and the need to recruit employees with different skills and experience. James has recently appointed Annabel Powell as director of operations, who will have responsibility for the delivery of the transition plan. Annabel previously worked for a global car manufacturer as its vice president of electric vehicle development.

TA values its employees as a key asset and recognises the importance of their engagement and commitment to the transition plan, and therefore Annabel plans on creating an environment that encourages employees to embrace the change and contribute their ideas.

Although this plan will take several years to complete, the SMT is keen to start immediately and use 2024 to help prepare TA for EV component manufacture from 2025. The SMT would like advice on how to best lead the transition plan with its employees.

Stakeholder engagement with the transition plan

At the recent November SMT meeting a discussion took place on how TA should engage with stakeholders regarding the transition plan. An extract from the minutes of the SMT meeting is included in Exhibit 1.

At the end of the meeting, the SMT agreed to commission the services of an external consultant to provide advice and guidance on how best to manage TA's stakeholders regarding its transition plan. The SMT would like to

understand the power and interest of customers, raw material (RM) suppliers and shareholders in relation to the transition plan and how best to engage with each of them. A report would be provided for SMT to consider at the January 2024 meeting.

Plans for the first EV factory

The first stage of TA's transition plan will require an investment in a new factory, designed using the latest technology for the efficient manufacture of components for the EV industry. TA has secured bank funding of \$45 million for the construction of this factory, and it is hoped that any future funding requirements for additional capacity can be justified through successful profitable growth.

In a meeting between James and Carmen, Carmen stated that she was confident that the initial plans for the new factory can be completed within the required budget of \$45 million. However, to keep the initial investment within this budget the factory design incorporates a flat roof structure, which is the cheapest option and will need replacing every five years. The cost of the flat roof is \$7 million, and it is anticipated that the useful life of the factory will be 25 years. To ensure that early year profits for the new EV business are high, Carmen has suggested that TA could account for the factory and roof as a single asset and therefore depreciate the total investment cost over the factory life.

During the meeting James was so happy to hear that the available funding matched the budgeted cost, that he did not question Carmen's comment on depreciation. On reflection, however, he does not fully understand the implications of what Carmen has suggested and therefore he would welcome another perspective.

A TA Integrated Report

The Jayland government is advising companies to provide an integrated report when reporting on their annual performance. Although this is not compulsory, many of the global car manufactures have now adopted some form of integrated report and are encouraging the supply chain to follow.

During a recent planning meeting with Gallen Cars (Gallen) (TA's largest customer), the Gallen finance director requested that TA provide an integrated report in line with Gallen's other key suppliers, who have provided reports using the framework outlined in Exhibit 2. Gallen has welcomed this information as it has provided a broader understanding of each supplier's current position, and reassurance on their ability to partner with Gallen in the future.

James is unaware of integrated reporting and would like external advice on the possible content of TA's report before it is prepared for Gallen.

Advice and guidance

You are an external consultant and qualified accountant, and you have met with James to discuss the proposed transition plan and the associated issues regarding stakeholders, integrated reporting, and the new factory. James has asked for your advice on each of these matters.

Exhibit 1: Extract from the November 2023 SMT meeting

Exhibit 2: Gallen Cars framework for integrated reporting by its key suppliers

Exhibit 1: Extract from the November 2023 SMT meeting

Proposed transition plan

Danny commented that TA should communicate the transition plan to its customers as soon as possible, and especially its top ten customers, who currently represent 72% of TA's annual revenues. Danny is eager to speak with Gallen Cars (16% of current revenue), as Gallen is currently the leading producer of EVs globally, yet sales from Gallen are declining as they no longer view TA as a key supplier.

Carmen also took the opportunity to highlight TA's raw material (RM) suppliers, and a similar need to involve them in TA's transition plan. Danny, however, commented that customers were the priority and RM suppliers would simply need to adapt or TA would buy from elsewhere. To address Danny's view, James asked Carmen to remind SMT of the relationship that TA has with its RM suppliers.

Carmen said "we carefully select our RM suppliers based on factors such as quality standards, reliability, capacity, financial stability, and an alignment with TA's values. We have developed long-term partnerships with our RM suppliers, which are based on collaboration and trust. This allows both parties to work more closely together to meet the evolving needs of our manufacturing processes. Most of our suppliers have invested in their own capacity expansion and in process and environmental improvements to meet our demands".

She further added "we have excellent supply chain integration with the suppliers. This involves sharing our production forecasts, demand patterns, and new product development plans to ensure that there is adequate material availability, and to avoid disruptions. By integrating our systems and processes, we can streamline order processing, inventory management, and logistics to enhance efficiency and reduce lead times, and perform better for our customers. We will continue to require many of the existing raw materials for EV components plus additional new materials, and we expect that both will still be available through the existing supplier network". Danny, somewhat reluctantly, backed down.

James agreed that TA should engage with all its key stakeholders regarding the transition plan, including both customers and RM suppliers, and suggested that TA's shareholders should also be included.

Exhibit 2: Gallen Cars framework for integrated reporting by its key suppliers

Intellectual

Organisational, knowledge-based intangibles, including intellectual property, such as patents, copyrights, and licences; 'organisational capital' such as tacit knowledge, systems, procedures; intangibles associated with the brand and reputation that an organisation has developed.

Human

People's competencies, capabilities and experience, and their motivations to innovate.

Social

The institutions and relationships established within and between each community, group of stakeholders and other networks (and an ability to share information) to enhance individual and collective well-being.

Social and relationship capital includes shared norms, and common values and behaviours; key relationships with customers, suppliers, business partners, and other external stakeholders; an organisation's social licence to operate (i.e. approval from regulators).

Natural

All renewable and non-renewable environmental stocks that provide goods and services that support the current and future prosperity of an organisation. Natural capital includes air, water, land, forests, and minerals.

Required:

(a) Prepare a report to the TA senior management team that:

- (i) Advises on the possible leadership styles that TA may consider when managing the strategic change expected from the transition plan.**

(10 marks)

Professional skills marks are available for demonstrating *commercial acumen* skills in evaluating the leadership styles that may assist TA through the proposed strategic change.

(3 marks)

- (ii) Evaluates the relative power and interest of the following three stakeholder groups when considering TA's transition plan and recommends how TA should engage with each of them.**

- (a) Customers**
- (b) Raw material suppliers**
- (c) Shareholders**

(12 marks)

Professional skills marks are available for demonstrating *evaluation* skills in assessing the relative power and interest of the stakeholders and how best to engage with them.

(3 marks)

- (b) Prepare a briefing paper to James that advises on the content that could be included in an integrated report for TA, using the framework suggested by Gallen Cars in Exhibit 2.**

(10 marks)

Professional skills marks are available for demonstrating *analysis* skills in using the available information to advise on suitable content for an integrated report for TA.

(2 marks)

- (c) Prepare a confidential email to James that advises on the financial reporting and ethical implications of Carmen's proposed depreciation treatment for the new factory.**

(8 marks)

Professional skills marks are available for demonstrating *communication* skills in clearly presenting the financial reporting and ethical implications of the proposed depreciation treatment for the new factory.

(2 marks)

(50 marks)