May and August 2021 Operational Case Study

2019 CIMA Professional Qualification

Full post exam support materials

Below is the full post-exam supporting material for the operational case study exam.

Pre-seen material

May and August 2021 operational case study pre-seen can be found here

Examiner's report (available from 15 October)

The May and August 2021 examiner's report can be found here

Exam variants

- Variant 1 can be accessed here
- Variant 2 can be accessed here
- Variant 3 can be accessed here
- Variant 4 can be accessed here
- Variant 5 can be accessed here
- Variant 6 can be accessed here

Suggested solutions

- Suggested solutions for variant 1 can be accessed here
- Suggested solutions for variant 2 can be accessed here
- Suggested solutions for variant 3 can be accessed here
- Suggested solutions for variant 4 can be accessed here
- Suggested solutions for variant 5 can be accessed here
- Suggested solutions for variant 6 can be accessed here

Marking Guidance (available from 15 October)

- Marking guidance for variant 1 can be accessed here
- Marking guidance for variant 2 can be accessed here
- Marking guidance for variant 3 can be accessed here
- Marking guidance for variant 4 can be accessed here
- Marking guidance for variant 5 can be accessed here
- Marking guidance for variant 6 can be accessed here

If you need any further information please contact cima.contact@aicpa-cima.com or your local office.

Operational Case Study Examination

May / August 2021

Pre-seen material

COVID-19 Statement

This pre-seen and the case study in general (while aiming to reflect real life), are set in a context where the COVID-19 pandemic has not had an impact.

Remember, marks in the exam will be awarded for valid arguments that are relevant to the question asked. Answers that make relevant references to the pandemic or social distancing will, of course, be marked on their merits. In most cases, however, candidates may find it helpful to assume that there are no restrictions to the movement of people, goods or services in place.

Acellerate

Contents:	**Page**

Job and role outline

You are a Finance Officer for Acellerate, a car rental company. Your main role is to support Ethan Tennant, the Finance Manager. Your tasks include preparation of the annual budget, producing the monthly management accounts and providing information to management as required. You also assist with the preparation of the financial statements and deal with any queries regarding financial reporting.

Company information

Company background

The company, Acellerate, is a leading car rental company based in Everland, in Western Europe. Everland has a population of around 72 million and has the E$ as its home currency. In the financial year to 31 December 2020 the company reported sales revenue of E$206.3 million, a decrease of 25% from the previous year. It incurred a loss before tax of E$0.8 million compared to a profit before tax for 2019 of E$11 million. The reduction in revenue and the pre-tax loss arose as a result of a global economic recession which impacted the business throughout most of 2020.

The company was formed in 2002 by Joseph Waller, the current Managing Director. The company's development was initially slow as it faced severe competition from global car rental brands, however between 2010 and 2019 it grew rapidly, exploiting its home-grown credentials and commitment to quality customer service.

The company, operating under the Acellerate brand, provides a high-quality car rental service. Rental fees are generally above those of value-branded car rental companies. It mainly services the business and premium leisure segments of the travel industry.

The company operates a number of sales locations throughout Everland. The sales locations are situated at, or close to, airports and in some off-airport sites. Each sales location is supported by a car maintenance centre which is located close to the sales location. A single maintenance centre may support more than one sales location. Some of the sales locations and maintenance centre properties are owned by the company whilst others are leased.

In response to the reduced demand, and in an effort to lower costs, the number of sales locations was cut in 2020 from 155 to 117. The main closures were in off-airport sites. Acellerate however continues to operate car rental sales locations at most of the airports and largest cities in Everland. Maintenance centres were also closed in 2020 where the sales locations that they supported were closed or where it was decided that the maintenance work could be carried out at another centre.

The company's rental fleet consists of a mixture of company-owned cars and cars subject to repurchase agreements (see the extract from the notes to the financial statements on page 20). Under a repurchase agreement, the manufacturers agree to repurchase the car at a specified price subject to car condition, mileage and holding period requirements. Typically, the holding period for a car is 12 months.

The fleet was reduced during 2020 by a mixture of disposals and non-replacement when the car repurchase agreement expired. It currently has a fleet of 15,000 cars down 4,995 from the previous year. In normal trading conditions, the size of the fleet will vary throughout the year depending on the season. The demand for car rental is at its highest during the summer months.

The actions taken by the company in 2020, such as reducing the fleet size and closing some sales locations and maintenance centres, have proved to be effective in enabling the company to survive the worst effect of the recession. In addition, the failure of some companies operating in the market has provided opportunities for Acellerate. Financial performance for the first quarter of 2021 was in line with budget and the Senior Management Team believes that the company is now in a solid position for future development.

Company services

The company provides car rental services throughout Everland. Customers normally rent a car for 1 day or for a period of up to 1 month. The average daily fee for the car rental varies depending on the length of the rental period and the size and type of car hired.

The company's rental fleet includes a wide variety of types of cars in different sizes from a range of manufacturers. The fleet includes cars with manual and automatic transmission. The fleet cars are mainly diesel and petrol powered but there are also a small number of electric cars. Additionally, it includes a number of "Prestige" cars which are expected to appeal to the business market or to leisure customers who are looking for a bit of indulgence on their vacation. The average monthly car rental fleet size typically peaks in the summer months.

The car rental fee includes basic insurance. The car will have a full tank of fuel on collection and customers are expected to return the car with a full tank. In the event that the car is returned without a full tank, the customer will be charged for the shortfall.

Customers can book the car rental online direct via the company's website or app. Alternatively, the customer can book at the sales location on arrival. Such customers run the risk, especially at busy times, that the sales location will have no cars available of the size and type required.

In addition, car rental can be booked via third parties, including hotels, airlines and other third-party brokers. Acellerate pays a commission on all rentals booked through third parties.

Additional rental services

Long-term car rental: The company offers long-term car hire of periods between 1 month and 3 months. The rental is charged at a fixed fee per month and includes an enhanced level of insurance cover and free additional drivers. There is a restriction on total mileage with an additional fee payable for extra mileage.

Deliver and collect: On payment of an additional fee, the rental car will be delivered at the start of the rental period and collected at the end of the rental period from the customer's home or place of work.

One-way rental: This service allows customers to collect the car from one sales location and return it to another location on payment of an additional fee.

Ancillary products and services

In addition to revenue generated from the car rentals and the additional services detailed above, the company generates revenue from customers through the sales and/or rental of optional ancillary products and services including:

- Collision and loss damage waivers, under which Acellerate agrees to relieve a customer from financial responsibility arising from car damage incurred during the rental.
- Additional / supplementary liability insurance or personal accident / effects insurance products which provide customers with additional protection for personal or third-party losses incurred.
- Products for driving convenience such as roadside assistance services, portable navigation units and child safety seats.

Company strategy

The company aims to grow the business through both the development of new markets and expansion of its range of services.

The main objective is to continue to improve margins by utilising digital technologies to:

- improve asset utilisation;
- improve methods for car disposal using online, direct to consumer and direct to dealer channels;
- achieve fleet cost efficiencies through fleet planning initiatives;
- control costs and increase efficiencies through process improvements.

The people

The company currently employs 885 staff. Most of the staff are employed at the sales locations and maintenance centres (751) and the remainder at Head Office (134).

The directors

The company directors are as follows:

Managing Director: Joseph Waller
Finance Director: Megan Dubois
IT Director: Gavin Hoffman
Marketing Director: Jessica Strauss
Retail Operations Director: Jack Durand
Human Resources Director: Ben Spiegel

The directors have a wide range of previous experience, mainly in the car rental industry. They are relatively young and highly enthusiastic.

Directors' profiles

Managing Director: Joseph Waller

Joseph is responsible for the company's strategy. He worked for a competitor company before founding Acellerate in 2002. Joseph is keen to continue to expand the business through the exploitation of digital technologies. He wants to ensure that an appropriate infrastructure is in place to support future expansion.

Finance Director: Megan Dubois

Megan is a CIMA qualified accountant. Megan was appointed as Finance Director last year and has quickly earned a reputation for keeping a tight rein on the company's finances. She is interested in exploring the use of digital technology to make the finance processes more efficient.

IT Director: Gavin Hoffman

Gavin graduated with a masters degree in Computer Science from Everland University. He has been pivotal in the development of the company's fleet management system which is seen as ground-breaking in its use of digital technology.

Marketing Director: Jessica Strauss

Jessica joined the company in 2010 after previously working as a marketing executive for a retailing company. She is keen to exploit social media marketing both to gain market intelligence and to promote the brand.

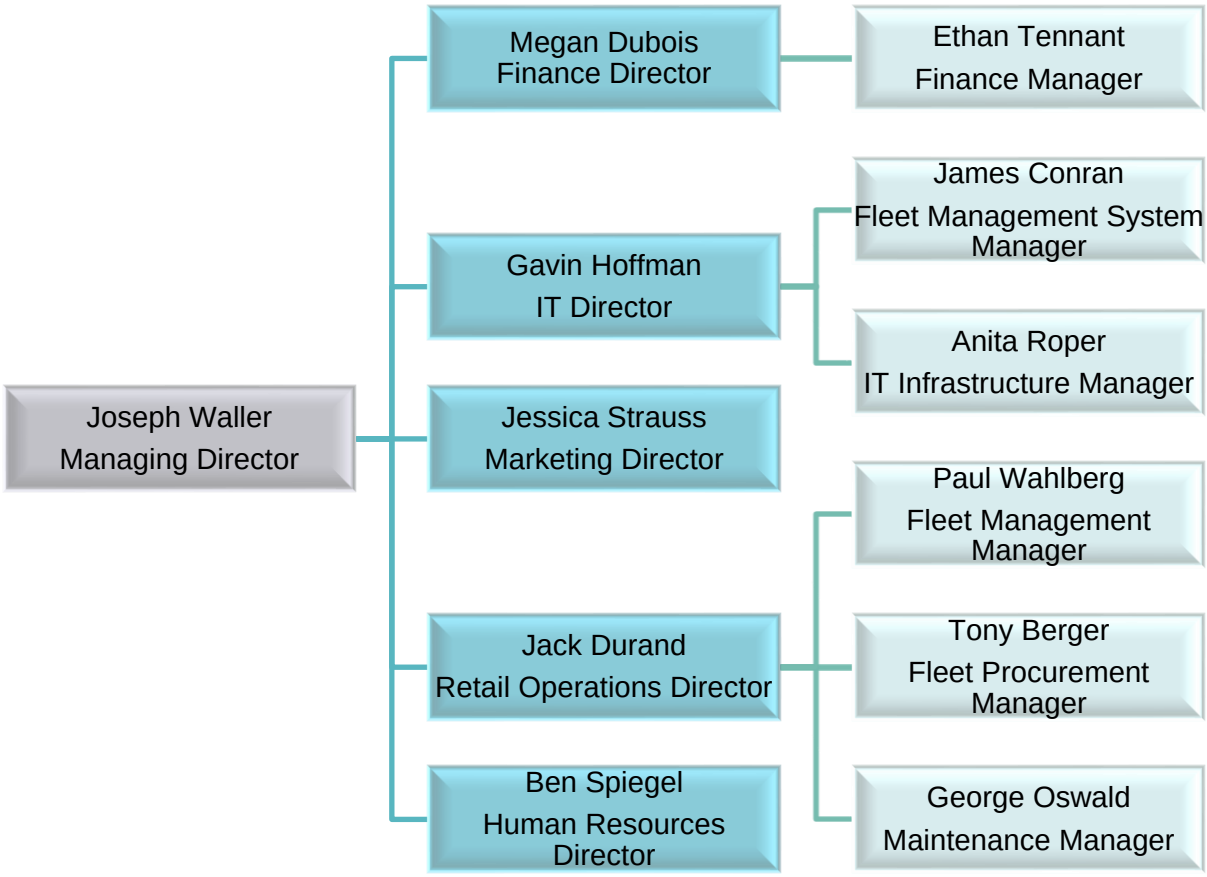
Retail Operations Director: Jack Durand

Jack graduated from Everland University with a masters degree in Sales Management. Jack works closely with Jessica and is keen to further expand the company's services. He is constantly looking at potential new opportunities to meet customer needs.

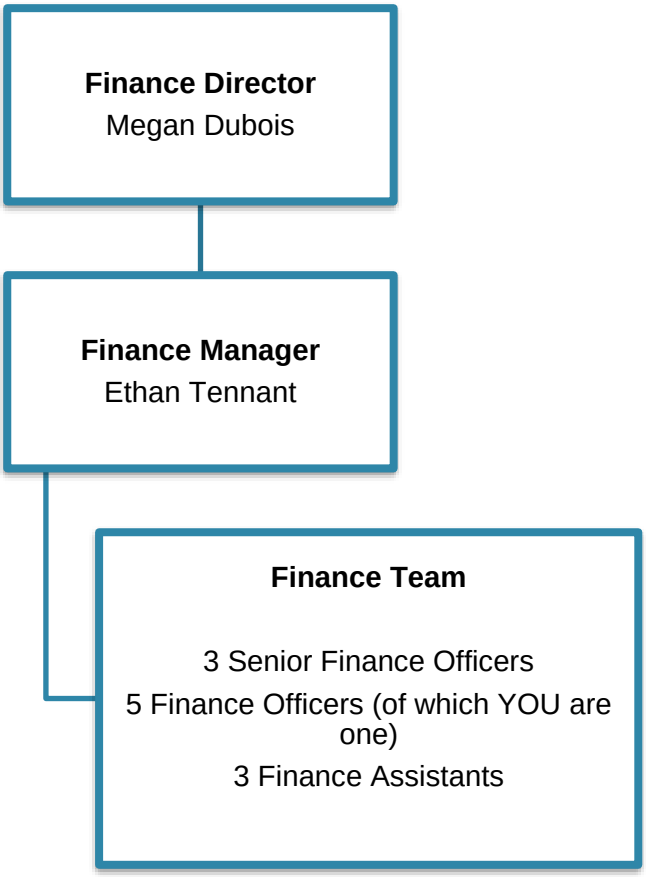
Human Resources Director: Ben Spiegel

Ben has a wealth of experience in Human Resources Management. He believes that the company's employees are its most important asset and that employee development is the key to the company's success.

Extract from Acellerate's organisation chart



The Finance Department



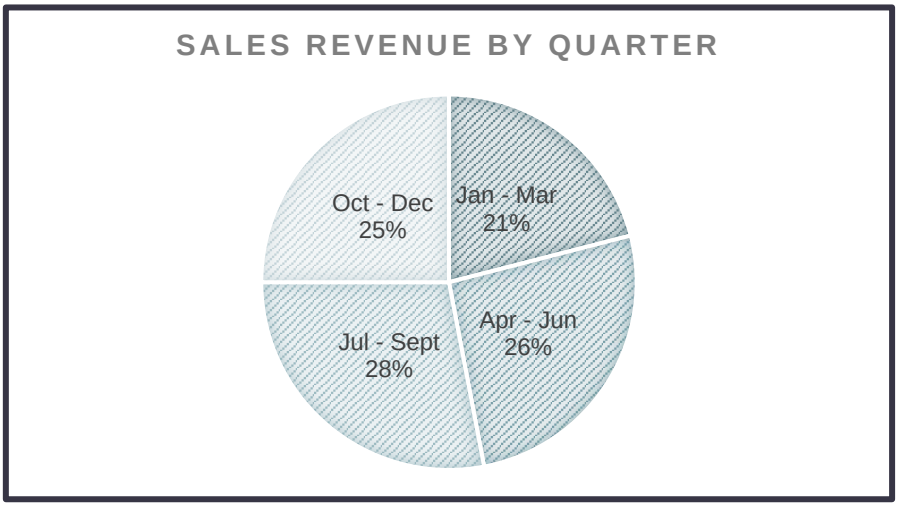
Company operations

Sales

The company operates a number of sales locations throughout Everland. The sales locations are either on-airport – situated at or close to airports, or off-airport – situated in areas such as train stations or city centres. Some of the properties are owned by the company but many of them are leased.

Revenue by customer for 2020 was split 49% business and 51% leisure whilst revenue by market was split 68% on-airport and 32% off-airport.

Sales revenue is subject to seasonal variations in customer demand patterns, with the spring and summer vacation periods representing the company's peak seasons. The fleet size is adjusted over the course of the year to help manage these seasonal variations. Any localised changes in demand are managed through moving cars to different locations where necessary.



The average daily car rental fee varies depending on the length of the rental period and the size and type of car hired. The rental fee per day reduces as the length of the rental period increases. However, there is a cost advantage to longer rental periods since many of the costs are incurred at the end of each rental period, e.g. maintenance and cleaning costs. The company's rental income management system (see below) is fundamental to ensuring that prices are competitive. The average rental period is 6.3 days. This varies by customer type with the average period for leisure customers being longer than that for business customers.

Rental fees are normally paid in advance however the company also provides credit facilities to a number of businesses which regularly rent cars for staff and visitors.

The employees at the sales locations are empowered to resolve most customer issues and receive appropriate training to enable this to happen. Customer satisfaction levels are tracked by sending location-specific surveys to recent customers. These are used to assess services and identify ways to improve the customer service delivery and the overall customer experience.

Maintenance

The quality of the maintenance process is considered to be of vital importance as it is fundamental to customer safety and customer satisfaction. Quick and proper repairs are also critical to ensure fleet utilisation rates are kept as high as possible. To ensure this, the maintenance centres hold inventory of consumables and spare parts.

There are four main occasions when the car is checked by the mechanics in the maintenance centres:

- Checks are carried out when the new car is first delivered by the dealer, this is known as an initial car inspection. Although the dealer will have checked the car prior to delivery, checks are also done by the company's mechanics. The exterior of the car is checked for any scratches and the interior is checked for any tears or other damage. Checks are carried out on fuel, oil, fluids, mirrors, sound system, air conditioner, windscreen wipers, heater, horn, doors and windows.

- Checks are also carried out when the car is returned by the customer after a rental. The customer is asked when returning the car to report any damage or problems. If a car comes back from a rental with a defect noted, the car is given a quality control inspection before the defect is repaired. In this way, mechanics hope to catch other items in need of repair. In addition to all items previously checked in the initial car inspection check, the quality control inspection includes steering and all mechanical items and checks to the tyres, including the spare tyre.

Photo by Tim Mossholder on Unsplash

- Regular servicing is carried out in line with the manufacturers' recommendations under the warranty requirements. The company's maintenance centres have also been approved by the main car manufacturers to carry out rectification work under warranty.

- Accident repairs are carried out by third-party suppliers. When the suppliers complete the body repairs, each car is inspected by an Acellerate mechanic before payment is made.

Fleet management system and fleet purchases and disposals

Fleet management system

The company uses a range of technologies in its car rental operation, all of which are linked to its fleet management system. The fleet management system is a national reservation, rental, fleet control, data processing and information management system. The fleet management system allows thousands of customer enquiries to be processed each day. It provides customers with accurate and timely information about the company's locations, rental rates and car availability, as well as enabling the customer to place or modify reservations.
The company also uses data supplied from the fleet management system and other information management systems to maintain centralised control of major business processes such as pricing, fleet acquisition and logistics.

The fleet management system incorporates two main components:

- The fleet planning model is a comprehensive decision tool which enables the company to develop plans for the acquisition and disposal of its fleet. The fleet planning model provides details on fleet age, mix, mileage and cost reports. This allows management to monitor and change fleet deployment and to optimise its fleet plan based on estimated business levels and available repurchase programmes.

- The rental income management system is designed to enhance profitability by providing greater control of car availability, car movements and pricing. The system monitors and forecasts both car supply and customer demand to support the company's strategy to optimise utilisation rates at each location. The company also utilises systems to gather and report competitive industry rental rates every day using data from third-party reservation systems, which automatically scan rate movements and report significant changes.

Fleet purchases and disposals

In 2020, approximately 45% of the company's rental car fleet was comprised of cars subject to agreements requiring car manufacturers to repurchase cars at a specified price. Cars subject to these agreements are referred to as "programme" cars. The remaining 55% of the fleet are cars not subject to these agreements and referred to as "risk" cars because the company retains the risk associated with the residual value of these cars at the time of their disposal. The fleet purchases are financed using different types of borrowing from major financial institutions. At present, none of the fleet is leased.

The agreement with car manufacturers typically requires the company to pay more for programme cars and retain them in its fleet for a minimum number of months. It imposes certain return conditions, including car condition and mileage restrictions. When the programme cars are returned to the manufacturer, the company receives the price guaranteed at the time of purchase and is therefore protected from fluctuations in the prices of previously owned cars in the wholesale market.

The company disposes of its risk cars largely through car auctions and direct-to-dealer sales. In 2020, it continued to expand the scope of its direct-to-consumer car sales programme to include the sale of risk cars directly to consumers through company-owned second-hand car retail sites in several Everland cities. Direct-to-consumer sales and alternative disposal channels such as online auctions provide the opportunity to maximise car sale prices.

Marketing

Marketing is the responsibility of the company's Marketing Department which employs a range of marketing methods including more traditional marketing media, such as TV and magazines, and social media marketing. The marketing department's main activities are: market research; promoting and advertising the Acellerate brand; raising brand awareness and helping to determine pricing strategies.

The company's website and app are considered important marketing tools and represent its main sales channels. The website and app have been continually developed to ensure visitors are engaging with the content. Both can be accessed in all major European languages. Website and app pages are informative, clear and easily navigated.

The website and app employ data analytics to enable the company to source sales data but also other metrics such as: number of visits; average time on page and "bounce rate" which measures the percentage of visitors accessing the website and leaving without visiting another page. The data analytics also captures data about the customer, such as the customer's home address, age and the reason for the car rental. This data analytics is considered an important source of information to help determine customer preferences and the sales potential of the company's products.

In addition to the data collected from the website and app, an email is sent to customers at the end of each rental period requesting them to complete a survey about their rental experience.

IT

The company makes extensive use of digital technology both to manage its fleet of rental cars and to improve the service offered to its customers.

The recently launched Acellerate mobile app allows customers to reserve, update and cancel reservations, choose their car, exchange or upgrade their car, add ancillary products, extend rentals, return the car with one click and confirm their fuel level at the beginning and end of their rental, using their mobile device.

The company's recently installed rental income management system includes pricing analytics tools to enable it to increase the profits earned per rental day. It plans to continue deploying new technology systems to support management decisions and to enable it to tailor products, services and price offerings to meet customers' needs and react quickly to shifting market conditions.

Finance

The financial information system produces monthly management accounts and annual financial statements. This information system also generates daily and weekly sales revenue and fleet operating cost information.

Budgets are produced on an annual basis. Daily rental fees and operating costs are reviewed as part of the budgeting process and other information to formulate the budgets is obtained from the fleet management system. Individual functional managers have responsibility for setting and achieving budgets. Monthly reporting on actual performance compared to budget is to both the functional managers and the Senior Management Team.

Human resources

The company believes that its employees are fundamental to its success. It is committed to maintaining a professional and supportive workplace. It seeks to support the well-being and growth of its employees by offering development opportunities and training.

The company operates an apprenticeship programme for its maintenance technicians and provides specialised training for staff at different stages of their development. A customer service training programme is also available for customer-facing staff to continually improve the overall customer experience.

Industry analysis

The European car rental industry is fragmented with approximately 65% of the market share being held by five major companies which operate in company-owned or franchised locations throughout the world. The remaining share is held by regional and national companies.

The major companies operate in the market under multiple brands aimed at different target market segments. Other smaller companies will generally operate under a single brand name aimed at one of the market segments.

There are three main types of brands on the market:

- Premium brands: These brands provide high-quality car rental and other mobility solutions at price points generally above value-branded car rental companies. They serve the premium business and leisure segments of the travel industry. They tend to offer more additional service options than lower prices brands and their range of cars will be more extensive particularly at the prestige end of the market.
- Middle segment or value brands: These brands are aimed at the value-conscious consumer. Prices are lower than those of the premium brands, but the level of service and resultant customer satisfaction levels are similar. There tends to be fewer options available in terms of the type of car and the ancillary services offered.
- Low cost or deep-value brands: These brands are aimed at the cost-conscious consumer. Prices are lower than those of the value brands but the services on offer are at a basic level. Customers are likely to be required to pay a relatively high deposit as a guarantee against damage to the car. The business model used by these brands allows companies operating with multiple brands to extend the life-cycle of a portion of their fleet, as they “cascade” cars that exceed certain premium or value-brand age or mileage thresholds to be used by the low cost brands.

The industry, in common with other industries, has suffered a severe setback as a result of the recent global economic recession. Prior to 2020, market experts were predicting an average growth in sales revenue of around 7.5% over the next 5 years, however it is now predicted that the industry will not return to 2019 levels until 2025 and that some car rental companies will not survive.

The car rental sector has gone through some significant changes as a result of the internet and e-commerce:

- Online brokers and travel agents/intermediaries have grown in importance as a distribution channel. Online websites serve as intermediaries between the client and the operator. This is a highly competitive segment where price is the main decision factor. Sales through brokers and intermediaries offer lower margins compared to direct sales due to lower prices and commissions.
- The growth of the value segment, particularly in major tourist markets, e.g. in Southern Europe. Online brokers have facilitated this change allowing small players with a limited, local physical presence to reach a global clientele. A major consequence of this growth is that prices have come under significant pressure.
- Car rental companies have taken advantage of the opportunities provided by technological innovations to simplify the customer experience. This has included self-service kiosks, online check-in and automatic rental pick-ups, all of which makes the rental process quicker and smoother. The issue for the car rental industry is that there are two very distinct customer groups that have very different expectations. Business customers, who are often frequent renters, appreciate automatic rental pick-ups, loyalty points and a global network and are willing to pay for this as a value-adding

service. The leisure segment however is price driven and may be unwilling to pay for these new services as the perceived value added is negligible.

- In the last few years, a number of new services, including car-sharing services, car-club schemes and car-subscription services have come to market, driven by the overall mobility trend.

The next few years is likely to see the industry focus on two main themes which are linked with the increase in demand for more mobility and flexibility: Cars-as-a-Service (CaaS) and connected car technology.

- CaaS offers potential for new business channels including car-sharing services, car-club schemes and car-subscription services (see internet article on page 29).
- Connected technology (see internet article on page 30) allows companies clear insight into how many cars they have available, where they are and the car status. All of this facilitates asset management. Added to this, the use of predictive analytics technology which predicts the likelihood of outcomes based on past data, will minimise the likelihood of car mechanical failures. Connected-car technology also offers the potential for new business models and will provide significant marketing opportunities for the industry.

Extract from the company website: Acellerate.com

The car rental process

Finding our sales counter

If you're picking up a hire car from an airport or railway station, the rental counter might be in the terminal or in a nearby car rental centre. In some locations you will be directed to a free shuttle bus for transfer to the car rental centre.

What you will need to pick up the car

If you have already made a reservation online, you will need a copy of the car rental voucher or the rental reservation number. If you haven't made a reservation, our staff will ask you to complete a reservation form. In either case, you will also need your driving licence, proof of identity (ID card or passport) and a credit card in the main driver's name, in order to pick your car up.

Extras

The counter staff will offer you optional extra insurance which will reduce your excess in the event of a claim or avoid the need to leave a security deposit. It's entirely your choice whether to buy additional insurance or not. It is not a legal requirement. You will also be offered other ancillary products such as additional drivers, child seats or a satnav/GPS device.

Payment

You will pay for the car if you haven't pre-booked, and pay for any extras you've requested or want to add to your rental. The counter staff will also pre-authorise a security deposit on your card, to cover costs if the car gets damaged during your rental.

Signing the rental agreement and getting the key

Photo by Cytonn Photography on Unsplash

Don’t feel rushed into signing the rental agreement: give it a good read-through first. Keep the documents safe: you may need to check something during your rental or need to call the counter or roadside assistance.

Once you’ve signed the agreement, the counter staff will give you the key to your hire car and tell you where to find it.

Take a good look over the car. If you find any issues with it, ask our staff to record the damage before you leave the car park.

Extract from Acellerate's 2020 Financial Statements

Statement of profit or loss for the year ended 31 December	2020 E$000	2019 E$000
Revenue	**206,278**	**275,037**
Operating expenses:		
Fleet operating costs	**(122,853)**	**(163,806)**
Personnel costs	**(40,400)**	**(47,529)**
Network and Head Office costs	**(18,914)**	**(21,919)**
Non-car related depreciation and amortisation	**(11,438)**	**(13,790)**
Operating profit	**12,673**	**27,993**
Finance charges	**(13,496)**	**(17,008)**
(Loss) / profit before tax	**(823)**	**10,985**
Taxation	**227**	**(1,810)**
(Loss) / profit for the year	**(596)**	**9,175**

Statement of financial position as at 31 December

	2020 E$000	2019 E$000
Non-current assets		
Property, plant and equipment	**12,488**	**15,611**
Right-of-use assets	**23,911**	**31,559**
Intangible assets	**8,451**	**10,564**
	44,850	**57,734**
Current assets		
Inventory	**2,018**	**2,690**
Rental fleet	**219,093**	**292,123**
Rental fleet related receivables	**65,958**	**87,944**
Trade and other receivables	**36,615**	**48,820**
Cash and cash equivalents	**43,921**	**58,562**
	367,605	**490,139**
Total assets	**412,455**	**547,873**
Equity and liabilities		
Share capital	**910**	**910**
Share premium	**4,737**	**4,737**
Retained earnings	**15,043**	**15,639**
Total equity	**20,690**	**21,286**
Non-current liabilities		
Borrowings	**100,271**	**133,696**
Lease liabilities	**11,546**	**15,395**
	111,817	**149,091**
Current liabilities		
Trade and other payables	**42,922**	**59,650**
Rental fleet related payables	**55,496**	**73,995**
Borrowings	**173,922**	**231,897**
Lease liabilities	**7,608**	**10,144**
Tax payable	**0**	**1,810**
	279,948	**377,496**
Total equity and liabilities	**412,455**	**547,873**

Extract from the notes to the financial statements

NOTE 4:

(a) Rental fleet recorded in the statement of financial position

The company operates a large fleet which is either acquired with, or without, a repurchase agreement with the manufacturer or the dealer. The accounting treatment is detailed below:

(i) Cars acquired with a repurchase agreement (“programme’’ cars)

These cars are acquired under contracts with a clause requiring repurchase by the manufacturer or the dealer after a predetermined period and generally less than 12 months.

The asset is recorded at the acquisition cost of the cars (net of volume rebates) in the statement of financial position. The cost of the asset less the contractual repurchase price, is depreciated through the statement of profit or loss on a straight-line basis over the contractual holding period of the car. Given the duration of these assets, the company recognises these cars as current assets under “Rental fleet” at the start of the contract.

(ii) Cars acquired without a repurchase agreement (“at risk” cars)

The so-called “at risk” cars are cars acquired without a clause requiring repurchase by the car manufacturer or car dealer, and the risk of residual value is therefore borne by the company. The cars are initially valued at cost and depreciated on a straight-line basis, net of their projected residual value, over the planned holding period. The residual value of the cars is regularly examined during the holding period in light of second-hand market conditions and adjusted if necessary.

In most cases, the holding period of a car does not exceed 12 months. Consequently, although "at risk" cars are in the nature of tangible non-current assets, the company classifies these cars on the statement of financial position in current assets under "Rental fleet".

(b) Rental fleet related receivables and payables recorded in the statement of financial position

Rental fleet related receivables are amounts due from car manufacturers or dealers after cars purchased with a repurchase clause have been returned to the car manufacturer at the end of the holding period.

Rental fleet related payables are amounts due to car manufacturers or dealers.

Statement of cash flows for the year ended 31 December

	2020 E$000
Cash flows from operating activities	
Loss before tax	**(823)**
Depreciation of property, plant and equipment	**1,677**
Depreciation of right-of-use assets	**7,648**
Amortisation of intangibles	**2,113**
Loss on disposal of property, plant and equipment	**196**
Net finance costs	**13,496**
Decrease in inventory	**672**
Decrease in trade and other receivables	**12,205**
Decrease in rental fleet receivables	**21,986**
Decrease in rental fleet	**73,030**
Decrease in rental fleet related payables	**(18,499)**
Decrease in trade and other payables	**(16,728)**
Cash generated from operations	**96,973**
Tax paid	**(1,583)**
Interest paid	**(13,496)**
Net cash generated from operating activities	**81,894**
Cash flows from investing activities	
Proceeds on disposal of property, plant and equipment	**1,250**
Net cash used in investing activities	**1,250**
Cash flows from financing activities	
Decrease in borrowings	**(91,400)**
Payment of capital element of lease liability	**(6,385)**
Net cash used in financing activities	**(97,785)**
Net decrease in cash and cash equivalents	**(14,641)**
Cash and cash equivalents at beginning of the year	**58,562**
Cash and cash equivalents at the end of the year	**43,921**

Budget and costing information

Budget for the year to 31 December 2021

Total company budgeted revenue and operating profit:

	Car rental	Ancillary products	Total
	E$000	**E$000**	**E$000**
Sales revenue	175,565	13,185	188,750
Fleet operating costs	98,588	7,118	105,706
Fleet operating profit	76,977	6,067	83,044
Personnel costs			34,340
Network and Head Office costs*			16,768
Non-fleet related depreciation and amortisation			10,549
Operating profit			21,387
Operating profit margin			11.3%

* Network and Head Office costs include the operating costs of the sales locations, IT and telecommunication costs, operating costs of the Head Office and sales and marketing costs.

Detailed budget for car rental:

	Small	Medium	Large / SUV	Prestige	Total
Number of cars	2,800	7,800	3,200	1,200	15,000
Available days per year	1,022,000	2,847,000	1,168,000	438,000	5,475,000
Rental days per year	664,300	1,850,550	759,200	284,700	3,558,750
Fleet utilisation rate*	65%	65%	65%	65%	65%
	E$	**E$**	**E$**	**E$**	
Average per car:					
Revenue per rental day	32	44	60	96	
Revenue per year	7,592	10,439	14,235	22,776	
Operating costs	4,720	5,780	8,360	11,280	
Operating profit	2,872	4,659	5,875	11,496	
	E$000	**E$000**	**E$000**	**E$000**	**E$000**
Total fleet:					
Revenue	21,258	81,424	45,552	27,331	175,565
Fleet operating costs	13,216	45,084	26,752	13,536	98,588
Fleet operating profit	8,042	36,340	18,800	13,795	76,977
Operating profit margin	37.8%	44.6%	41.3%	50.5%	43.8%

* Fleet utilisation rate is calculated as the number of rental days per year divided by the number of available days per year.

Budgeted average fleet operating costs per car:

	Small	Medium	Large / SUV	Prestige
	E$	E$	E$	E$
Depreciation	2,250	3,000	4,500	6,750
Acquisition and disposal	190	250	340	380
Cleaning and other costs	800	850	950	1,100
Repairs and maintenance	720	780	1,120	1,330
Commission	350	400	700	800
Insurance	260	320	520	660
Road tax	150	180	230	260
Total fleet operating costs per car	4,720	5,780	8,360	11,280

Notes:

- The average fleet operating cost is based on an assumed average utilisation rate, number of rental periods and kilometres travelled.
- Direct costs for each range of cars include depreciation, acquisition and disposal costs, commission, insurance, road tax, parts and consumables.
- Indirect costs are apportioned to each range based on the number of cars.

Costing information

Fleet operating costs

Direct fleet operating costs

Direct fleet operating costs consists of the following costs:

- Depreciation
- Acquisition and disposal costs
- Car insurance
- Car tax
- Parts and consumables
- Commission

After assumptions about utilisation rates, number of rentals and kilometres travelled, the total direct fleet operating costs are assumed to vary with the number of cars.

Indirect fleet operating costs

Maintenance and repairs: the costs of maintenance and repairs include parts and consumables which are direct costs and will vary directly with the number of cars. The remaining maintenance and repair costs including depreciation of maintenance centre machinery and lease costs of premises are fixed costs. These costs are apportioned to each range of car based on the number of cars.

The capacity of the maintenance centres is fixed in the short-term. The demand on the capacity will mainly be dependent on the number of rental periods since each car is inspected and any repairs carried out after each rental period.

Cleaning: cleaning costs also include parts and consumables which are direct costs and will vary directly with the number of cars. The remaining cleaning costs, including depreciation of machinery and lease costs of premises, are fixed costs. These costs are apportioned to each range of car based on the number of cars.

The capacity of the cleaning operation is fixed in the short-term. The demand on the capacity will mainly be dependent on the number of rental periods since each car is cleaned after each rental period.

Profit by sales location

The company determines the operating profit by individual sales location.

Each sales location has an allocated fleet of cars. The allocated fleet changes on occasions when a car is transferred to another sales location to meet fluctuations in demand or as a result of a one way rental.

Revenue: the revenue for each sales location is based on the actual revenue achieved from car rentals starting from that location.

Fleet operating costs: fleet operating costs are charged out to sales locations based on the budgeted average fleet operating cost per car for the allocated fleet.

Non-fleet operating costs: the non-fleet operating costs are specific to each location and include staff salaries, lease cost of premises, telecommunication costs and any specific marketing costs.

Acellerate key performance indicators				
	Budget 2021	**Actual 2020**	**Actual 2019**	**Actual 2018**
Total sales revenue (E$000)	188,750	206,278	275,037	262,149
Operating profit (E$000)	21,387	12,673	27,993	24,235
Operating profit margin	11.3%	6.1%	10.2%	9.2%
Average number of locations	117	136	155	145
Average fleet size	15,000	17,754	19,995	18,250
Number of available days	5,475,000	6,480,210	7,298,175	6,661,250
Number of rental days	3,558,750	3,888,126	5,181,704	4,796,100
Fleet utilisation rate	65%	60%	71%	72%
Total car rental revenue (E$000)	175,565	191,938	254,990	245,320
Average per car:				
Revenue per year (E$)	11,704	10,811	12,753	13,442
Revenue per available day (E$)	32.07	29.62	34.94	36.83
Revenue per rental day (E$)	49.33	49.37	49.21	51.15

The tax regime in Everland

Corporate profits:

- The corporate tax rate applicable to taxable profits is 20%.
- The value added tax (VAT) rate is 20%. The sales revenue threshold for VAT registration is E$150,000.
- Unless otherwise stated below, accounting rules on recognition and measurement are followed for tax purposes.
- The following expenses are not allowable for tax purposes:
    - accounting depreciation;
    - amortisation;
    - entertaining expenditure;
    - donations to political parties; and
    - taxes paid to other public bodies.
- Tax depreciation allowances are available on items of plant and machinery (including cars used for business purposes) at a rate of 25% per year on a reducing balance basis. A full year's allowance is available in the year of purchase.
- Tax losses can be carried forward to offset against future taxable profits from the same business.

Recent internet articles

To own or not to own

30 April 2021 Michelle Dolan

The car industry has experienced an evolution fuelled by technological innovation and driven by changing consumer behaviour. There has been a major shift from car ownership to car "usership". This "Car-as-a-Service" or CaaS model includes concepts such as ride sharing, car sharing and car-club membership schemes.

One of the earliest concepts in the CaaS model was the car-subscription service which allows customers to outsource the ownership and entire management of their cars: from procuring it, to maintaining and remarketing it. So, for the payment of a monthly fee you can access a brand-new car and all you will ever have to do is add fuel. A car-subscription service also provides consumers with the potential to swap their car after a short period if they decide they don't like it or just want to try something different.

Another innovation has been the emergence of car-club membership schemes in many European cities. These schemes allow members to hire a car by the hour and to pick it up and drop it off at a convenient location. Such schemes are especially popular with the younger generation, as it's a much cheaper alternative to owning a car in a highly populated area where parking is at a premium. So far in Everland, one such scheme exists in the capital city.

So why own a car? That is the question!

Keeping connected

13 April 2021 Matthew Kettering

Car connectivity presents the greatest challenges but also opportunities for the car industry. So, what is car connectivity? A connected car has two-way communication via the internet with other systems both inside and outside the car. The connected car can access data, send data, download software and patches, communicate with other Internet of Things (IoT) devices, and provide WiFi for onboard passengers.

A typical journey in a connected car will include the satnav giving directions and informing you of road difficulties ahead and the kids streaming a video in the back whilst you listen to your favourite music. You can also turn on the central heating system before you get home and ask your smart fridge whether you need to stop to buy milk.

The benefits for car rental and fleet management companies are immense. Car connectivity provides a new competitive advantage to run a smarter fleet and increase efficiency and reduce costs. Real-time visibility and critical data are allowing companies to improve their business models and even transform them. Fleet managers are now able to manage their fleets remotely knowing location, health status, speed, fuel consumption, temperature, tyre pressure and much more.

Operational Case Study Exam

Maximum Time Allowed: 3 Hours

Welcome, Candidate Name

If this is not your name, please let your administrator know.

Click **Next** to start the test.

This examination is structured as follows:

Section number	Time for section (minutes)	Number of tasks	Number of sub-task/s	% time to spend on each sub-task
1	45	1	2	(a) 52% (b) 48%
2	45	1	2	(a) 48% (b) 52%
3	45	1	3	(a) 52% (b) 32% (c) 16%
4	45	1	3	(a) 32% (b) 32% (c) 36%

Each section (task) has a number of sub-tasks. An indication of how much of the time available for the section that you should allocate to planning and writing your answer is shown against each sub-task in the text of the question (and summarised in the table above).

This information will be available for you to access during the examination by clicking on the Pre-seen button.

Reference Materials Pre-seen

Today is 1 June 2021. It has just been announced that the company has decided to launch an external fleet management service for businesses that have their own car fleet. The external fleet management service will utilise our existing fleet management system and facilities. The service will be launched in September 2021. The elements of the service which we will offer to businesses will include acquisition of cars, registration of cars, arranging insurance, initial car inspection, servicing, accident repair management, fuel and driver management and car disposal.

You receive the following email from Ethan Tennant, Finance Manager.

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Activity based costing and rolling budgets

You will have seen the announcement regarding the launch of an external fleet management service for businesses. Each business will be able to customise the service to fit its specific requirements by selecting the different elements of the service that it needs. The price charged will be determined based on the cost of the different elements of the services used. The contract will specify a maximum annual mileage, with an additional charge payable for excess mileage. Fleet drivers will be issued with a fuel card enabling them to purchase fuel on credit. Fuel costs incurred will be recharged to the business customer.

I would like to consider using activity based costing (ABC) to determine the cost of the different elements of the service. I have provided details of the activities included in car servicing (Table 1 attached).

I would like you to provide me with a report, which I can present at the next Senior Management Team (SMT) meeting, explaining:

- How we would use ABC to determine the cost of the different elements of the fleet management service, using car servicing as an example. Please also explain the benefits of using ABC for this purpose.

(sub-task (a) = 52%)

As there is a lot of uncertainty regarding the new external fleet management service, I was also wondering whether it would be appropriate in future to use rolling budgets for the company's income, expenditure and cash budgets.

Please include in your report an explanation of:

- The potential benefits and drawbacks of using rolling budgets for the company's income, expenditure and cash budgets.

(sub-task (b) = 48%)

Many thanks

Ethan Tennant
Finance Manager
Acellerate

The attachment to this email can be found by clicking on the Reference Materials button above.

Table 1: Details of car servicing

Car servicing	Description of activities
The regularity of servicing depends on the manufacturers' recommendations under the warranty requirements. Service intervals will be stated as mileage or time. The service will be carried out whichever comes first, for example, 20,000 kilometres or 12 months.	• The exterior of the car will be checked for any scratches or damage. • The interior of the car will be checked for any tears or other damage. • Checks will be carried out on fuel, oil, other fluids including brake fluid and water, mirrors, sound system, air-conditioning, windscreen wipers, heating system, horn, doors and windows. • Digital diagnostic equipment will be used to access the car's on-board diagnostic system to identify any potential issues. • Fluids will be topped up or replaced as required. • Worn or faulty parts will be replaced. • Mechanical adjustments will be made as required.

Reference Materials Pre-seen

Write the report for Ethan Tennant, Finance Manager, in the box below:

Paragraph

Reference Materials Pre-seen

A few weeks later, you receive the following email from Ethan Tennant, Finance Manager.

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Factoring and robot process automation of finance functions

The new fleet management service is going to put pressure on our sales ledger and credit control functions which are already stretched. Megan Dubois, Finance Director, and I have been discussing options to deal with this issue. One of the options under consideration is the use of non-recourse factoring. If we do decide to enter into such a factoring arrangement, the factor will take over all aspects of the management of our sales ledger and credit control processes.

I would like you to prepare briefing notes which I can discuss at the next Senior Management Team (SMT) meeting. It would be helpful if the briefing notes include an explanation of:

- The advantages and disadvantages of using factoring, including the financial costs and benefits involved, if we decide to enter into a factoring arrangement.

(sub-task (a) = 48%)

As an alternative to factoring, we also considered the possibility of outsourcing the transaction processing work for these functions. The outsourcing contract would be for an initial period of 1 year. Alternatively, we could keep all of the work in-house but use robot process automation for some of the transaction processing work. I have attached details of the costs of the two options.

Please also include in your briefing notes:

- An explanation of which of the costs would be relevant and which would be irrelevant for each option and how to decide which option to choose. Also, explain two other factors that we would need to consider before deciding whether to outsource the transaction processing work.

(sub-task (b) = 52%)

Many thanks

Ethan Tennant
Finance Manager
Acellerate

The attachment to this email can be found by clicking on the Reference Materials button above.

Cost data for the two options for a 1 year period

Costs of in-house option

Cost categories	Costs E$000	Notes
Current employment costs	360	1
Lease cost of software and equipment	40	2
Additional IT support	10	3
Total	410	

Costs of outsource option

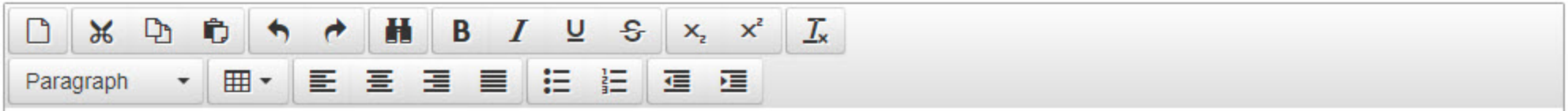
Cost categories	Costs E$000	Notes
Outsourcer's tender price	350	4
Service agreement administration	30	5
Redundancy costs	150	6
Total	530	

Notes:

1. If the transaction processing work remains in-house the current staff will be maintained. If the transaction processing work is outsourced, the staff will be made redundant.
2. If the transaction processing work remains in-house there will be a need to lease new transaction processing automation software and equipment to enable the department to cope with the additional workload required. The lease agreement will be for a period of 4 years with an option to terminate after 1 year. The cost of E$40,000 represents the lease payment in the first year. The leasing company will retain ownership of the software and equipment.
3. The automation of the transaction processing work will result in additional IT support work. The additional support will be provided by existing IT staff as part of their normal workload.
4. The outsourcer's tender price is based on the service level negotiated and will be reviewed at the end of each year.
5. The service agreement administration cost is an estimate of the cost of the time that will be spent by existing managers on administering the service agreement. The time spent by the managers will be as part of their normal workload.
6. A redundancy payment will be made to staff who are made redundant as a result of outsourcing the work.

Reference Materials Pre-seen

Write the briefing notes for Ethan Tennant, Finance Manager, in the box below:



Reference Materials Pre-seen

A few weeks later Ethan Tennant, Finance Manager, says to you:

"It has become apparent that, as a result of the new fleet management service, we will need to expand our existing maintenance facilities and invest in new machinery. We are planning to re-open a few of the maintenance centres that we closed last year but which we still own or lease. Some of the premises will require building work and others will need only general refurbishment work.

The Senior Management Team (SMT) wants to understand how the expenditure will be treated in the financial statements. I have listed the costs in Table 1 which I will send you shortly. I would like you to prepare briefing notes, which I can discuss at the next SMT meeting, which include:

- An explanation of the distinction between capital and revenue expenditure. Please also provide separate justification for the treatment, as either capital or revenue expenditure, of each of the individual costs listed in Table 1.

(sub-task (a) = 52%)

The SMT is concerned about the level of fixed costs involved in providing the fleet management service. It has asked for details of the break-even position for the service for the first year. Jack Durand, Retail Operations Director, has provided me with details of the estimated number of cars and the sales mix based on the various elements of the service. He has estimated that we will have an average of 325 cars in the fleet management service during the first year. I have estimated the total annual fixed costs, the fee charged per car and the average variable cost per car based on this estimated volume and mix. I have also prepared a profit/volume chart (Chart 1, which I shall send to you shortly) based on these estimated figures.

Please also include in your briefing notes an explanation of:

- The profit/volume chart and why the data and assumptions used to construct the chart will limit its usefulness.

(sub-task (b) = 32%)

- The potential risks and benefits of having a high level of fixed costs in our cost structure."

(sub-task (c) = 16%)

You tell Ethan that you will send him the briefing notes as soon as possible.

Table 1 and Chart 1 can be found by clicking on the Reference Materials button above.

Table 1 | Chart 1

Table 1: Expenditure in respect of the new fleet management service

Cost item	Notes	E$
Building work on the maintenance centres	1	100,000
Planning, design and architect fees	2	8,000
Painting and decorating	3	10,000
Machinery purchase cost	4	40,000
Training for new maintenance staff	5	6,000

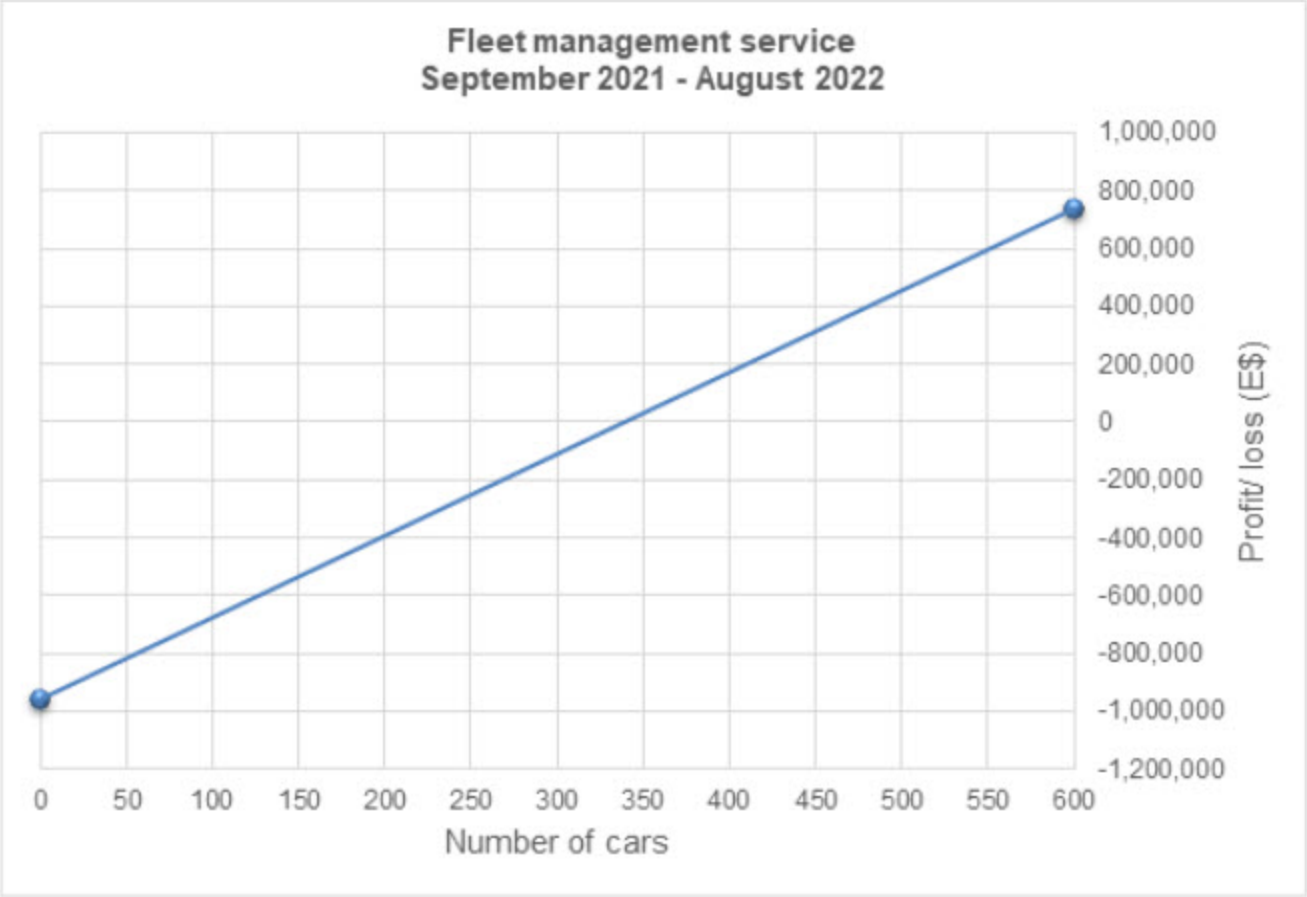
Notes:

1. The building work to expand the maintenance facilities will be carried out by an Everland building contractor.
2. Planning, design and architect fees are in respect of the building work.
3. The painting and decorating costs will be incurred for maintenance centres requiring building work and also for centres that do not require building work.
4. The purchase price of the machinery includes the cost of delivery to the maintenance centre.
5. The training is in respect of general company policies and procedures and is given to all new Acellerate staff.

Reference Materials

Table 1 | Chart 1

Chart 1: Profit volume chart for the fleet management service



Note:
Fixed costs include a share of general fixed overhead costs which have been apportioned based on the number of cars.

Close

Reference Materials Pre-seen

Write the briefing notes for Ethan Tennant, Finance Manager, in the box below:

Paragraph

Reference Materials Pre-seen

In early January 2022, you receive the following email from Megan Dubois, Finance Director.

From: Megan Dubois, Finance Director
To: Finance Officer
Subject: Variance analysis and Key Performance Indicators (KPIs)

The Senior Management Team (SMT) has asked for a detailed review of the costs of running the new fleet management service. As you

Operational Case Study Exam - Candidate Name
Time Remaining 44:51
1 of 2
Scratch Pad Calculator

As Ethan Tennant is on vacation at the moment, I would like you to prepare a briefing paper that I can discuss at the next SMT meeting including an explantion of:

- Why the variances differ depending on the costing system used and why the ABC variance analysis provides more useful information than the TAC variance analysis. Please also explain what each of the ABC variances indicate.

(sub-task (a) = 32%)

The sales budget for the service has been set by the new Fleet Management Service Director. In the future we would like to involve the Fleet Management Area Sales Managers in setting their own sales budget and KPI targets.

Please also include in your briefing paper an explanation of:

- The potential benefits and drawbacks of allowing the Area Sales Managers to participate in setting the sales budgets and KPI targets.

(sub-task (b) = 32%)

We get good data analytics from the fleet management system and I would like to utilise this data to improve the information that we provide to our customers. I have attached an extract from the fleet management report (Table 2 attached) which we currently provide to enable our customers to assess their employees' use of fleet cars. I would like, however, to develop a KPI dashboard that our customers could access. They would be able to view the KPIs on the dashboard and drill down to get further detail for individual cars.

Please also include in your draft report:

- A suggestion for three KPIs to include on the dashboard, based on the data from the fleet management report. Please also explain how the KPIs would be calculated and why they would be appropriate.

(sub-task (c) = 36%)

Many thanks

Megan Dubois
Finance Director
Acellerate

The attachments to this email can be found by clicking on the Reference Materials button above.

Table 1: Cost variance analysis for the quarter October–December 2021

	Processing purchases invoices	
Fixed overhead absorption rate under the traditional absorption costing system	E$18 per car	
Cost driver	Number of invoices	
Number of invoices per car	9	
Budgeted cost driver rate	E$2.00 per invoice	
	Budget	**Actual**
Number of cars	200	250
Activity rate	1,800 invoices	2,000 invoices
Total cost	E$3,600	E$3,900
Traditional absorption costing variances		**E$**
Fixed overhead volume variance		900 F
Fixed overhead expenditure variance		300 A
Total cost variance		600 F
Activity based costing variances		**E$**
Efficiency variance		500 F
Expenditure variance		100 F
Total cost variance		600 F

Table 1 | Table 2

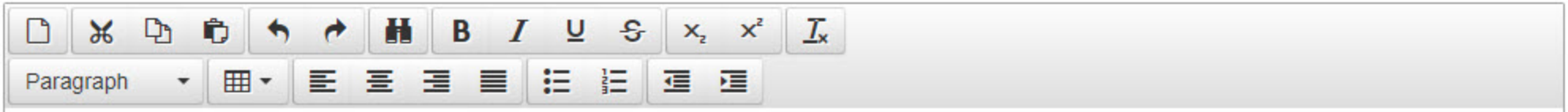
Table 2: Extract from the fleet management system

Company XYZ for December 2021

Number of cars under fleet management	50
Fleet fuel costs for the month	E$15,625
Number of cars serviced	10
Number of cars due to be serviced	12
Number of accident repairs	2
Fleet accident repair costs	E$3,280
Total number of kilometres travelled	123,600
Total number of litres of fuel used	13,200

Reference Materials Pre-seen

Write the briefing paper for Megan Dubois, Finance Director, in the box below:



Thank you for completing the Operational Case Study Exam.

Before you leave, don't forget to collect your printed confirmation of attendance.

Please click the End Exam (E) button before leaving the testing room quietly.

Operational Case Study Exam

Maximum Time Allowed: 3 Hours

Welcome, Candidate Name

If this is not your name, please let your administrator know.

Click **Next** to start the test.

This examination is structured as follows:

Section number	Time for section (minutes)	Number of tasks	Number of sub-task/s	% time to spend on each sub-task
1	45	1	3	(a) 48% (b) 36% (c) 16%
2	45	1	3	(a) 36% (b) 32% (c) 32%
3	45	1	3	(a) 32% (b) 16% (c) 52%
4	45	1	2	(a) 52% (b) 48%

Each section (task) has a number of sub-tasks. An indication of how much of the time available for the section that you should allocate to planning and writing your answer is shown against each sub-task in the text of the question (and summarised in the table above).

This information will be available for you to access during the examination by clicking on the Pre-seen button.

Reference Materials Pre-seen

Today is 1 June 2021. It has just been announced that the company is to launch a new brand "Vetura" on 1 October 2021. Vetura will be aimed at the leisure market and will offer a low-cost alternative to Acellerate. A new website and app will be developed for Vetura based on the Acellerate format and using the existing fleet management system. It is anticipated that the average length of the rental period for cars rented under the Vetura brand will be longer than for the Acellerate brand. Vetura will use the existing fleet of cars with the exception of the Prestige range. Some additional cars will be acquired exclusively for use by Vetura. Vetura will mainly operate from the same locations as Acellerate although there will be some locations specifically for the individual brands. Both businesses will utilise the same maintenance centres.

You receive the following email from Ethan Tennant, Finance Manager.

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Brand profit analysis and what-if analysis

You will have seen the announcement regarding the launch of the new Vetura brand. The Senior Management Team (SMT) would like to be able to measure the operating profit generated by each brand. Jack Durand, the Retail Operations Director, suggested that we should use actual rental income as the basis to charge out the budgeted total operating cost per car to the brands. We also need to decide how to charge out our non-fleet operating costs to the brands and thought it would be helpful to consider the costs of our sales locations.

I would like you to provide me with a report, which I can present at the next SMT meeting, explaining:

- Why we need to establish a method to charge out the budgeted total operating cost per car to the brands and the drawbacks of using actual rental income for this purpose. Please also suggest and justify a method to charge out the sales location costs to each brand.

(sub-task (a) = 48%)

The launch of the Vetura brand is expected to impact the Acellerate brand although the extent of the impact is uncertain. We have been asked by the SMT to produce a revised budget for the Acellerate brand. I have attached the original budget (Table 1). I have also produced a what-if analysis (Table 2 attached) which shows the impact on the budget for the Acellerate brand of three different scenarios involving an adverse change of 10% to the number of cars, rental income per car and variable fleet operating costs.

Please also include in your report an explanation of:

- The changes to the budgeted fleet contribution and operating profit under each scenario as shown in Table 2 and why the scale of the change is different even though each scenario starts with an adverse change of 10%.

(sub-task (b) = 36%)

- The risks and benefits of having a proportionally high level of fixed costs in our cost structure.

(sub-task (c) = 16%)

Many thanks

Ethan Tennant
Finance Manager
Acellerate

The attachment to this email can be found by clicking on the Reference Materials button above.

Table 1: Original budget for the Acellerate brand for October–December 2021

	Budget
Number of cars	15,000
Number of available days	1,380,000
Number of rental days	897,000
Average fleet utilisation rate	65%
Average rental income per car per day	E$49.33
	E$000
Sales revenue	44,249
Commission	(1,840)
Variable fleet operating costs	(16,998)
Fleet contribution	**25,411**
Fixed fleet operating costs	(6,012)
Fleet operating profit	**19,399**

Notes:

1. Commission is based on a percentage of sales revenue.
2. Variable fleet operating costs are assumed to vary with the number of cars.

Table 2: Percentage change to budgeted fleet contribution and fleet operating profit

	Decrease number of cars by 10%*	Decrease average rental income per car per day by 10%	Increase variable fleet operating costs by 10%
Change to fleet contribution	- 10.0%	- 16.7%	- 6.7%
Change to fleet operating profit	- 13.1%	- 21.9%	- 8.8%

* It is assumed that the fleet utilisation rate will remain at 65%.

Reference Materials Pre-seen

Write the report for Ethan Tennant, Finance Manager, in the box below:

Paragraph

Reference Materials Pre-seen

A few weeks later, you receive the following email from Ethan Tennant, Finance Manager.

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Marketing packages and zero based budgeting (ZBB) for marketing costs

The Senior Management Team (SMT) has decided to fund some additional marketing for the Vetura brand. Jessica Strauss, Marketing Director, has suggested three potential marketing packages which cost the same but use a different mix of media. A market research company produced the information in Table 1 (attached).

I would like you to prepare briefing notes, which I can discuss at the next SMT meeting, which include an explanation of:

- Expected value, standard deviation and co-efficient of variation as shown in Table 1. Please also explain how decision-makers' attitude to risk (risk-seeking, risk averse and risk neutral) would affect the choice of package and state the package that would be chosen by each type of decision-maker.

(sub-task (a) = 36%)

The SMT is keen to ensure that the marketing spend is as effective as possible. At the moment we budget for marketing costs by cost item. I have attached some details of the cost items in our 2021 marketing budget (Table 2). Megan Dubois, Finance Director, suggested using ZBB and has asked me to also discuss this at the next SMT meeting.

Please include in your briefing notes an explanation of:

- How ZBB would be applied to the marketing budget, using some of the cost items listed in Table 2 to illustrate the explanation.

(sub-task (b) = 32%)

The SMT has noted that the introduction of the new brand will result in the need for an increase in working capital and would like to consider our approach to working capital management. We currently take a fairly conservative approach but are considering taking a more aggressive approach in future.

Please include in your briefing notes an explanation of:

- How an aggressive approach to managing each element of the working capital cycle would differ from our current conservative approach. Also, please explain the risks involved with adopting an aggressive approach.

(sub-task (c) = 32%)

Many thanks
Ethan Tennant
Finance Manager
Acellerate

The attachments to this email can be found by clicking on the Reference Materials button above.

Table 1 | Table 2

Table 1: Proposed marketing packages

	Package A		Package B		Package C	
Market reaction	E$	Probability	E$	Probability	E$	Probability
Strong	189,200	30%	186,000	30%	182,000	20%
Moderate	141,900	50%	145,200	40%	132,000	70%
Weak	75,000	20%	100,000	30%	88,000	10%
Expected value		E$142,710		E$143,880		E$137,600
Standard deviation		E$39,568		E$33,325		E$25,734
Co-efficient of variation		27.73%		23.16%		18.70%

Note:
The figures shown for the different market reaction to each of the packages represent the additional contribution net of the marketing costs.

Close

Table 1 | Table 2

Table 2: Extract from the marketing budget

Cost items for 2021 marketing budget
Staff salaries
Advertising:
Television
Radio
Social media
Other
Market research:
External fees
Subscriptions
Research reports

Close

Reference Materials Pre-seen

Write the briefing notes for Ethan Tennant, Finance Manager, in the box below:

Paragraph

A few days later Megan Dubois, Finance Director, says to you:

"As you know, we normally hold the cars in our rental fleet for a period of 12 months. In view of current trading conditions, we are considering extending the holding period of our existing fleet by up to 12 months. Information on both options: replacing the existing fleet at the end of the initial 12-month period or extending the holding period by an additional 12 months is given in Schedule 1, which I will send to you shortly.

Please prepare a report that I can present at the next Senior Management Team (SMT) meeting explaining:

- The costs and benefits which are relevant and those which are irrelevant under each option.

(sub-task (a) = 32%)

- Two other factors that we should consider before making a final decision.

(sub-task (b) = 16%)

The SMT has decided to expand our car fleet but has not yet decided whether to lease or purchase the new cars. We have never leased our cars before and the SMT would like to understand how the accounting treatment would differ if we lease rather than purchase them. I have given details of the lease in Schedule 2 which I will send to you shortly.

Please also include in your report an explanation of:

- How the lease would initially be recorded in our accounting records and how it would be treated in our financial statements for the year ended 31 December 2021 and in subsequent years. Please also explain how the accounting treatment of the asset in the statement of financial position would differ if we purchased the cars and held them for a 2-year period."

(sub-task (c) = 52%)

You tell Megan that you will send her the report as soon as possible.

Megan's schedules can be found by clicking on the Reference Materials button above.

Schedule 1 | Schedule 2

Schedule 1: Information relating to the two options

Option 1: Hold existing car for an additional 12 months	
Information relating to the existing car	**E$**
Purchase price of existing car	(25,000)
Buying costs	(250)
Operating costs for initial 12-month period	(5,000)
Operating costs for additional 12-month period	(7,000)
Depreciation charge for initial 12-month period	(6,250)
Depreciation charge for the additional 12-month period	(2,500)
Disposal value at the end of the initial 12-month period	18,750
Disposal value at the end of the additional period	16,250
Selling costs at the end of initial 12-month period	(400)
Selling costs at the end of additional period	(420)

Option 2: Replace existing car after initial 12-month period and hold replacement car for 12 months	
Information relating to the replacement car	**E$**
Purchase price of replacement car	(26,000)
Buying costs	(265)
Operating costs for the 12-month period	(5,250)
Depreciation charge	(6,500)
Disposal value at the end of the 12-month period	19,500
Selling costs at the end of the 12-month period	(420)

Close

Schedule 1 | Schedule 2

Schedule 2: Details of the lease and purchase options

Lease payments per year in advance	E$359,290
Present value of future lease payments at 1 October 2021*	E$640,686
Purchase price of cars	E$3,000,000
Expected residual value at end of 2 years	E$2,000,000
Other costs:	
Lease arrangement fee	E$40,000
Lease commencement date	1 October 2021
First lease payment	1 October 2021
Lease period	2 years
Owner at end of lease period	Lessor

* The present value excludes the lease payment made in advance on 1 October 2021

Reference Materials Pre-seen

Write the report for Megan Dubois, Finance Director, in the box below:

Paragraph

Reference Materials Pre-seen

In early January 2022, you receive the following email from Ethan Tennant, Finance Manager.

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Variance analysis and Key Performance Indicators (KPIs)

I have just been looking at the sales variance report for the new Vetura brand (Schedule 1 attached). I have also extracted details on KPIs from our fleet management system showing actual performance against target (Schedule 2 attached).

I have spoken to Jack Durand, the Retail Operations Director, who has provided me with some information on events relating to the period. None of these events were reflected in the original standards or budgets.

a. There were problems with availability of Medium cars at some of our locations.
b. The additional business from the Vetura brand has put pressure on our maintenance centres with the result that the turnaround time for maintenance has increased.
c. We agreed a contract with a national hotel chain to promote the Vetura brand. As part of the promotion we offered a 20% discount on our Small and Medium cars booked through the hotel chain.
d. We ran an advert for the Vetura brand in the in-flight magazine of an Everland based low-cost airline. We included a discount code giving 10% off all car rentals with Vetura.
e. We agreed a contract with a large company for Vetura to be its preferred supplier of rental cars. The cars rented by the company were mainly from the Medium and Large/SUV ranges.

Please prepare a report on the variances and KPIs that I can present at the next Senior Management Team (SMT) meeting, including an explanation of:

- What each of the three variances indicate, how they have been calculated and the reasons why they may have arisen.

(sub-task (a) = 52%)

- Why each KPI is appropriate and suggest reasons why the actual performance is different to target.

(sub-task (b) = 48%)

Many thanks

Ethan Tennant
Finance Manager
Acellerate

The attachments to this email can be found by clicking on the Reference Materials button above.

Schedule 1 | Schedule 2

Schedule 1: Sales variance report for the quarter October–December 2021

Size	Rental income price variance	Rental income mix contribution variance	Rental income quantity contribution variance
	E$	E$	E$
Small	261,600 A	116,784 F	324 A
Medium	183,120 A	256,896 A	384 A
Large / SUV	92,760 F	58,520 F	380 A
Total	**351,960 A**	**81,592 A**	**1,088 A**

Size	Budgeted rental days	Actual rental days
Small	161,460	174,400
Medium	107,640	91,560
Large / SUV	89,700	92,760
Total	**358,800**	**358,720**

Size	Standard rental income per car per day	Standard contribution per car per day
	E$	E$
Small	29.00	9.00
Medium	40.00	16.00
Large / SUV	54.00	19.00

Notes:

- The sales mix and sales quantity variances have been calculated using the individual units method.
- The standard rental income and contribution per car per day are both based on averages for cars within each range.
- Contribution represents revenue less variable fleet operating costs.

Schedule 1 | Schedule 2

Schedule 2: Extract from the KPI report for the quarter October–December 2021

Acellerate overall

Measure	Target	Actual
Average utilisation rate	70.0%	71.2%

Vetura only

Measure	Target	Actual
Average rental period length	5.7 days	6.1 days
Average number of maintenance hours per rental	1.4 hours	1.8 hours

Reference Materials Pre-seen

Write the report for Ethan Tennant, Finance Manager, in the box below:

Paragraph

Thank you for completing the Operational Case Study Exam.

Before you leave, don't forget to collect your printed confirmation of attendance.

Please click the End Exam (E) button before leaving the testing room quietly.

Operational Case Study Exam

Maximum Time Allowed: 3 Hours

Welcome, Candidate Name

If this is not your name, please let your administrator know.

Click **Next** to start the test.

This examination is structured as follows:

Section (task)	Time for section (minutes)	Number of answer screens	Number of sub-tasks	% time to spend on each sub-task
1	45	1	3	(a) 32% (b) 16% (c) 52%
2	45	1	3	(a) 52% (b) 32% (c) 16%
3	45	1	3	(a) 32% (b) 32% (c) 36%
4	45	1	2	(a) 52% (b) 48%

Each section (task) has a number of sub-tasks. An indication of how much of the time available for the section that you should allocate to planning and writing your answer is shown against each sub-task in the text of the question (and summarised in the table above).

This information will be available for you to access during the examination by clicking on the Pre-seen button.

Reference Materials Pre-seen

Today is 1 June 2021. It has just been announced that the company is to launch a car-subscription service in July 2021. This service offers customers the opportunity to lease a car for a minimum period of at least 3 months. At the end of the minimum period the contract will continue on a month-by-month basis. The customer also has the option at the end of the minimum period to change to a different make and model of car, if desired. The monthly lease fee includes tax, insurance and access to a full maintenance and repair service. The lease fee will vary depending on the make and model of car but also on estimated mileage per month, the age of the car and the minimum period. The car-subscription service will be supported by a new digital app.

You receive the following email from Ethan Tennant, Finance Manager.

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Time series analysis & costing of digital app

You will have seen the announcement regarding the launch of a car-subscription service. This is a great opportunity as it will allow us to gain further benefits from our fleet management system and maintenance facilities.

We need to determine the lease income budget for this new service for July to December 2021. Jack Durand, the Retail Operations Director, has asked for our help with this. I have carried out some research on the internet and established the number of car-subscription service contracts entered into in Everland every quarter for the past few years. I have calculated a trend line and seasonal variations (Table 1 attached).

I would like you to provide me with a report, which I can present at the next Senior Management Team (SMT) meeting, explaining:

- What the time series information given in Table 1 means and how we would determine the lease income budget for our new car-subscription service using this information.

(sub-task (a) = 32%)

- Two limitations of using this approach to forecast the lease income.

(sub-task (b) = 16%)

We would like to establish the cost per unit for the car-subscription service app. The app will not be sold separately but will be included as part of the fee for the car-subscription service. I have produced a table (Table 2 attached) showing the type of costs which would be direct costs of the app and those that will be indirect costs.

Please include in your report:

- An explanation of what is meant by direct and indirect costs in the context of the development and ongoing maintenance of an app. Please also explain the difficulties that each type of cost presents in determining the cost per unit of the car-subscription service app, using the cost items in the schedule to illustrate the explanation.

(sub-task (c) = 52%)

Many thanks

Ethan Tennant
Finance Manager
Acellerate

The attachments to this email can be found by clicking on the Reference Materials button above.

Table 1 | Table 2

Table 1: Car-subscription service contracts entered into in Everland each quarter

These figures are based on quarterly volumes for the 3-year period from 2018 to 2020.

Regression trend line	Y = 4,000 + 3,500Q
Seasonal variations (based on the multiplicative model):	
January to March	minus 2.4%
April to June	plus 7.4%
July to September	minus 1.2%
October to December	minus 3.8%

Key:
Y = number of car-subscription service contracts entered into each quarter
Q = the quarter number (where Q = 1 is the first quarter of 2018)

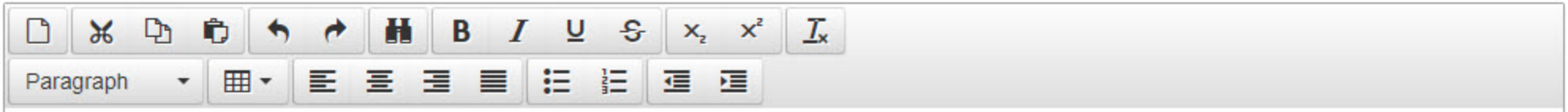
Close

Table 2: Cost types and items for the car-subscription service app

Cost type	Cost items
Direct costs	**Development costs**: This is the cost of the freelance software developers who have designed and developed the app.
	Functional services costs: These will be the costs to Acellerate of subscribing to a service that will provide a delivery mechanism. The charges from the service provider will include both a fixed and a variable element.
Indirect costs	**Infrastructure services costs:** Infrastructure services for the app will be provided in-house and shared with our other IT services. The costs of the service will be mainly fixed.
	Administrative services costs: The administrative costs relate to the administration dashboard to enable us to effectively administer the app including managing the content of the app and updating the app. These services will be provided in-house.
	Technical support services costs: Technical support costs relate to iOS and Android updates; updates to application programming interfaces (APIs) with, for example, social networking sites and bug fixing. IT specific maintenance costs for infrastructure will also be required. These services will also be provided in-house.

Reference Materials Pre-seen

Write the report for Ethan Tennant, Finance Manager, in the box below:



Reference Materials Pre-seen

A few weeks later, you receive the following email from Ethan Tennant, Finance Manager.

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Linear programming & supplier selection

The launch of the car-subscription service is going to result in a shortage of capacity in our maintenance centres. We have decided to prioritise the repairs and maintenance of the subscription service cars and our Small and Medium rental cars. We need to decide how much of the remaining capacity to allocate to each of our Large/SUV range and Prestige range of rental cars. I have prepared a linear programming graph (Graph 1 attached) showing the situation for the next 3 months.

I would like you to prepare briefing notes, which I can discuss at the next Senior Management Team (SMT) meeting. It would be helpful if the briefing notes include an explanation of:

- The linear programming graph, how it would be used to determine the optimal allocation of repairs and maintenance capacity and what that optimal allocation would be. Please also explain how to determine the maximum price we should pay for additional units of the current binding resource.

(sub-task (a) = 52%)

In the future, it will be possible to outsource some of our repair and maintenance work. George Oswald, Maintenance Manager, has suggested three potential car maintenance companies who deal mainly with the business market. I have produced some figures, using the suppliers' financial statements, and provided a comparison with the industry averages (Table 1 attached).

Please also include in your briefing notes:

- An explanation of the working capital position of the three suppliers and the potential risks and benefits it presents if we were to trade with any of these suppliers.

(sub-task (b) = 32%)

- Suggestions of two other factors that we should consider before making a final decision on which supplier to use.

(sub-task (c) = 16%)

Many thanks

Ethan Tennant
Finance Manager
Acellerate

The attachments to this email can be found by clicking on the Reference Materials button above.

Graph 1 | Table 1

Graph 1: Linear programming graph July–September 2021

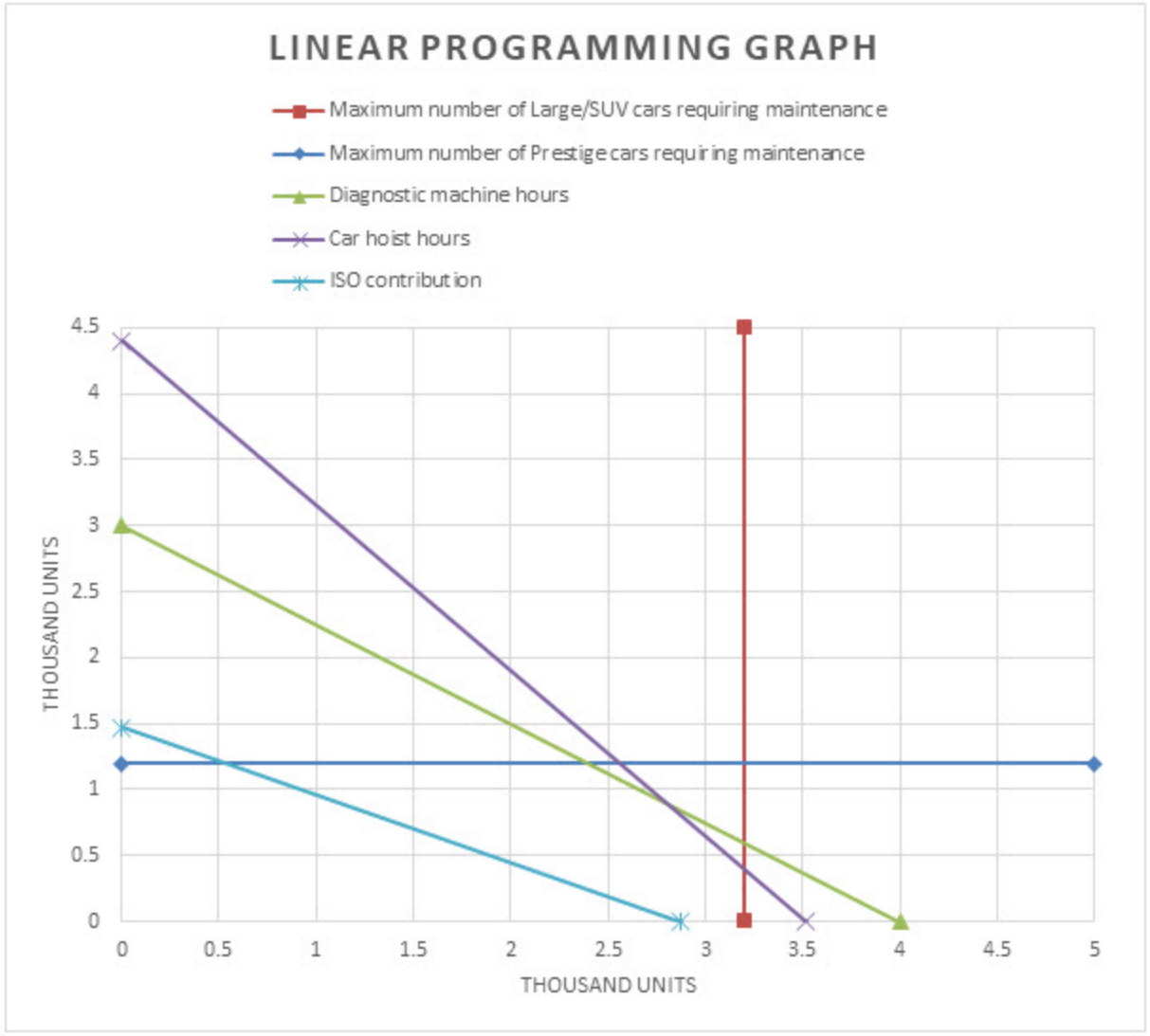


Table 1: Financial information for three potential suppliers

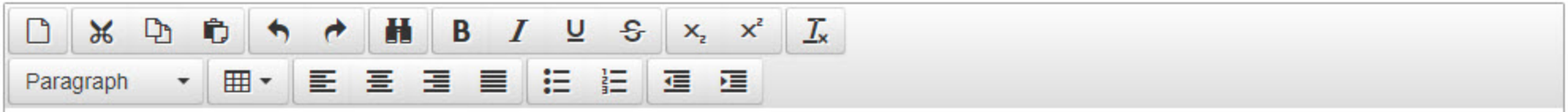
	Industry average	Supplier A	Supplier B	Supplier C
Inventory days	18	21	31	12
Trade receivable days	55	65	56	48
Trade payable days	(49)	(62)	(63)	(36)
Operating cycle (days)	24	24	24	24

Other information:

- All of the suppliers offer standard credit terms of 30 days to their credit customers.
- Supplier A is the longest-established supplier and has the highest revenue.
- Supplier B has a large contract with one of our competitors to provide maintenance and repairs for its car rental fleet.
- Supplier C is relatively small compared to the other two companies.

Reference Materials Pre-seen

Write the briefing notes for Ethan Tennant, Finance Manager, in the box below:



Reference Materials Pre-seen

A few days later Megan Dubois, Finance Director, says to you:

"The Senior Management Team (SMT) is considering increasing the capacity of our existing maintenance centres to cover the capacity constraint for the next 6 months. Depending on the success of the subscription service during this period, we will then decide whether a major expansion programme is required.

If we increase the capacity too much, we may end up with unused capacity, the cost of which cannot be recovered through charges to car-subscription service customers. If we do not increase the capacity enough, we will have to outsource some of the work at additional cost. I have prepared a pay-off table (Table 1) showing the total costs of each of the nine possible outcomes based on different capacity and demand levels. I have also prepared a regret matrix (Table 2).

As Ethan Tennant is currently on vacation, I would be grateful if you would prepare a report that I can present at the next SMT meeting giving an explanation of:

- How the maximax, maximin and minimax regret decision criteria would be used to decide which option to choose, assuming that the objective is to minimise cost. Please identify the option that would be chosen using each criterion.

(sub-task (a) = 32%)

In view of the uncertainty surrounding the new service, I would like to consider using the ideas associated with "beyond budgeting", including the use of Key Performance Indicators (KPIs), for the car-subscription service. I have included the main features of the service in Table 3.

Please also include in your report an explanation of:

- The main characteristics of beyond budgeting and the potential benefits of using beyond budgeting for the car-subscription service.

(sub-task (b) = 32%)

- Three KPIs that would help us to measure the performance of the car-subscription service. You should explain how the KPIs would be calculated and why they would be appropriate."

(sub-task (c) = 36%)

You tell Megan that you will send her the report as soon as possible.

Table 1, Table 2 and Table 3 can be found by clicking on the Reference Materials button above.

Table 1 & Table 2 | Table 3

Table 1: Pay-off table showing the cost of increased capacity for the maintenance centres over the next 6-month period

	Level of increased capacity		
	Option 1	Option 2	Option 3
Level of demand for car-subscription service	E$	E$	E$
Low	700,000	740,000	780,000
Medium	850,000	840,000	880,000
High	1,000,000	990,000	980,000

Table 2: Regret matrix based on Table 1

	Level of increased capacity		
	Option 1	Option 2	Option 3
Level of demand for car-subscription service	E$	E$	E$
Low	0	40,000	80,000
Medium	10,000	0	40,000
High	20,000	10,000	0

Close

Table 3: The main features of the car-subscription service

1.	Customers are given the opportunity to lease a car for a minimum period of at least 3 months.
2.	At the end of the minimum period the contract will continue on a month-by-month basis.
3.	Customers have the option at the end of the minimum period to change to a different make and model of car if they desire.
4.	The monthly lease fee includes tax, insurance and access to a full maintenance and repair service.
5.	The lease fee will vary depending on the make and model of car but also on estimated mileage per month, the age of the car and the minimum period.

Reference Materials Pre-seen

Write the report for Megan Dubois, Finance Director, in the box below:

Paragraph

Reference Materials Pre-seen

In early January 2022, you receive the following email from Ethan Tennant, Finance Manager

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Lease income variances and adjustments to the financial statements

I have just been looking at the lease income variance report for the new car-subscription service for the last quarter (Schedule 1 attached).

I have spoken to Jack Durand, the Retail Operations Director, who has provided me with some information on actions taken during the period as follows:

a. A global car rental company entered into this market and aggressively advertised its service throughout Everland.
b. In response to the competition from the global car rental company, we offered discounts of 10% on our budgeted lease fees for all types of cars.
c. We also ran an advertising campaign, in various publications and social media, promoting our discounted rates and our home-grown credentials.
d. We agreed a contract with a large company to provide a number of cars from our Medium and Large/SUV ranges for its salesforce and managers.

Please prepare a draft report that I can present at the next Senior Management Team (SMT) meeting including an explanation of:

- What each of the variances indicate and the reasons why they may have arisen. Please also explain what the actions taken and resultant variances tell us about market conditions and customer preferences.

(sub-task (a) = 52%)

We are currently working on the financial statements for 31 December 2021 and there are three items that I would like your help with. I have listed the items in Schedule 2 (attached).

Please also include in your draft report:

- An explanation of how the items detailed in Schedule 2 should be treated in the financial statements for the year ended 31 December 2021.

(sub-task (b) = 48%)

Many thanks

Ethan Tennant
Finance Manager
Acellerate

The attachments to this email can be found by clicking on the Reference Materials button above.

Schedule 1 | Schedule 2

Schedule 1: Sales variance report for the quarter October–December 2021

Size	Lease income price variance	Lease income mix contribution variance	Lease income quantity contribution variance
	E$	E$	E$
Small	12,000 A	15,200 A	3,800 F
Medium	36,000 A	6,720 F	10,080 F
Large / SUV	33,000 A	17,500 F	7,500 F
Total	**81,000 A**	**9,020 F**	**21,380 F**

Size	Budgeted number of cars	Actual number of cars
Small	150	120
Medium	270	300
Large / SUV	180	220
Total	**600**	**640**

Size	Standard lease income per quarter	Standard contribution per quarter
	E$	E$
Small	1,000	380
Medium	1,200	560
Large / SUV	1,500	625

Notes:

- The number of cars represents the average number of cars under the car-subscription service during the quarter.
- The sales mix and quantity variances have been calculated using the individual units method.

Close

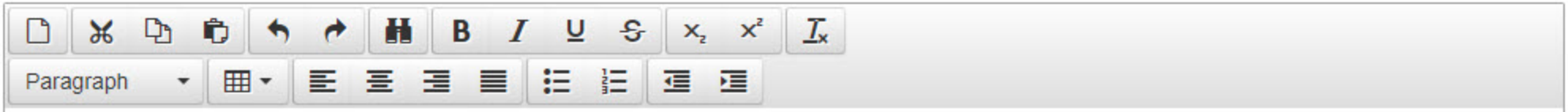
Schedule 1 | Schedule 2

Schedule 2: Items for the financial statement 31 December 2021

Item	Description
1.	There was a fire in one of our car-holding centres on 8 January 2022. The fire caused extensive damage to a number of new cars which were awaiting initial car inspection checks.
2.	On 10 January 2022 we received E$30,000 in settlement of a disputed outstanding debt. We had taken legal action in December 2020 to recover the debt. In view of the uncertainty surrounding the recovery of the debt, we decided to write it off in December 2020.
3.	In December 2021, we reconditioned some of the machinery in our maintenance centres. The machinery has a carrying amount of E$60,000 at 1 January 2021 and the monthly depreciation charge up to 30 November 2021 is E$3,000. The reconditioning of the machinery cost E$40,000 and will extend the useful life of the machinery by 2 years.

Reference Materials Pre-seen

Write the draft report for Ethan Tennant, Finance Manager, in the box below:



Thank you for completing the Operational Case Study Exam.

Before you leave, don't forget to collect your printed confirmation of attendance.

Please click the End Exam (E) button before leaving the testing room quietly.

Operational Case Study Exam

Maximum Time Allowed: 3 Hours

Welcome, Candidate Name

If this is not your name, please let your administrator know.

Click **Next** to start the test.

This examination is structured as follows:

Section number	Time for section (minutes)	Number of tasks	Number of sub-task/s	% time to spend on each sub-task
1	45	1	2	(a) 52% (b) 48%
2	45	1	3	(a) 40% (b) 36% (c) 24%
3	45	1	3	(a) 28% (b) 36% (c) 36%
4	45	1	2	(a) 52% (b) 48%

Each section (task) has a number of sub-tasks. An indication of how much of the time available for the section that you should allocate to planning and writing your answer is shown against each sub-task in the text of the question (and summarised in the table above).

This information will be available for you to access during the examination by clicking on the Pre-seen button.

Pre-Seen

Today is 1 June 2021. The Senior Management Team (SMT) has decided to launch a car-club scheme in three of Everland's major cities: Westport, Southdon and Northlee. The only other car-club scheme in Everland is operated in the capital city, Eastport, by one of Acellerate's competitors. The scheme will be called AcellerEase and will use exclusively electric cars. Members of the scheme will be able to hire an AcellerEase car by the hour through a membership app on their smart phone or tablet. As well as a monthly membership fee, members will pay hourly hire and mileage charges based on usage. The cars will be located for pick-up in various street-side locations around the cities and members will be able to unlock their car through the app. Members will be able to return the car to any AcellerEase parking bay.

You receive the following email:

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: AcellerEase membership app and budget

The AcellerEase membership app has just been developed and tested by CrystalApp, a specialist app development company. We have paid CrystalApp E$500,000 for the development and testing of the app and will pay it a royalty fee of E$0.20 each time the app is downloaded. The app will be hosted on our own servers (which will need to be upgraded), alongside our other apps and will be maintained by our own IT Department. The app will use push notifications and text messaging to connect with the member and will have payment functionality.

The SMT has asked for an estimate of the cost per unit of the app and I would like the new Finance Assistant, Hanna Gilbert, to assist with this. As this is all new to Hanna, I would like you to draft a briefing paper for her which explains:

- How to determine the cost per unit of the AcellerEase app. Please also explain the difficulties associated with doing this.

(sub-task (a) = 52%)

To prepare the budget for the AcellerEase scheme, we will need to estimate membership numbers for each of the three city locations. I would also like Hanna to be involved in this and so please include in your briefing paper an explanation of:

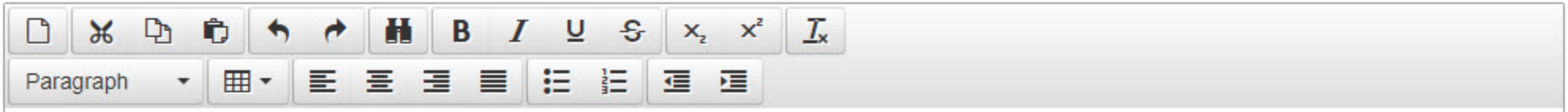
- The types of digital data and the external sources of such data, that would assist in estimating AcellerEase membership numbers for each of the new locations. Please also explain the potential problems of using data obtained from digital sources to establish these estimates.

(sub-task (b) = 48%)

Ethan Tennant
Finance Manager
Acellerate

Reference Material Pre-Seen

Write the briefing paper requested by Ethan in the box below:



Reference Material Pre-Seen

A few weeks later you receive the following email:

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Decision about car lease and financial reporting queries

The new AcellerEase car-club scheme will use two models of electric cars sourced from one car manufacturer: a Small and a Medium model. The Senior Management Team (SMT) has already decided which car manufacturer to use.

This manufacturer has agreed to lease us the fleet of cars for a period of 12 months, with the lease commencing on 1 July 2021. On that date a single payment to cover the period of the lease will be made. This payment will be based on the assumption that the overall mileage of the fleet at the end of the lease will be at a pre-determined medium level. At the end of the lease period there will be a part-refund if the average mileage is at a pre-determined low level or an extra payment required if the average mileage is at a pre-determined high level. The leased cars will be returned to the car manufacturer at the end of the lease.

The manufacturer has offered to include maintenance services as part of the lease agreement. The alternative is to perform our own maintenance. If we choose to include the manufacturer's maintenance, there are two possible options available for the lease cost each based on different thresholds for low, medium and high mileage.

The SMT needs to decide whether to include maintenance services as part of the lease agreement and, if so, which option to choose. To help with this one of your colleagues has drawn up a decision tree (attached). The SMT would also like to know how the lease could be treated in our financial statements given that it is a 12-month lease. Please prepare a briefing paper which explains:

- What the decision tree shows and how we should use it to make the decision about the lease contract. Please also explain any limitations of using decision tree methodology to make this decision.

(sub-task (a) = 40%)

- The two alternative ways in which the lease could be treated within our financial statements for the year ending 31 December 2021 in accordance with IFRS 16 Leases. Assume that mileage will be at the pre-determined medium level.

(sub-task (b) = 36%)

We will be installing some fast-charging points for the electric cars at each of our street-side locations. These will cost a total of E$250,000 and we expect them to have a useful life of 8 years, starting from 1 July 2021. The Everland Government has recently announced that companies can claim 100% first year tax depreciation allowances for capital expenditure related to infrastructure supporting electric cars. Please include in your briefing paper to the SMT an explanation of:

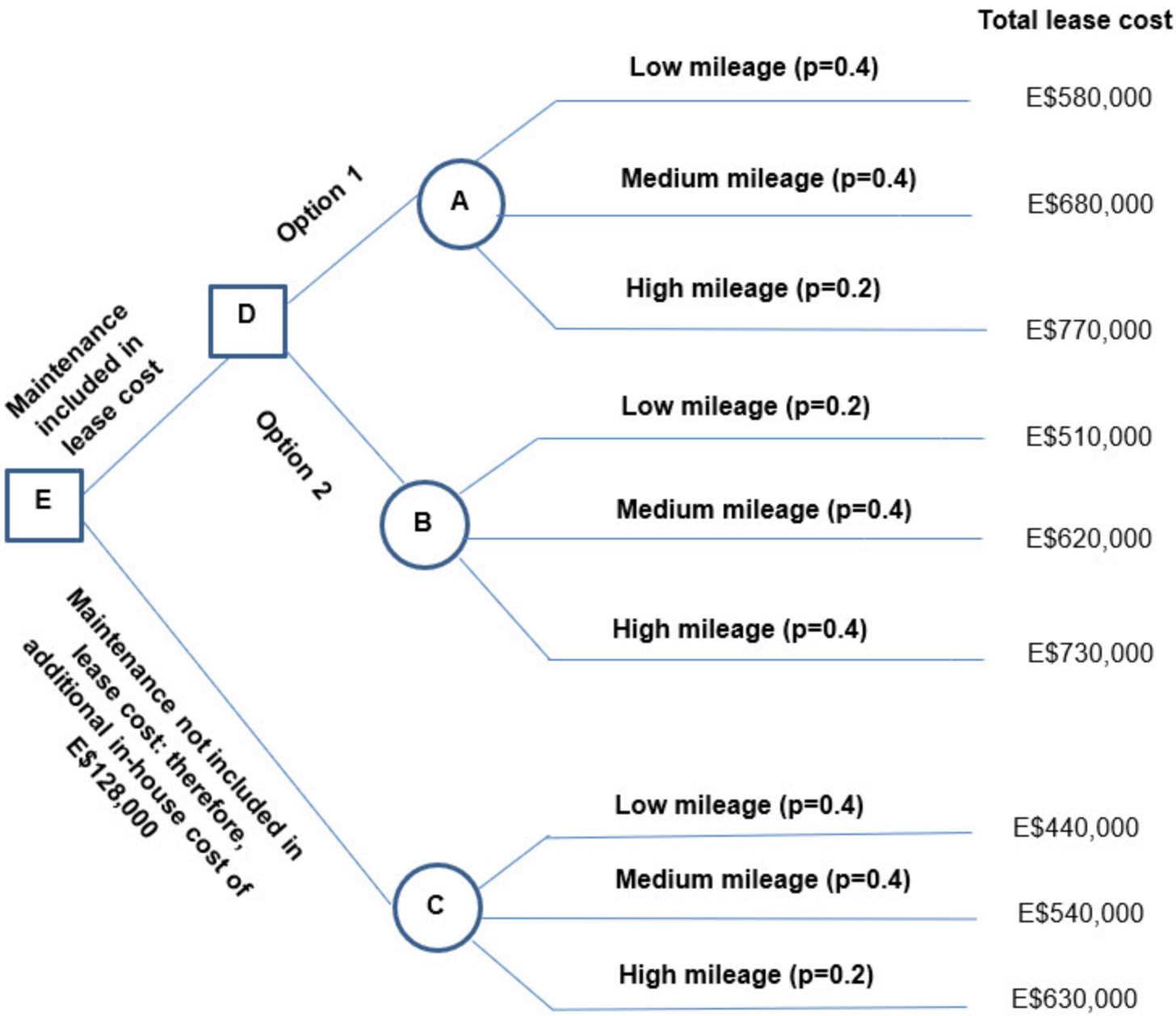
- The impact of the expenditure on the electric-charging points on both our profit or loss reported in our financial statements and on our tax payable for the year ending 31 December 2021.

(sub-task (c) = 24%)

Ethan Tennant
Finance Manager
Acellerate

The attachment to the email can be found by clicking on the Reference Material button above.

Decision tree for the 12-month lease options with car manufacturer



Notes:

- The total lease cost represents the total of lease payments for the period after adjustments for low and high mileage.
- The thresholds for low, medium and high mileage are different for options 1 & 2.
- The expected value is E$658,000 at point A, E$642,000 at point B and E$518,000 at point C.

Close

Reference Material Pre-Seen

Write the briefing paper requested by Ethan in the box below:

Reference Material Pre-Seen

A week later Ethan Tennant, Finance Manager, says to you:

"A new Membership Department is being set up for the AcellerEase scheme. Individuals apply to become members of the scheme through the AcellerEase page on our website. The Membership Department is tasked with setting up membership accounts within 2 working days of application and dealing with all member queries. Members will be required to commit to membership for a period of 6 months, although membership fees will be payable monthly. Charges for car hire and mileage can either be prepaid electronically by members at the start of the hire period or can be added to the account balance. Members will need to set up a bank direct debit to settle their account balance at the end of each month.

The Membership Department will be headed by the Membership Manager. This manager will have ultimate responsibility for membership account set-up, monitoring accounts to ensure that payments are being made and communicating with members to make this happen. The manager will have the authority to cancel a membership as a last resort.

I have been asked to prepare a briefing paper to the Senior Management Team (SMT) in respect of the Membership Department. I would like you to prepare sections for this which:

- Explain the cash flow and recoverability risks associated with the membership payment structure of the AcellerEase scheme and the actions that would help to mitigate these risks.

(sub-task (a) = 28%)

- Suggest three Key Performance Indicators (KPIs) that are appropriate to monitor the performance of the AcellerEase Membership Department. Please explain how each KPI would be calculated and why it would be appropriate.

(sub-task (b) = 36%)

The budget for the AcellerEase scheme for the first 6 months has been constructed based on a fleet of 180 cars and 6,750 members across all three locations. Jack Durand, Retail Operations Director, has suggested that the pricing strategy be considered further as it is his belief that a decrease in the monthly membership fees, car hire and mileage charges would lead to an increase in the number of members. I have prepared some what-if analysis on the original AcellerEase scheme budget, which is included on a schedule that I shall give to you shortly. I would like you to prepare a section to be included in the briefing paper to the SMT which explains:

- How the what-if analysis shown on my schedule helps us to understand the impact of decreasing monthly membership fees, car hire and mileage charges. Please also explain one benefit and one limitation of this what-if analysis."

(sub-task (c) = 36%)

Ethan then hands you a schedule which can be found by clicking on the Reference Material button above.

What-if analysis on the 6-month budget for the AcellerEase car-club scheme

	Original budget E$		Assumption A		Assumption B	
			Revised budget E$	% change	Revised budget E$	% change
Revenue	1,042,605		1,089,522	+4.5%	1,126,013	+8.0%
Fleet costs	(540,000)		(545,400)	+1.0%	(631,800)	+17.0%
Fleet profit	**502,605**		**544,122**	**+8.3%**	**494,213**	**-1.7%**

Notes on original budget

- Revenue includes monthly membership fees, car hire and mileage charges.

Notes on what-if analysis assumptions

- Assumption A is to decrease all fees by 5% which is expected to increase member numbers by 10%.
- Assumption B is to decrease all fees by 10% which is expected to increase member numbers by 20%. As a result of the increase in member numbers the fleet would need to be increased by 30 cars.
- The % change under each assumption is the change against the original budget.

Reference Material Pre-Seen

Write the sections for the briefing paper to SMT requested by Ethan in the box below:

Reference Material Pre-Seen

Four months later you receive the following email:

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Sales variances and limiting factor analysis

The AcellerEase scheme has been operating for over 3 months at each of our three locations. What I know about each of the locations is that:

a. Westport is a large port city that has a relatively poor public transport system.
b. Southdon is a small and relatively modern city with an excellent public transport system. There was a 2-week delay in setting up the AcellerEase scheme in Southdon due to delays negotiating with the local council.
c. Northlee is an old industrial city which has recently had significant Government investment in its public transport system, which is now seen to be among the best in Everland.

There are two types of membership: occasional and frequent user. With a frequent user membership, the member pays a larger membership fee, but a lower hourly hire fee than a member with an occasional membership. For the first month of the scheme Jack Durand, Retail Operations Director, authorised a one-off promotional discount on both occasional and frequent user membership fees.

The Senior Management Team (SMT) has requested a briefing paper on actual membership fee income compared to budgeted membership fee income within each of the three locations. I have calculated the variances (attached) based only on income from membership fees in each location and would like you to prepare commentary for the briefing paper that explains:

- What the membership fee income price, mix and quantity variances shown in Table 1 of the attached schedule mean. Please give possible reasons why the variances have occurred and what these variances suggest about the potential success of the AcellerEase scheme in each location.

(sub-task (a) = 52%)

The SMT is considering whether to outsource cleaning of the AcellerEase cars. The outsourcing contract would be for an initial period of 12 months. Currently, cars are cleaned by our in-house teams at each location at least 3 times a week. I have prepared a chart showing the cost of car cleaning if we outsource compared to the cost of car cleaning in-house (see attached). The chart shows the total of the costs for all three locations. I would like you to prepare commentary for the briefing paper which explains:

- What Chart 1 on the attached schedule indicates about the cost structure of the different options and whether outsourcing or cleaning cars in-house is better financially. Please also explain three other factors that need to be considered before deciding whether to outsource car cleaning.

(sub-task (b) = 48%)

Ethan Tennant
Finance Manager
Acellerate

The attachments to the email can be found by clicking on the Reference Material button above.

Table 1 | Chart 1

Table 1: Membership fee income variances by location for the period July to September 2021

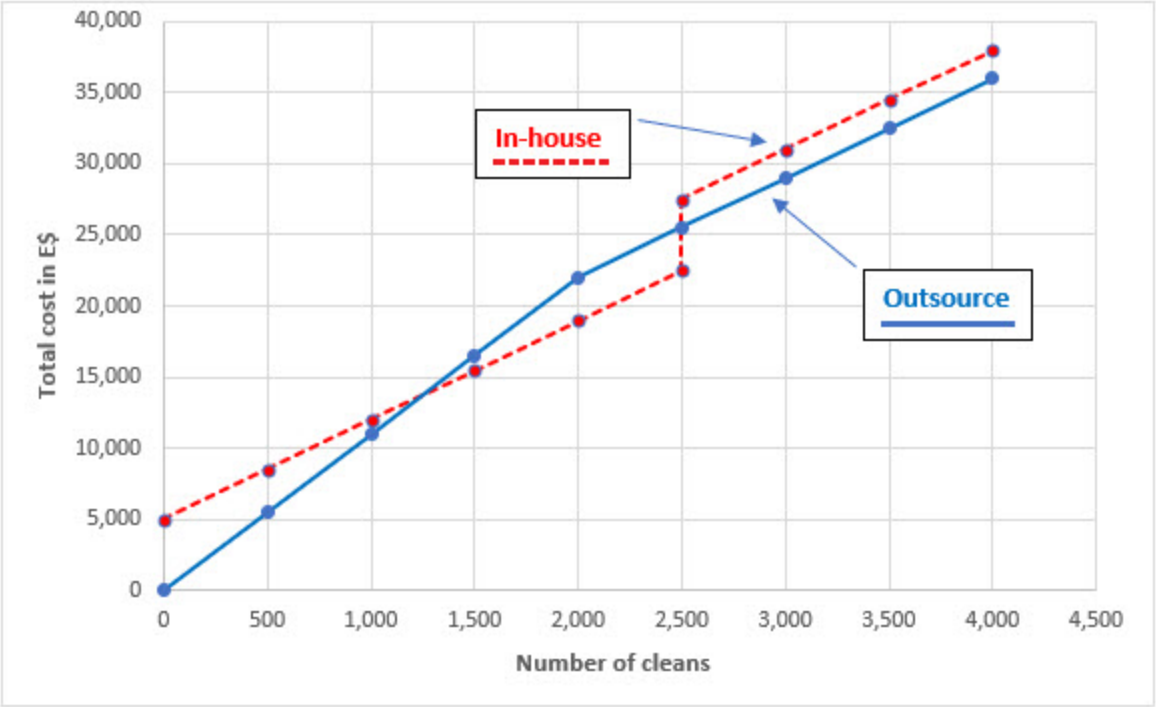
	Westport E$	Southdon E$	Northlee E$
Price variance	8,100 A	938 A	7,200 A
Mix variance	12,987 F	9,750 A	7,800 A
Quantity variance	9,813 F	Nil	4,200 F

Notes:

- The mix and quantity variances are calculated using the individual units method based on budgeted membership fee income per member for each type of membership within each location.
- Each location has the same budget for the 3-month period. Membership fee income per member for a 3-month period is E$15 for occasional and E$54 for frequent user memberships in all locations. Budgeted member numbers for the quarter were 1,500 occasional and 750 frequent users at each location.

Table 1 | Chart 1

Chart 1: Monthly cost of car cleaning: outsourcing and in-house



- The average number of car cleans carried out each month in the period July to September was 2,180.
- It is expected that the total fleet size will increase by at least 40% in the forthcoming months.

Close

Reference Material Pre-Seen

Write the commentary requested by Ethan in the box below:

Paragraph

Thank you for completing the Operational Case Study Exam.

Before you leave, don't forget to collect your printed confirmation of attendance.

Please click the End Exam (E) button before leaving the testing room quietly.

Operational Case Study Exam

Maximum Time Allowed: 3 Hours

Welcome, Candidate Name

If this is not your name, please let your administrator know.

Click **Next** to start the test.

This examination is structured as follows:

Section number	Time for section (minutes)	Number of tasks	Number of sub-task/s	% time to spend on each sub-task
1	45	1	2	(a) 52% (b) 48%
2	45	1	3	(a) 36% (b) 24% (c) 40%
3	45	1	3	(a) 16% (b) 48% (c) 36%
4	45	1	3	(a) 48% (b) 24% (c) 28%

Each section (task) has a number of sub-tasks. An indication of how much of the time available for the section that you should allocate to planning and writing your answer is shown against each sub-task in the text of the question (and summarised in the table above).

This information will be available for you to access during the examination by clicking on the Pre-seen button.

Reference Material Pre-Seen

Today is 1 June 2021. Following a difficult 2020 due to the global economic recession, the Senior Management Team (SMT) is pleased that recovery during the first 5 months of 2021 has been swifter than had been anticipated when the budget for 2021 was set. This recovery has meant that the car fleet has been increased and therefore a revised budget for the period July to December 2021 has been prepared.

You receive the following email:

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Profit-volume chart and time series

The SMT has asked for an overview of how our revised budget for July to December 2021 compares to the original budget for that period. A colleague has drawn up a multi-product profit-volume chart (Schedule 1 attached) based on the original and the revised budgets. Please prepare a briefing paper for the SMT which explains:

- The assumption underpinning Line A on the profit-volume chart and what this line tells us about the original budget. Please also explain what Line B indicates about the revised budget.

(sub-task (a) = 52%)

The SMT is also considering new opportunities (these are not reflected in the revised budget). One such opportunity is setting up a car rental operation in the South West region of Keyland. As you will know already, Keyland is a small neighbouring country that shares our E$ currency and its South West region is a major beach vacation destination. To help gauge the size of the market, I have obtained data about the number of car rental days per quarter in South West Keyland and have used this to produce time series information (Schedule 2 attached). Please include in the briefing paper an explanation of:

- What the time series information tells us about demand for car rental days in South West Keyland and the usefulness of this information to us for planning purposes.

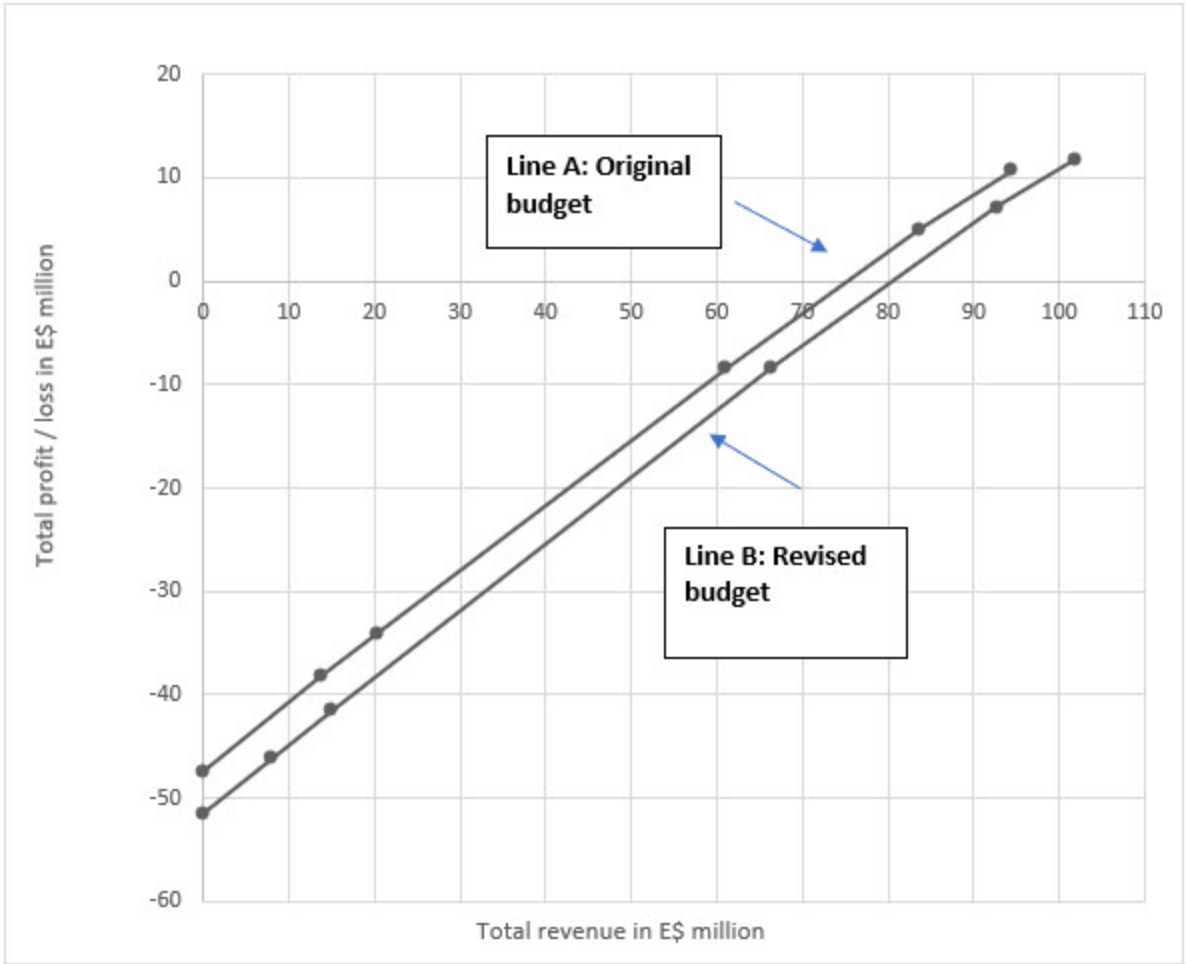
(sub-task (b) = 48%)

Ethan Tennant
Finance Manager
Acellerate

The attachments to the email can be found by clicking on the Reference Material button above.

Schedule 1 | Schedule 2

Schedule 1: Multi-product profit-volume chart for original and revised budget for July to December 2021



Other information

Close

Schedule 1 | Schedule 2

Schedule 2: Time series information for car rental days in the South West of Keyland

These results are based on the quarterly car rental days for the 3 years from January 2017 to December 2019.

Trend by car type

	Car type		
	Small	**Medium**	**Large/SUV**
Trend line	Y = 712,000 + 180Q	Y = 825,000 + 2,500Q	Y = 328,000 – 6,000Q

Average seasonality for all car types*

January–March	-50%
April–June	+20%
July–September	+40%
October–December	-10%

*seasonal variations for each type of car are virtually identical.

Key:

Y = number of rental days a quarter for each type of car.

Q = the quarter number (where Q = 1 is the first quarter of 2017).

Reference Material Pre-Seen

Write the briefing paper requested by Ethan in the box below:

Reference Material Pre-Seen

It is now July 2021. The Senior Management Team (SMT) recently agreed a preferred partner arrangement with SW Hotels, a major hotel chain in Keyland. The terms of the contract allow Acellerate to establish small sales offices and car depots at 15 of SW Hotels largest hotels. We expect that for the first 6 months these will be Acellerate's only sales offices and car depots in Keyland.

You receive the following email:

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Marketing decision, flexible budgeting and service provider selection

The SMT needs to decide which of two promotional campaigns to use for our new venture in Keyland: Campaign A or Campaign B and whether to engage the services of BGF Consultancy to manage either campaign for an additional fee. I have prepared a payoff table showing the outcomes of the four possible options available to us (Table 1 attached). Please prepare a briefing paper for the SMT which explains:

- How to apply maximax and maximin decision criteria to Table 1, stating which of the four possible options would be chosen under each criterion. Please also explain the decision-making approaches that we could use if we knew the probabilities of the outcomes occurring.

(sub-task (a) = 36%)

We are in the process of preparing a budget for the Keyland operation. There is uncertainty regarding the number of car rental days that we will sell. We can make more cars available and so the principal budget factor will be the demand for car rental days. Because of this uncertainty, I am proposing to present the initial budget to the SMT on a flexible budget basis. Please include in your briefing paper an explanation of:

- The benefits of using flexible budgeting techniques for planning purposes.

(sub-task (b) = 24%)

It has been decided that in Keyland all cars will be cleaned and valeted by a third-party service provider. I would like you to explain in your briefing paper:

- For each of the three potential service providers, what the information contained in Table 2 of the attachment indicates about their approach to working capital management and their suitability as our service provider.

(sub-task (c) = 40%)

Ethan Tennant
Finance Manager
Acellerate

The attachment to the email can be found by clicking on the Reference Material button above.

Table 1: Payoff table of profit or loss from the promotional campaigns*

Success of campaign	With BGF Consultancy		Without BGF Consultancy	
	Campaign A E$000	Campaign B E$000	Campaign A E$000	Campaign B E$000
Moderate	(58)	(82)	17	(137)
Good	471	536	589	505
Very good	736	889	875	872

*Profit or loss is for the first 6 months of operation in Keyland and is after the cost of each promotional campaign and after BGF Consultancy's additional fee of E$200,000 where appropriate. The cost of Campaign B is more expensive than that of Campaign A.

Table 2: Information about possible car valeting service providers

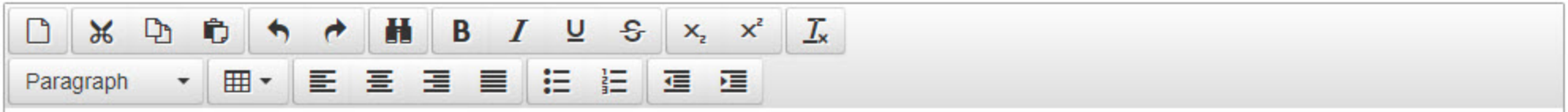
	JRT Valets	KeyClean	Gleam
Receivable days	31 days	41 days	82 days
Payable days	72 days	41 days	63 days
Cash / (overdraft) balance	E$10 million	E$2 million	(E$12 million)
Change in revenue from prior year	-15%	- 6%	+ 12%
Average number of customers	15	5	8

Notes:

- All three service providers supply valet services for car fleets.
- The information is based on financial statements for the year ended 30 June 2021.
- Each service provider offers and receives 30-day credit terms.

Reference Material Pre-Seen

Write the briefing paper requested by Ethan in the box below:



Reference Material Pre-Seen

It is now December 2021. The 15 Acellerate sales office and depot sites at SW Hotels locations (known internally as the Keyland operation) started trading on 1 October 2021. The Keyland operation has its own website, independent to that of the main company, through which bookings for car rentals are made. Anybody in Keyland (hotel guests and non-hotel guests alike) can book a car rental through this website or at the sales desk at each hotel. All cars are picked up from the depot at each hotel location. SW Hotels earns a commission based on all of the revenue generated by the Keyland operation.

The Keyland operation is managed by Bill Hooper, Keyland Manager. Bill has overall responsibility for the Keyland operation and has the authority to undertake promotional campaigns and to make operational decisions regarding suppliers of services. He reports directly to the Senior Management Team (SMT).

Ethan Tennant, Finance Manager, says to you:

"I have prepared a schedule (labelled Schedule 1) reconciling budgeted and actual fleet profit from the Keyland operation for its first 2 months of trading. I will give this to you shortly. Because this is a new venture, the SMT was initially involved in some of the decision-making regarding Keyland. I have therefore split the variances into planning and operational to assist the SMT to evaluate the performance of Bill Hooper based on his actions and decisions. Please prepare content for a report to the SMT which explains:

- The importance of splitting the Keyland variances into planning and operational variances.

(sub-task (a) = 16%)

- How each of the actions taken by the SMT and Bill Hooper identified on Schedule 1 affected the variances shown in my reconciliation statement.

(sub-task (b) = 48%)

In Keyland, most of our customers book their car hire online through our dedicated Keyland website, rather than at the sales office. SW Hotels has a page on its own website which gives information about us and provides a link to the booking page on our Keyland website. I have prepared a schedule (labelled Schedule 2) of associated Key Performance Indicators (KPIs) and would like you to prepare content for the report to the SMT which explains:

- What the KPIs in Schedule 2 mean and the potential reasons why the targets have either been exceeded or not achieved."

(sub-task (c) = 36%)

Ethan then hands you Schedule 1 and Schedule 2 which can be found by clicking on the Reference Material Button above.

Schedule 1: Keyland operation for the first 2 months of trading: reconciliation of original budgeted fleet profit to actual fleet profit

	E$000
Original budgeted fleet profit	1,408
Sales price planning variance	79
Commission cost planning variance	(12)
Fleet cost planning variance	115
Revised budgeted fleet profit	**1,590**
Sales volume operational variance	49
Commission cost operational variance	(78)
Fleet cost operational variance	(45)
Actual fleet profit	**1,516**

Notes

1. The sales volume variance is based on rental days and weighted average budgeted fleet profit per day.
2. The commission rate paid to SW Hotels for sales to customers booking rentals at the sales desks at hotels is higher than the commission rate paid for customers booking rentals online. Commission is paid as a percentage of sales revenue.

Actions taken by Acellerate's SMT

- Agreed a price reduction with the external provider of fleet maintenance services.
- Changed the daily hire charges for small cars.

Actions taken by Bill Hooper, Keyland Manager

- Carried out a social media promotion aimed at encouraging customers to book online.
- Changed the car valeting service provider at the end of the first month due to poor service.

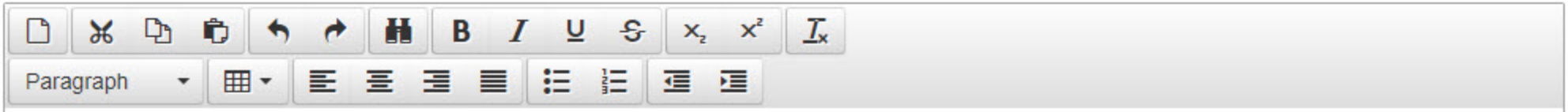
Schedule 1 | Schedule 2

Schedule 2: Key performance indicators

Indicator	Measurement	Actual	Target
Click through rate from the SW Hotels webpage	Number of clicks to the Acellerate booking page divided by number of views on the SW Hotels webpage	68%	80%
Conversion rate on the Acellerate Keyland website	Total number of online bookings divided by the total number of visitors to the Acellerate Keyland website	74%	70%
Booking page abandonment rate	Number of people abandoning the booking page divided by number of people visiting the booking page	3%	5%

Reference Material Pre-Seen

Write the content for the report as requested by Ethan in the box below:



Reference Material Pre-Seen

It is now February 2022 and you receive the following email:

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Cost drivers and financial reporting queries

The Senior Management Team (SMT) is reviewing pricing policy and would like to know more about how the length of rental periods impacts costs. Currently for the Keyland operation we apportion all operating costs to small car rentals using a standard average cost per small car of E$20.50. This includes fleet, personnel and network costs. I have prepared a table (Table 1 attached) to show what I think drives some of our operating costs. I would like you to prepare a briefing paper for the SMT which explains:

- Why it would be beneficial to use the information in the table rather than our current standard average cost per day when setting prices for rentals. Please use each of the three activities identified in Table 1 (attached) to illustrate your explanation.

(sub-task (a) = 48%)

The SMT decided last month that a maintenance centre will be set up in Keyland. Up until now all car maintenance in Keyland has been outsourced. Diagnostic equipment that we already own, will be transferred to Keyland from Everland. In addition, car ramps will be leased. I've included details of both of these in Table 2 (attached). Please include in the briefing paper an explanation of:

- How the expenditure on the diagnostic equipment being transferred to Keyland will be initially recorded and subsequently measured in our financial statements for the year ending 31 December 2022.

(sub-task (b) = 24%)

- How the right of use asset arising from the lease will be initially recorded and subsequently measured in our financial statements for the year ending 31 December 2022.

(sub-task (c) = 28%)

Ethan Tennant
Finance Manager
Acellerate

The attachments to the email can be found by clicking on the Reference Material button above.

Table 1 | Table 2

Table 1: Examples of activities, cost drivers and number of cost drivers for different car rental periods

Activity	Cost driver	1-day car rental period	7-day car rental period	14-day car rental period
Car pick-up	Number of pick-ups	1	1	1
Cleaning	Number of hours required	0.2	0.4	0.6
Oil change	Number of kilometres driven	80	560	1,120

Further information about cleaning and servicing in Keyland:

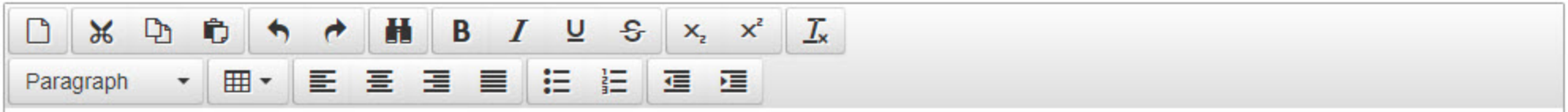
- An external valet service provider is used to clean the cars, which charges us E$18 per hour.
- The cars used in Keyland have their oil changed every 10,000 kilometres in line with manufacturers' requirements.

Table 2: Equipment for the new Keyland Maintenance Centre

Equipment	Detail
Diagnostic equipment transferred to Keyland	The diagnostic equipment at 31 December 2021 had a carrying amount of E$65,000 and a remaining useful life of 4 years. Before transfer, this equipment will be upgraded at a cost of E$34,000 which will extend its useful life to 7 years. It will cost E$1,000 to transport the equipment to Keyland and a further E$800 to have it installed. The maintenance employees in Keyland will also need to be trained on its use at a cost of E$750.
Car ramps to be leased	The lease will commence on 1 March 2022, when the first payment of E$12,000 will be made. There will be a further 4 lease payments of E$12,000 made on 1 March each year. At the end of 4 years, there is an option to extend the lease term by a further 2 years for lease payments of E$5,000 a year. At the end of this extended period we would then own the equipment. We fully expect to extend the lease term. If we were to purchase this equipment now, we would expect its useful life to be 8 years. The costs of setting up the lease are E$500.

Reference Material Pre-Seen

Write the briefing paper requested by Ethan in the box below:



Thank you for completing the Operational Case Study Exam.

Before you leave, don't forget to collect your printed confirmation of attendance.

Please click the End Exam (E) button before leaving the testing room quietly.

Operational Case Study Exam

Maximum Time Allowed: 3 Hours

Welcome, Candidate Name

If this is not your name, please let your administrator know.

Click **Next** to start the test.

This examination is structured as follows:

Section number	Time for section (minutes)	Number of tasks	Number of sub-task/s	% time to spend on each sub-task
1	45	1	3	(a) 48% (b) 28% (c) 24%
2	45	1	3	(a) 36% (b) 28% (c) 36%
3	45	1	3	(a) 28% (b) 32% (c) 40%
4	45	1	3	(a) 44% (b) 20% (c) 36%

Each section (task) has a number of sub-tasks. An indication of how much of the time available for the section that you should allocate to planning and writing your answer is shown against each sub-task in the text of the question (and summarised in the table above).

This information will be available for you to access during the examination by clicking on the Pre-seen button.

Reference Material Pre-Seen

Today is 1 June 2021. The Senior Management Team (SMT) is undertaking a project to review the operations of the maintenance centres, with the objective of optimising their efficiency and resource utilisation. You receive the following email:

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Cost competitiveness and utilisation of resources

There was a SMT meeting yesterday about the maintenance centres, where Joseph Waller, Managing Director, mentioned that he had recently read an article on CGMA's cost transformation model, which is about achieving and maintaining cost competitiveness. He believes that whilst our maintenance centres are not profit centres, being cost competitive is still important and relevant, especially in relation to:

1. Engendering a cost-conscious culture
2. Managing the risk inherent in driving cost-competitiveness
3. Understanding cost drivers and cost accounting systems and processes.

Joseph believes that these principles are to some extent already being applied within the maintenance centres (some operational details of which I have included on Schedule 1 attached). Please prepare a briefing paper that can be sent to the SMT which explains:

- The three areas of the CGMA cost transformation model identified above and how these apply within our maintenance centres.

(sub-task (a) = 48%)

It has been identified that there is spare capacity at the maintenance centres for the next 3 months. This spare capacity could be used to service cars for external clients and two separate 3-month contracts are available with FG Holdings and SB Industries. The maximum demands for Partial and Complete car services for each company over the period are as follows:

	Partial Services	Complete Services
FG Holdings	1,150	250
SB Industries	150	600
Total	**1,300**	**850**

We do not have the capacity to meet these contracts in full, but both potential customers have indicated that they would be prepared to accept a lower number of services over the period. I have drawn up a linear programming graph (see Schedule 2 attached). Please include in your briefing paper an explanation of:

- The linear programming graph and how it can be used to determine the best use of the spare capacity. Please also identify what the graph indicates this to be.

(sub-task (b) = 28%)

- Three factors we should consider before proceeding with the mix of car services suggested by the graph.

(sub-task (c) = 24%)

Ethan Tennant
Finance Manager
Acellerate

The attachments to the email can be found by clicking on the Reference Material button above.

Schedule 1 | Schedule 2

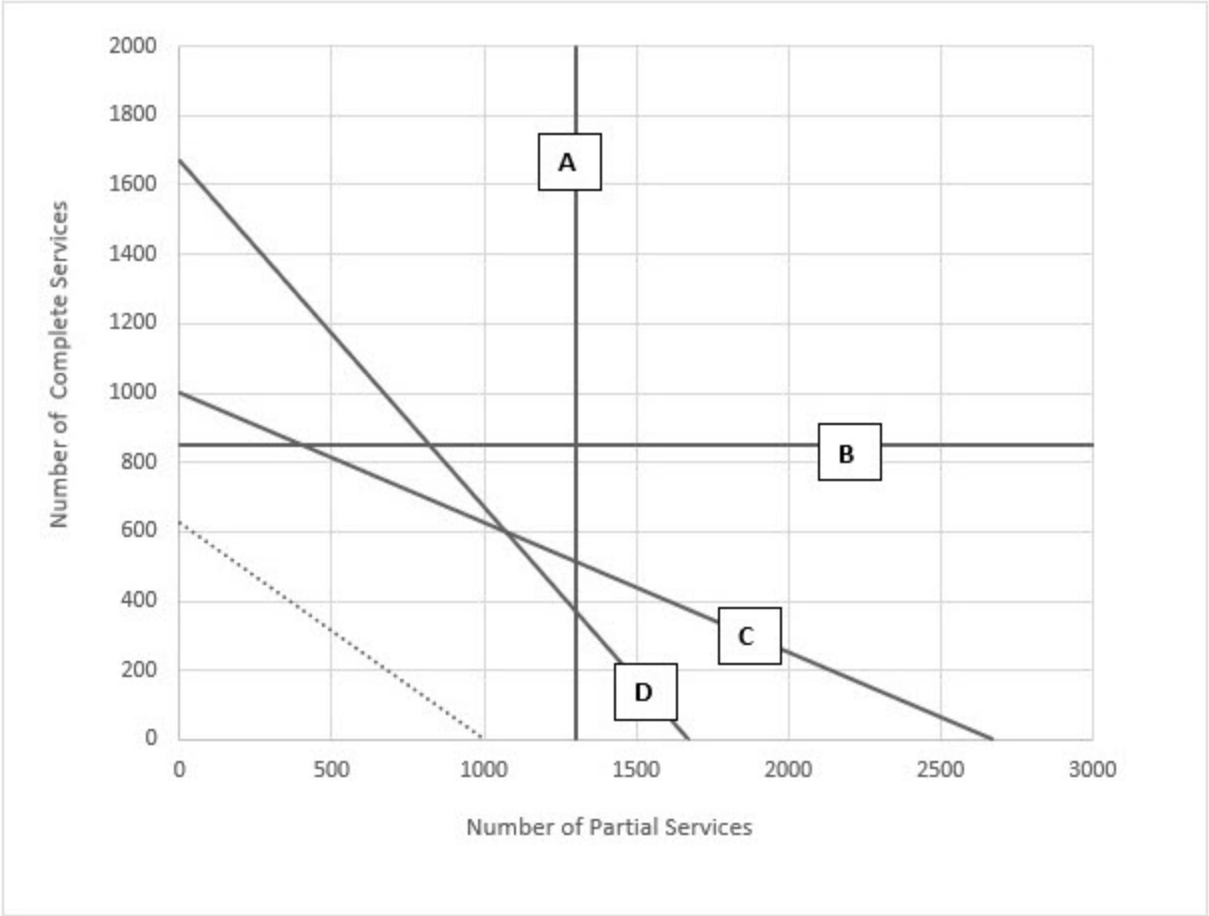
Schedule 1: Information about maintenance centre operations

- Each maintenance centre has a Maintenance Manager who is responsible for all aspects of human resourcing and productivity of all employees at the centre. Regular employee meetings are held at each centre and all employees are encouraged to participate in these to share ideas. At these meetings key performance measures for the centre are shared, including measures linked to wastage, throughput and energy usage.

- Relationships with suppliers are managed centrally and there is a list of approved suppliers. The Maintenance Manager has the authority to purchase consumables, parts and small items of equipment, from any of the approved suppliers. For many of the cars in the fleet, parts have to be purchased direct from the manufacturer, although consumables are purchased from a range of suppliers.

Schedule 1 | Schedule 2

Schedule 2: Linear programming graph



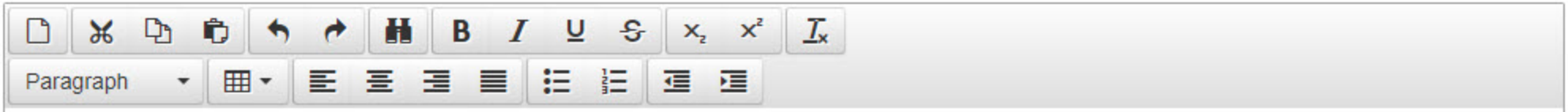
Key to the graph:

- Lines A and B are the maximum number of Partial and Complete services required to satisfy both contracts.
- Lines C and D are the constraint lines for direct labour hours and diagnostic machine hours respectively.
- The dotted line is the iso-contribution line.

Close

Reference Material Pre-Seen

Write the briefing paper requested by Ethan in the box below:



Reference Material Pre-Seen

It is a week later, and the Senior Management Team (SMT) review of the maintenance centres is continuing. You receive the following email:

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Fixed overhead variances, feedforward control and Key Performance Indicators (KPIs)

I have been asked to prepare a report on the performance of our Southport Maintenance Centre for the period January to May 2021. I would like you to complete the section on the fixed overhead variances for the period (these are shown in Table 1 attached). During this period the following happened at the centre:

a. It was busier than anticipated because of extra repair and servicing work.
b. In January, three experienced mechanics left but only one new experienced mechanic was appointed.
c. In February, five new apprentice mechanics were appointed. The original plan was for these mechanics to be appointed in June, which is when the formal training programme is scheduled to start. We were too late to reschedule this formal training and therefore these apprentices started work in the centre after a 1-week induction course and have been trained on-the-job.
d. In recognition of the possibility of the increased level of work continuing, two new supervisors were appointed in April.
e. Additional equipment was leased in February.

Please prepare content for a report to the SMT which explains:

- What each of the variances in Table 1 mean and possible reasons for their occurrence.

(sub-task (a) = 36%)

Megan Dubois, Finance Director, has suggested that whilst reviewing variances gives useful information about performance, it is a feedback control approach. She believes that it would be beneficial to consider a feedforward control approach and has asked for a section of the report to the SMT to include an explanation of:

- A feedforward control approach and how this differs from a feedback control approach. Please also explain how a feedforward control approach would have been beneficial for the Southport Maintenance Centre over the past 5 months.

(sub-task (b) = 28%)

Megan has also suggested that the performance of the maintenance centre managers should be monitored with the use of KPIs. Please include in your report:

- Suggestions of three KPIs that are appropriate to monitor the performance of maintenance centre managers with respect to their management of employees. Please explain how each KPI would be calculated and why it would be appropriate.

(sub-task (c) = 36%)

Ethan Tennant
Finance Manager
Acellerate

The attachment to the email can be found by clicking on the Reference Material button above.

Table 1: Southport Maintenance Centre – fixed overhead variances for the period January to May 2021

Fixed overhead variance	E$000	
Expenditure	26,000	Adverse
Efficiency	20,600	Adverse
Capacity	61,800	Favourable

Notes:

- Fixed overheads are absorbed into the cost of each type of maintenance task undertaken on the basis of direct labour hours. The standard absorption rate for the Southport Maintenance Centre for 2021 is E$20.60 per direct labour hour.
- Fixed overheads include the cost of equipment, premises and indirect labour. They also include the cost of training (including hours paid to direct employees whilst training).

Reference Material Pre-Seen

Write the content for the report requested by Ethan in the box below:

Paragraph

Reference Material Pre-Seen

A week later, following a meeting of the Senior Management Team (SMT) where the maintenance centres were discussed, Ethan Tennant, Finance Manager, has been tasked with providing a report on a number of matters. Ethan says to you:

"At the SMT meeting, it was suggested that we should consider using a zero based budgeting (ZBB) approach for costs such as maintenance apprentice training. I will send you some information about the budget for this shortly. Please prepare a briefing paper to the SMT which explains:

- How a ZBB approach can be applied to create a budget for the maintenance employee training costs.

(sub-task (a) = 28%)

- The benefits to the business of using a ZBB approach for budgeting these costs and any challenges that we might face if we did apply this approach in practice.

(sub-task (b) = 32%)

Also, it has been suggested that the Economic Order Quantity (EOQ) model could be used to determine the amount of each type of tyre to order each time an order is placed. It usually takes 1 week between placing an order and receiving tyres from our main supplier. However, there are other specialist tyre suppliers where lead times can vary considerably.

Please include in your briefing paper an explanation of:

- The information needed to calculate the EOQ for each type of tyre that we purchase, the nature of the costs involved and why the EOQ is considered optimal. Please also explain how to deal with our issues with lead times assuming that we use an EOQ approach."

(sub-task (c) = 40%)

Ethan later sends you a schedule which can be found by clicking on the Reference Material button above.

Maintenance centres' apprentice training budget for the year to 31 December 2021

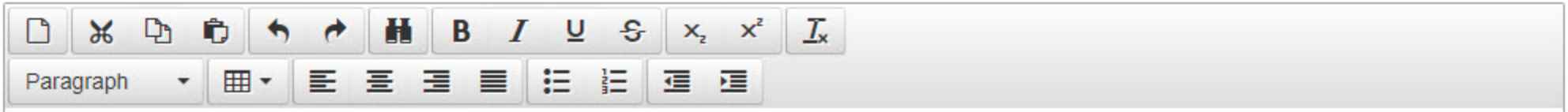
	E$000
Formal training – classroom and practical	650
On-the-job training	240
Total	**890**

Notes:

- Apprentices follow a formal programme that combines classroom studies and practical training over a 2-year period. To qualify, each apprentice must pass a set of examinations and practical assessments. Formal training is currently carried out by external training providers. The setting-up of an Acellerate Training Centre to bring this in-house has been considered in the past.
- On-the-job training happens within each maintenance centre and is additional to the formal training programme. Each maintenance centre manager has the authority to tailor on-the-job training to meet the needs of that centre and the apprentices.

Reference Material Pre-Seen

Write the briefing paper requested by Ethan in the box below:



Reference Material Pre-Seen

It is now mid November 2021. As a result of reviewing maintenance operations, the Senior Management Team (SMT) decided to carry out an extensive reorganisation of the maintenance centres. You receive the following email:

From: Ethan Tennant, Finance Manager
To: Finance Officer
Subject: Financial reporting and short-term decision

As part of the reorganisation of the maintenance centres, we have identified assets and inventory which will be surplus to requirements. I've included details of these in Table 1 on the attached Schedule 1.

Please prepare a briefing paper for the SMT which explains:

- Whether the old lifting ramps identified in Table 1 meet the criteria to be reclassified as assets held for sale and, if so, how they will be reflected in our financial statements for the year ending 31 December 2021.

(sub-task (a) = 44%)

- How the inventory identified in Table 1 will be reflected in our financial statements for the year ending 31 December 2021.

(sub-task (b) = 20%)

George Oswald, Maintenance Manager, has told me about an opportunity to buy premium grade motor oil from a new supplier under a 12-month supply contract. This type of oil is used in a number of our cars and can be purchased from this supplier in 5-litre cans which can be stored at our maintenance centres.

The oil would need to be purchased at the start of the contract in one of three quantities, each at a different price per litre. Because there is a risk that such oil can deteriorate over time, our policy is to dispose of any that we have held in inventory for more than 12 months. This means that any oil purchased in this contract that is unused at the end of 12 months would need to be disposed of at a cost to us. Any additional oil needed would be purchased from our usual supplier, but at a higher price. There is uncertainty regarding how much we'll need and so I've prepared pay-off and regret tables based on the total cost of oil for the period. These are Table 2 and Table 3 on the attached Schedule 2.

Please include in your briefing paper an explanation of:

- The maximax, maximin and minimax regret decision criteria and how each of these could help us decide, based on cost, which premium grade motor oil quantity to purchase. Please state the quantity we would purchase under each of these decision criteria.

(sub-task (c) = 36%)

Ethan Tennant
Finance Manager
Acellerate

The attachments to the email can be found by clicking on the Reference Material button above.

Table 1: Equipment to be sold and inventory

Equipment to be sold	Some lifting ramps are to be replaced on 24 November 2021. On that date the old ramps will be removed at a cost of E$600 and will then be cleaned and repaired during the following week. We expect the cleaning and repair to cost E$900. The carrying amount of these lifting ramps at 1 November 2021 is E$62,000 and monthly depreciation is E$1,000. We plan to sell the old lifting ramps and will advertise them once the cleaning and repairs have been completed. We expect to receive a price of around E$50,000 which is the current second-hand market value for this type of equipment. We anticipate that because of the Christmas period we won't sell the equipment until January or February 2022.
Inventory	600 tyres have been identified as surplus to requirements as we no longer have the relevant car models in our fleet. We purchased these tyres for E$45 each. 100 of the tyres have been damaged and therefore can only be sold for scrap at a price of E$5 per tyre. We expect to transport these tyres to the scrap yard in January 2022 at a cost of E$200. The other 500 tyres are in good condition and can be sold for E$50 a tyre. We already have a buyer lined up for these who will collect the tyres in January 2022.

Table 2: Pay-off table showing total oil cost

	Options		
	Quantity 1 E$	Quantity 2 E$	Quantity 3 E$
Usage level			
Low	78,029	86,835	94,003
Medium	80,077	84,992	92,160
High	103,014	96,256	91,750

Note:

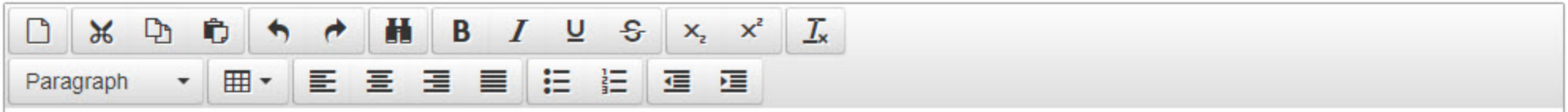
The above table shows the total cost of premium grade motor oil for the 12-month period of the contract, including any costs of disposing unused oil for each of the nine possible combinations.

Table 3: Regret table

	Options		
	Quantity 1 E$	Quantity 2 E$	Quantity 3 E$
Usage level			
Low	0	8,806	15,974
Medium	0	4,915	12,083
High	11,264	4,506	0

Reference Material Pre-Seen

Write the briefing paper requested by Ethan in the box below:



Thank you for completing the Operational Case Study Exam.

Before you leave, don't forget to collect your printed confirmation of attendance.

Please click the End Exam (E) button before leaving the testing room quietly.

OPERATIONAL CASE STUDY
MAY & AUGUST 2021
EXAM ANSWERS

Variant 1

These answers have been provided by CIMA for information purposes only. The answers created are indicative of a response that could be given by a good candidate. They are not to be considered exhaustive, and other appropriate relevant responses would receive credit.

CIMA will not accept challenges to these answers on the basis of academic judgement.

SECTION 1

Activity based costing (ABC)

How we would use ABC to identify the costs of the different elements of the service

Firstly, we would need to identify the individual activities within each element of the fleet management service and determine the cost drivers for each activity. The cost driver is the activity or action that drives or generates the cost. With respect to car servicing, for example, the activities identified are: car inspection; checks on fluids and equipment; car diagnostics; top-up and replacement of fluids; replacement of car parts and mechanical adjustment. For car inspection, car checks and car diagnostics, the cost driver will be the number of services carried out each period since these activities will be carried out in the same way for each service. The cost of the other activities will be driven by the type and complexity of the service that is being carried out. The service interval will vary with different makes and models of cars and therefore the time taken for each service will differ. Services undertaken on cars with higher mileage are likely to require a more complex process and therefore take a longer time.

Activities that have the same cost driver would then be grouped together and all the costs associated with those activities would be collected in a cost pool. For example, the cost pool for replacement of car parts would include indirect labour costs associated with the activity and the cost of using the machinery to carry out the activity including depreciation and energy consumed.

We would then need to estimate the number of cost drivers for each of the cost pools, such as the number of services and the mix of types of services. This will be determined by the type/make of car, the mileage covered and the manufacturer's requirements to maintain the warranty. This will require an

estimate of the number of new clients for the service and the number of cars in each client's fleet. We will also need to determine the average service interval for the cars in order to estimate the total number of services. These figures will be added to the car numbers and service requirement for the existing rental fleet. The total costs would be divided by the estimated number of cost drivers to calculate a cost driver rate. The cost for each cost pool would then be absorbed on the basis of the cost driver rate.

Benefits of using ABC

It is clear from the above that different activities incur different costs and that these costs arise for different reasons. We are offering customers the opportunity to customise the fleet management service therefore it is important that we have an understanding of the costs of providing each element of the service. If we use an ABC approach it will give us a much clearer indication of the costs of servicing each of our customers.

If we are able to establish a more accurate cost for each element of the service, we will be able to price the service accordingly. It will also allow us to more clearly justify the price to the customer.

It would also be helpful for planning and control purposes if we had more accurate costs. We would be able to establish a more realistic budget and it would be easier to identify the reasons for any variances from budget.

Rolling budgets

Benefits and drawbacks of adopting rolling budgets

At present, Acellerate sets budgets once per year for the next 12 months. As we move through the budget year, a rolling budget process will result in a budget that always stretches 12 months ahead. The rolling process can take place either each month or each quarter.

A rolling budget approach tends to be more accurate as it does not just extend the period of the existing budget it also re-examines the nearest periods. It helps to reduce uncertainty and is vital when the environment is changing rapidly or, as in this case, where there is a lot of uncertainty surrounding a new product or service. As more attention is given to the nearest periods this should reduce the uncertainty caused by a longer range forecast and more accurately reflect the prevailing conditions. With a rolling approach, our budgets for sales revenue and costs of the new service would therefore be more accurate, reflecting the latest expectations. As a result, budgets would be more realistic, achievable and therefore more motivating.

A rolling budget process does not necessarily result in changes in the budgets each month or quarter, but it does offer an opportunity for more frequent reviews. A rolling approach would offer additional opportunities to review the budget and

ensure that we focus on the prospects further ahead. This will be particularly important for our business which is subject to seasonal fluctuations. This approach will also allow the business to react more quickly to a change in the environment than the current annual process allows.

Rolling budgets are particularly suited to planning cash flow which needs to be reviewed regularly. The new fleet management service is likely to have an impact on our cash flow and it is therefore important for us to focus on improved cash management. With regular cash budgeting we can arrange to reinvest any surplus funds to make further gains. A rolling approach to cash budgeting will also offer better visibility of cash flow and help to identify deficits. We can consequently either ensure appropriate financing arrangements are put in place to cover the shortage or adjust the timing of planned expenditure to avoid the cash shortage arising.

There are numerous benefits for Acellerate from using rolling budgets, in particular improving the accuracy of future cash budgets and better reflection of the changing environment and sales expectations. Rolling budgets however can be a significant amount of work. This additional work is in preparing, checking and also in communicating the revised plans. In addition, there is limited benefit in planning too far ahead as accuracy may be questionable. It would be important to ensure that additional work is limited to areas where there are clear benefits. It may be more appropriate to implement rolling budgets for only some budgets, such as the budgets for new products or services where there is more uncertainty. It may also be more appropriate to review some budgets quarterly rather than monthly.

SECTION 2

Factoring

Advantages of factoring

A major benefit of factoring is that we would avoid the cost of either increasing the staff in our sales ledger and credit control functions or investing in robot process automation software.

If we decide to use non-recourse factoring, it means that the factor will bear the cost of any irrecoverable debts. This is effectively a form of insurance against non-payment by our customers. We will consequently not incur any losses in respect of non-payment of debts. We would however need to weigh up the additional cost of non-recourse factoring with the estimated level of irrecoverable receivables if recourse factoring was used.

In addition, the arrangement means that we will receive a large percentage of the invoice value immediately. This means that we will receive cash more quickly than we would without the factoring arrangement, enabling us to invest the additional cash to make a return.

Another benefit is that the factor will be an expert in credit control and will be efficient at sending out invoices and managing the receivables ledger.

Disadvantages of factoring

The biggest disadvantage associated with the factoring arrangement is its cost. Under a factoring agreement, we would normally be charged an administration fee and interest in respect of the advance payment. The interest rate is likely to be higher than the rate that we would pay on, for example, a bank loan. Factoring is generally accepted to be an expensive form of finance.

Another disadvantage of non-recourse factoring is that we lose control of our receivables ledger. The factor will decide whether to offer credit to new customers and will apply its own policies regarding debt collection. It is likely that a factor will be reasonably aggressive when chasing for payment of outstanding debts, which may not go down well with our customers. It will also mean that our customers will know that we are using a factor because correspondence will be from the factor. This could have an impact on our reputation within the market, as the fact we are using a factor could be seen as a sign that we have cash flow issues. Similarly, the relationship with our customers could be damaged if they do not continue to have direct contact with us regarding payment.

A major disadvantage of factoring is that it would result in staff redundancies. We may be able to offer alternative positions to some staff but it is likely that at least some of the existing staff will be made redundant. There will be costs involved with re-assigning staff and redundancy payments. There may also be an impact on our reputation if we are seen to be making staff redundant.

It would also be difficult for us to re-establish a sales ledger and credit control function should we decide at a later date that we don't want to continue with the factoring arrangement.

Robotic process automation versus outsourcing

Relevant costs of in-house

The relevant costs of keeping the transaction processing work in-house are the future incremental cash flows which arise as a direct consequence of the decision.

The cost of salaries and benefits are relevant as these are incremental costs. The lease cost of the automation software and equipment is a relevant cost as it is a future cash flow. It is assumed that there will be no penalty if the lease is terminated after the first year. The cost of the additional IT support is not relevant since the support will be provided by existing staff who will be paid whether the internal work is kept in-house or outsourced.

Relevant cost of outsourcing

The relevant costs of outsourcing are the future incremental cash flows which arise as a result of the decision to outsource.

The contract tender price will be a relevant cost. The cost of administration of the service agreement is not relevant since it will be carried out by existing staff who will be paid whether we decide to outsource or keep the service in-house. The redundancy cost is a relevant cost however this will only apply to the first year.

In order to decide which option to choose, we need to compare the relevant cost of outsourcing with the relevant cost of keeping the department in-house. The option with the lowest relevant costs would then be chosen.

Other factors

- The transaction processing work is a fundamental part of ensuring that the company is able to produce accurate financial statements. As such, it may be considered a core activity and therefore it may not be appropriate to outsource this work. Robot process automation of the work may be a more appropriate alternative.
- Outsourcing impacts the control that the company has over the security and privacy of data. We would need to ensure that the outsourcing company chosen has sufficient controls in place to protect the security and privacy of our customers' data.

SECTION 3

Expenditure on the new fleet management service

Capital and revenue expenditure

Capital expenditure is expenditure that is likely to increase the future earning capability of the business. It includes expenditure to acquire non-current assets for use in the business not for resale. This includes the purchase price of the asset and any directly attributable costs incurred to bring the asset to its location and condition to be capable of operating for its intended use. It also includes expenditure on existing non-current assets aimed at increasing their earning capability. Capital expenditure is long term in nature (greater than 1 year) as the business intends to receive the benefits of the expenditure over a long period of time.

Revenue expenditure is expenditure which is incurred to maintain the current earning capability of the business. It includes expenditure on current assets. It also includes expenditure on running the business (for example, administration costs) and expenditure on maintaining the earning capability of non-current assets, for example, repairs and renewals.

Treatment of items in the schedule

From Table 1, the building work on the maintenance centres is essential to enable us to carry out the maintenance and repairs on the fleet cars. It will generate future economic benefits in the form of profit and as the expenditure is cash related, it can be reliably measured. The amount to be capitalised will be E$108,000 as the planning, design and architect fees are directly related to the building work and are necessary to enable the building work and therefore can also be capitalised.

The machinery is to be used for the maintenance of the cars under the fleet management service and we intend to keep it for more than 1 year. Therefore, the machinery purchase cost meets the criteria to be capitalised as an asset. The delivery cost of the machinery can also be capitalised as it is necessary to bring the asset to its location and condition to be capable of operating for its intended use. Therefore, the total cost of E$40,000 can be capitalised.

The painting and decorating work is less straightforward. Normally, where there has been an improvement, the whole of the cost is treated as capital expenditure. This will include the cost of redecoration after the work has been completed or the cost of making good any damage to existing decoration. In this case therefore, the painting and decorating cost which relates to the maintenance centres where building work has been carried out will be capitalised. In contrast, however, the cost of painting and decorating the other maintenance centres will be treated as repairs and maintenance expenditure, and therefore revenue expenditure, since there has been no improvement.

The training costs are not being incurred in order to get the asset ready for its intended use. The training relates to the company's policies and processes and therefore does not relate to the machinery. Also, the trained staff are free to leave the business at any time, this means that these costs do not meet the definition of an asset in terms of being able to control the economic benefits expected to arise. These costs will therefore need to be expensed as revenue expenditure.

Break-even analysis

Explanation of the chart

The line on the chart shows the profit that will be earned for different car numbers. The slope of the line represents the weighted average contribution to sales ratio assuming that the expected mix of car types and elements of the service remains constant.

The point at which the line intercepts the Y axis is the total fixed costs which, in this case, are approximately E$960,000.

The point where the line crosses the 0 line on the Y axis is the break-even point. Based on the weighted average contribution to sales ratio, we can see that in order to break even we would need to provide fleet management services for approximately 340 cars.

The chart gives us an idea of the sales level required to cover our fixed costs. By knowing the break-even position, we can determine the margin of safety that we have from the actual or budgeted figures. The margin of safety is the amount by which the actual or budgeted volume can fall before a loss is made. In this case however, the estimated number of cars is 325 which is below the break-even level of approximately 340 cars and therefore there is no margin of safety and we will make a loss if the estimated figures are correct.

Why the data used to construct the profit/volume chart will limit its usefulness

The chart has been constructed on the basis of a constant sales mix of car type and elements of the service but it is unlikely that we will sell the service at a constant sales mix. The average selling price and the costs will differ between different car types and elements of the service. The weighted average contribution line assumes that the service will be sold in a certain mix. However, there is a risk that the weighted average contribution to sales ratio will be lower and therefore the break-even point will be higher, if we sell in a different mix.

The figures used are estimates only and assume a linear relationship over the whole range of the service. However, this is a new market for us and the estimates may be over pessimistic or optimistic. Whilst the figures suggest that we will incur a loss in the first year, the difference between the break-even volume and the estimated volume is not significant.

The analysis also assumes that we can define costs as fixed or variable. It has been assumed that variable costs vary with the number of cars however it is likely that some costs will vary with the number of businesses that use the service rather than the number of cars. In reality all costs are variable in the long term. Some of the fixed costs have also been determined on an arbitrary basis. For example, we have shared the general fixed overhead costs between the car rental business and the fleet management business based on the number of cars.

Cost structure

The proportion of costs which are fixed is referred to as operational gearing. A company or operation with high operational gearing has a large proportion of fixed costs relative to total costs and a high contribution to sales ratio.

High operational gearing will result in a higher break-even point compared to low operational gearing. More contribution will have to be earned in order to cover the high levels of fixed costs. Due to the high contribution to sales ratio, however, small changes in revenue will have a large impact on profit. Therefore, as sales increase beyond the break-even point, profits will increase at a relatively high rate.

High operational gearing however is risky if sales fall, for example, during a recession. As a consequence of the high operational gearing there will be higher fixed costs to cover before making a profit.

SECTION 4

Variance analysis

Why the variances differ and why ABC variances provide more useful information

The traditional absorption costing approach is based on the assumption that the overhead costs are fixed. A fixed overhead absorption rate, based on the total budgeted costs divided by the budgeted number of cars, is used to absorb the overheads. Whereas, the activity based costing (ABC) approach is based on the assumption that all the overheads are variable and specifically vary with the cost driver. In this case, the cost driver is the number of invoices, not the number of cars.

The ABC variance analysis allows us to calculate the impact on cost of carrying out more or less of the activity which drives the costs, in this case, the processing of purchase invoices. It allows us to calculate how efficient we have been in carrying out the activity. In absorption costing, as the number of cars is not driving the cost, we are unable to assess the impact of changing activity in this way.

ABC cost variances

The total ABC cost variance indicates what we should have spent compared to what we actually spent but rather than being based on the actual number of cars at the standard rate, it is based on the standard number of invoices for the actual number of cars at the standard rate. It is the activity of processing invoices that drives the cost. The total cost variance is the same for both traditional absorption costing and ABC but the analysis of the figure into its component parts provides us with more useful information.

The efficiency variance reports the cost impact of undertaking more or less of the activity than standard. In this case we have a favourable variance which means that the invoice processing has been more efficient. We have been able to reduce the number of cost drivers. So rather than processing nine invoices per car we have processed eight (2,000 / 250) invoices per car. This is a favourable variance as by processing fewer invoices we have reduced costs.

The expenditure variance reports the cost impact of paying more or less than standard for the actual activities undertaken. It is the difference between the amount it should have cost to process the actual number of invoices compared to the amount it did cost. This is also a favourable variance as it cost us less to process the actual number of invoices than it should have done.

Participation by the Area Sales Managers in future budget and target setting

Allowing the Area Sales Managers to participate in the setting of budget and KPI targets will have the following benefits:

- The managers are the people working on the frontline and over the past 3 months will have built up a good understanding of the client base around their individual locations. Therefore, participation should lead to more realistic budgets and targets which are tailored to the market and the environment in which they operate.
- Participation in the budget and target setting process is more likely to motivate the managers to strive towards meeting the targets and taking responsibility for achieving them. Managers are more likely to buy into the targets if they have been involved in setting them. Targets which are imposed on managers are likely to demotivate them and they may blame the non-achievement of targets on the target setting process.
- This approach will be consistent with how we set budgets for the rest of the business.

There are also however some potential drawbacks which are as follows:

- The time required to create the budget will be extended and we may need to provide training to the Area Sales Managers to enable them to complete the task. Therefore, there will be cost implications, although once trained they will be able to complete it in future years without additional training.
- There might be a tendency for the Area Sales Managers to build slack into the budget or to set low KPI targets to ensure that the targets can be achieved. This may particularly be evident if pay and rewards are based on the achievement of the targets. Clearly, this will not be in the interest of the business as a whole.

Key performance indicators (KPIs)

Percentage of cars serviced on-time:

This KPI would be calculated as: Number of cars serviced / number of cars scheduled for service

This is an appropriate KPI since it is important that the cars are properly maintained to avoid breakdowns, accidents or potential damage to the cars. The resale value of the car and the manufacturer's warranty for the car may be impacted if the car has not been regularly maintained.

Kilometres travelled per litre of fuel:

This KPI would be calculated as: kilometres travelled / number of litres of fuel.

This is an appropriate KPI since our business customers will want to keep fuel costs to a minimum. The fuel consumption of each type of car can be compared and will allow companies to make decisions about the type of cars they want to use in future. It is also an important environmental measure as most companies will want to reduce their carbon footprint.

Percentage of cars requiring accident repair:

This KPI would be calculated as number of accident repairs / number of cars.

This is an appropriate KPI since there is a significant cost involved where cars are involved in an accident. These include the cost of repairs and the cost of hiring replacement cars. Whilst some of the costs may be covered by insurance, an accident is likely to result in an increase in the insurance premium for the car and may also reduce the resale value of the car.

OPERATIONAL CASE STUDY
MAY & AUGUST 2021
EXAM ANSWERS

Variant 2

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CIMA will not accept challenges to these answers on the basis of academic judgement.

SECTION 1

Need for a method to charge out the fleet operating costs and the drawbacks of using actual rental income for this purpose

For each of the brands there will be a number of costs that can be traced directly to the brand. For example, the fleet operating costs of the Prestige range of rental cars can be directly attributed to the Acellerate brand as these cars are used solely by that brand. Similarly, the operating costs of the cars purchased specifically for the Vetura brand. The other ranges of cars are available to both brands and therefore some method will need to be established to share the operating costs for these ranges between the two brands. A number of different methods could be used, for example, car rental days, rental income or number of rentals.

The use of rental income to share the cost of operating the cars between the two brands, as suggested by Jack Durand, is fairly arbitrary. It assumes that the costs of operating the cars vary with the rental income earned by each brand. If rental income is used, the Acellerate brand will suffer a relatively high proportion of the costs for the same volume of rentals as the rentals fees are higher for the Acellerate brand. However, many of the car operating costs will arise due to the number of cars or the number of rentals. Using the maintenance costs element of the fleet operating costs as an example, some of the maintenance costs will arise depending on the number of times the car is rented because we carry out a maintenance check every time a car is returned after a rental.

The current costing system produces a cost per car based on assumptions relating to utilisation, number of rentals and kilometres travelled, and therefore acknowledges the impact of each of these factors. This figure could be used to calculate a cost per day, as currently used to charge cars to sales locations, and this could be used to charge cars to brands.

Charging out sales location costs

The cost of any sales locations which are used solely by an individual brand will be direct costs for that brand. However, many of the sales location costs will be indirect and therefore, as discussed, a method will need to be established to share these costs between the brands.

In terms of the sales location costs, a simple approach would be to take the total costs of the sales locations and charge them out to the brands based on the number of car rentals for each brand. The main element of the sales location costs will be the staff costs and these will be driven by the number of customers and the time taken by staff servicing each customer.

However, if customer needs differ depending on the brand we could consider using an ABC approach. An ABC approach looks in more detail at the different activities undertaken and determines what drives the cost of the activities. The main activities we carry out in the sales location are customer related and will depend whether the customer has already booked the car rental online. They will include: checking sales reservation documents; selling ancillary services and taking payments from customers. We would then determine the cost driver of the activities and charge the costs of the sales locations to the brands based on the usage of the cost drivers.

We would need however to determine whether the cost of operating the ABC system would be outweighed by the benefits of the increased accuracy compared to the more simplistic method suggested.

What-if analysis: Effects of changes to the variables on the budget for Acellerate

What-if analysis involves revising the budget on the basis of a series of varied assumptions. One or more assumptions can be changed at a time to determine the impact on the budgeted profit.

From the schedule we can see that a decrease in the number of cars will reduce the fleet contribution by 10%. Effectively, we have decreased the number of rental days by 10%. A reduction in rental days of 10% will reduce total revenue and commission by 10% but will also reduce total variable costs by the same proportion leading to the 10% reduction in contribution shown in the schedule. However, the impact on operating profit is significantly higher at 13.1% as the fixed costs will remain the same and therefore, because the rental days have decreased, the fixed cost per rental day will increase.

We can also see that a decrease in rental income per car per day has a significantly greater effect on contribution than a decrease in the number of rental days even though both will have the same effect on total revenue and commission. Changing the rental days results in a reduction in contribution of

10% whilst changing the rental income per car per day results in a reduction in contribution of 16.7%. This is because a change in volume (rental days) will affect both total revenue and commission (which will decrease) and total variable costs (which will also decrease) however a change in the rental income per day will affect total revenue and commission but total variable costs will remain the same. If rental income per car day is decreased by 10% this will also have the biggest effect on operating profit, resulting in a reduction of 21.9%. This is because a 10% reduction in selling price will lead to a reduction in contribution margin because revenue and commission will fall without any corresponding fall in either variable costs or fixed costs which will remain the same.

Increasing variable operating cost per car by 10% also reduces contribution, but not to the same extent as a 10% decrease in rental income or a 10% reduction in number of cars. This is because the increase in variable costs is smaller than the decrease in revenue in absolute terms when rental income falls.

Risk and benefits of having high fixed costs in our cost structure

The proportion of costs which are fixed is referred to as operational gearing. A company with high operational gearing has a relatively high proportion of fixed costs in its cost structure and a relatively low proportion of variable costs. The company will consequently have a relatively high contribution to sales ratio.

Acellerate has a relatively high level of fixed cost, in other words it has high operational gearing. A company with high operational gearing is considered to be high risk since a relatively low change in volume will result in a relatively high change in profit, as is clearly demonstrated by the schedule. Companies with high operational gearing are reliant on scale since the higher the volumes the lower the fixed cost per unit, or in our case, per rental day.

High operational gearing will result in a higher break-even point compared to low operational gearing. More contribution will have to be earned in order to cover the high level of fixed costs. However, once the fixed costs are covered we will start to achieve contribution at a relatively fast rate since our contribution per rental day is high as our variable costs per rental day are low.

High operational gearing however is risky if sales fall, for example, during a recession. As a consequence of the high operational gearing there will be higher fixed costs to cover before making a profit.

SECTION 2

Selecting a marketing package

Explanation of the figures in Table 1

The expected value has been calculated for each package and represents the weighted average of all the possible outcomes weighted by their probability.

The standard deviation for each package is a measure of the variations of the outcomes from the expected value. It is calculated as the square root of the sum of the squared deviations of each outcome from the expected value taking account of the associated probabilities. The standard deviation is therefore an indication of risk.

The coefficient of variation for each package is its standard deviation divided by its expected value. The co-efficient of variation allows the risk of each package to be compared because this is a measure of risk for each E$1 of expected return.

How the decision maker's risk attitude will affect the package chosen

If we were a risk neutral decision maker we would make the decision based on expected value and choose Package B as this has the highest expected value of additional contribution of E$143,880.

If we were to take a risk seeking approach to the decision, we would be interested in the highest possible outcome, no matter how small the likelihood that it would occur. Package A gives us the highest possible outcome of E$189,200.

A risk averse decision maker would choose the package which, given the same level of return, has the lowest level of risk. Such a decision maker would choose the package with the lowest coefficient of variation because this is a measure of risk for each E$1 of expected return. A risk averse decision maker would therefore choose Package C which has a co-efficient of variation of 18.7%.

Zero based budgeting (ZBB) for marketing expenditure

The first stage in implementing a ZBB system is to identify the activities. The marketing department's main activities are market research; promoting and advertising our brands; raising brand awareness and determining pricing strategies. The budget will therefore be split by these activities. So, for example, staff salaries will be determined by activity. The advertising costs will also be determined for each activity rather than by cost type. The marketing manager will need to consider whether each activity is necessary, how much of each activity is required and how well each activity should be done, the alternative ways of carrying out each activity and finally how much each alternative would cost.

For each of the activities we would need to develop decision packages. A decision package is essentially an analysis and costing of different ways in which the objectives can be achieved. In terms of market research, the objective may be to provide market intelligence to management to support decisions regarding the choice of new locations and new types of cars, projected car rental days and the impact of different marketing methods on the growth of rental days. Decision packages can either be mutually exclusive or incremental. Mutually exclusive decision packages might be either to employ our own staff or to set up a contract with an external party to run this aspect of the marketing function. Both of these would potentially achieve the objective and each will have different costs associated with it. These mutually exclusive decision packages could be further broken down into incremental decision packages. For example, the decision package to employ our own staff, could be split into a base package and then one or more incremental packages. The base package could be to employ one person to cover all of our market research in relation to new locations and types of cars and another person to provide market research on projected car rental days and the impact of marketing expenditure on rental days. Incremental packages could relate to the investment in market research reports and data analytics software.

The third stage, once all the decision packages are identified, is to review and rank each one on a cost-benefit basis. This can be an extremely difficult process particularly in relation to marketing expenditure; predicting the potential benefits of advertising or promotions requires an in-depth knowledge of the market and relies on the accuracy of the estimates made. Once the decision packages have been ranked, budget resources should then be allocated on this basis.

An aggressive approach to working capital management

A conservative approach to working capital management attempts to reduce risks by holding high levels of cash, inventory and receivables. This produces a long operating cycle. Risks such as stock-outs or liquidity problems are low but costs as a result are increased. An aggressive approach attempts to reduce costs by holding the lowest levels of cash, inventory and receivables as possible. This produces a short operating cycle. This policy carries the greatest risk of liquidity problems but also the greatest returns.

A more aggressive approach to working capital management would result in lower levels of inventory and therefore lower financing costs which would result in better profitability. However, there would be more potential for inventory shortages and liquidity problems. The main elements of our inventory are consumables in the maintenance centres. Using a more aggressive approach would mean holding a lower level of consumables. This would reduce our ability to meet a sudden increase in demand or avoid inventory shortages. It could also impact the amount of time the cars spend in maintenance which will reduce the fleet utilisation rate and the rental income earned. As there is considerable uncertainty around the level of demand for the new brand it would seem that a conservative approach would be more appropriate.

In terms of our receivables, a more aggressive approach would mean shortening credit terms and chasing outstanding receivables more diligently. A major proportion of our receivables however are car manufacturers and dealers. It may prove difficult trying to shorten the credit terms with this type of customer which has relatively high power. It would however be possible to take a more aggressive approach to credit control.

In terms of payables, an aggressive approach would mean higher levels of payables and potentially extending credit past agreed terms. The risk of using an aggressive approach is that this could result in damage to relationships with suppliers or having supplies stopped. In our case, to adopt an aggressive approach would seem particularly risky since we are reliant on our suppliers (car manufacturers and dealers) to provide us with the cars we need for our rental fleet and consumable supplies for the maintenance centres. Our suppliers are unlikely to continue supplying us if we are not paying on time. There is also an ethical issue with extending credit past agreed terms and it could harm our reputation if we take this type of action.

It would seem therefore that in the current situation an aggressive approach would be too risky and we would therefore be better to stick to our current conservative approach.

SECTION 3

Relevant cost analysis of extending the holding period of cars

Relevant and irrelevant costs under each option

The relevant costs are the future incremental cash flows over the next 12 months period for each of the options.

Option 1

The purchase costs and the buying costs are sunk costs and are therefore not relevant.

The operating costs incurred in the initial 12 months period are also sunk costs and therefore not relevant. The relevant cost is the operating costs of E$7,000 incurred in the extended period as this is the future cash flow.

Depreciation costs are not relevant as these are not a cash flow.

The disposal value at the end of the extended period of E$16,250 is a future cash inflow however this is offset by the opportunity cost of E$18,750 of being unable to dispose of the car at the end of the initial period.

The selling costs at the end of the extended period of E$420 is relevant however this is offset by avoiding incurring the selling cost of E$400 at the end of the initial period. Therefore, the relevant cost is E$20.

Option 2

Under this option all the costs and benefits are relevant with the exception of the depreciation charge which is not a cash flow. This is because, with the expection of depreciation, all of these costs will be incurred in the future and are incremental.

Other factors to consider before making a final decision

There are a number of other factors to consider before deciding whether to hold the cars for 12 months or 2 years. Two such factors are as follows:

- What impact will holding the cars for 2 years have on our customers? Customers tend to expect a relatively new car when renting. Is a 2-year-old car too old?
- Are there other hidden costs in holding the car for a 2-year period. For example, will it take longer and be more difficult to resell the older cars at the end of the holding period.

IFRS 16 / IAS 16

Lease liability

Under *IFRS 16 Leases*, the lease liability is initially measured at the present value of the lease payments that have not yet been paid. This includes the fixed payments over the lease term and any other amounts expected to be payable. The discount rate used to calculate the present value should be the rate implicit in the lease or if this is not available, the entity's incremental borrowing rate. In this case, therefore, it will initially be measured at the present value of the future lease payments of E$640,686.

At 31 December 2021, the lease liability will be shown in the statement of financial position. The total value of the liability will be the initial amount of E$640,686 plus 3 months interest for October to December 2021. The value of the liability will be split into a current liability, the amount of the liability that is related to the next 12 months, and a non-current liability.

In subsequent years, the carrying amount of the lease liability is increased by the interest charge. Interest is also recorded in the statement of profit or loss. The carrying amount of the lease liability is reduced by the lease payment each year of E$359,290.

The right-of-use asset

Under *IFRS 16 Leases*, the right-of-use asset is initially recognised at cost. The initial cost of the right-of-use asset comprises: the amount of the initial measurement of the lease liability; lease payments made at or before the commencement date; any initial direct costs and the estimated costs of removing or dismantling the asset.

The right-of-use asset will therefore be initially recorded at the present value of the lease payments of E$640,686 plus the lease payment made in advance of E$359,290 plus the lease arrangement fee of E$40,000.

In the 31 December 2021 financial statements, the value of the right of use asset will be measured at its initial cost less accumulated depreciation and impairment losses. In this case, as ownership does not transfer to the lessee (Acellerate), depreciation will be charged to the statement of profit or loss over the lease term of 2 years. The depreciation charge for the first year will be for 3 months from October to December 2021. In the following year the depreciation charge will be for a full year. The depreciation charge will be deducted from the carrying amount of the right-of-use asset.

Non-current asset in statement of financial position

If the cars were purchased they would be recorded in the statement of financial position at cost of E$3,000,000, which compares to the right-of-use asset which will be recorded at just over E$1,000,000. Depreciation however will be charged

to the statement of profit or loss each year based on cost less the residual value of E$2,000,000, so based on approximately the same amount as the right-of-use asset. Depreciation would be calculated over the period that the assets are expected to be held therefore in this case up to 24 months which is the same period as for the right-of-use asset. As for the right-of-use asset, the depreciation charge for the first year will be for 3 months and the non-current asset will be recorded at its carrying amount less the accumulated depreciation. In the following year the depreciation charge will be for a full year. At the end of the 2 year period, the value of the non-current asset will represent its residual value of E$2,000,000.

SECTION 4

Variance analysis

Rental income price variance

The rental income price variance indicates the rental income received for the actual number of rental days for the Vetura brand compared to rental income that we would have expected to receive for that number of rental days. It is calculated as the difference between the actual fee per day and the standard fee per day multiplied by the actual rental days.

The rental income price variance is adverse for the Small and Medium range of cars which means that the rental income received per day for these types of car was lower than budget. The adverse rental income price variance is at least partly due to the decision to offer discounts through the hotel chain and in the low-cost airline flight magazine as these were not reflected in the original standard. The price variance for the Large/SUV cars however is favourable. The discount offered through the hotel chain was only for Small and Medium cars therefore would have had no impact on the Large/SUV range. Whilst the discount in the in-flight magazine was for all cars, it would probably have had less impact on the Large/SUV range. A higher proportion of travellers using a low cost airline will be leisure customers and more likely to rent from the Small or Medium range of cars. The budgeted average rental income per day is also based on an expected mix of cars within that range. It is possible that the contract with the large company has resulted in a higher proportion of cars at the higher end of this range being rented.

Rental income mix contribution variance

The rental income mix contribution variance indicates the impact on contribution of the actual mix of car types being different than the standard budgeted mix. It is calculated as the difference between the actual rental days and the actual rental days at the budgeted mix multiplied by the standard contribution. The total rental income mix contribution variance is adverse which suggests that we have rented proportionately more cars which earn a lower contribution.

The variance for the Small cars and Large/SUV cars is favourable which means that we have rented proportionately more of these ranges of cars than the budgeted mix. Whereas, the mix variance for the Medium range of cars is adverse, meaning we have rented proportionately less of these cars. The change in the mix will be partly due to the discounts offered which seem to have resulted in a higher proportion of Small car rentals and the contract with the large company which may explain the higher proportion of Large/SUV car rentals. All ranges of cars were probably equally impacted by the longer turnaround in the maintenance centres. There was however a specific lack of availability of Medium cars which may at least partly explain why there was a lower proportion of rental days for the Medium range of cars. As this is a new brand and aimed at a different market segment, it is possible that the budgeted mix was inaccurate.

Rental income quantity contribution variance

The rental income quantity variance is based on the total number of rental days at the budgeted mix. It is calculated as the difference between the budget quantity and the actual quantity at the budgeted mix multiplied by the standard contribution.

The total number of rental days is very slightly below budget. The total rental days will have been favourably affected by the contract with the large company, the link with the hotel chain and the advertising campaign which we ran in the in-flight magazine. It will however have been adversely affected by the lack of availability of Medium cars and the longer turnaround within the maintenance centres. However, as stated above, this is a new brand for us and it is also possible that our budget estimates were inaccurate.

Key performance indicators (KPIs)

Appropriateness of the measures

The car utilisation rate is one of the most important measures for the company. We have a high level of investment in our cars and it is important that these yield as high a return as possible. Therefore, the higher the percentage of available days that the cars are rented, the better the yield will be. We are given a utilisation rate for Acellerate overall, however it may be helpful if we produced separate rates for Acellerate only cars, Vetura only cars and shared cars.

The average rental period is an appropriate KPI since this will have an impact on both the rental income per day and the operating costs for each rental. The longer the rental period, the lower the rental income per day will be since our pricing strategy is based on a progressively lower fee for each additional day in the rental period. However, the longer the rental period the lower the operating cost per day will be, as many cost types are incurred only once for each rental period. For example, the cost of maintenance checks and the cost of cleaning the cars are incurred at the end of each rental period.

The number of maintenance hours is appropriate since maintenance costs contribute significantly to our car operating cost. It is likely that the more hours that are spent in the maintenance centre the higher the costs will be. Also, when the car is in the maintenance centre it is not earning income and therefore it is important that there is a quick turnaround for the cars in the maintenance centre.

Reasons for performance

The target for the utilisation rate is for the company as a whole and not just the Vetura brand as the cars are available to both brands. The target for the utilisation rate has been exceeded which is good news for us. This would appear to be mainly down to the Acellerate brand as we can see from the variance analysis that the rental days for the Vetura brand was slightly below budget. This

may be a result of the estimate we made in revising the Acellerate budget. It may be that the new Vetura brand did not have as much negative impact on the Acellerate brand as we estimated.

The average rental period is longer than target which may be as a result of the mix of customers using the Vetura brand. It is possible that we have rented a higher percentage of cars to leisure customer who tend to rent for longer periods. Alternatively, we may have offered discounts on our prices or the lower prices offered for longer periods proved more attractive than we anticipated.

The number of maintenance hours per rental is higher than target. This is concerning since as discussed above, the longer the cars are in the maintenance centres the higher the costs will be and also the cars are not available for rental during that period. Jack Durand has said that the new Vetura brand has put pressure on the maintenance centres and therefore the figure is not unexpected. It is possible that maintenance staff are struggling to deal with the volume of cars and the pressure is resulting in them become less efficient. It is also likely that cars are having to wait for longer periods before being dealt with by the maintenance staff. The higher than target maintenance hours may also reflect the fact that more repairs are required to Vetura rental cars than we expected based on our experience with Acellerate rentals.

OPERATIONAL CASE STUDY
MAY & AUGUST 2021
EXAM ANSWERS

Variant 3

These answers have been provided by CIMA for information purposes only. The answers created are indicative of a response that could be given by a good candidate. They are not to be considered exhaustive, and other appropriate relevant responses would receive credit.

CIMA will not accept challenges to these answers on the basis of academic judgement.

SECTION 1

Time series analysis

Explanation of the time series information

The trend line: The regression trend line represents the trend in the number of car subscription contracts entered into over the past 3 years. The trend is the average position over time with seasonal variations smoothed out.

The first number in the equation represents the base line figure at the start of the time series. The second number represents the increase or decrease in the number of car subscription contracts entered into for each successive quarter. In this case, the trend is for the number of car subscription contracts entered into each quarter to increase by 3,500 in each successive quarter.

The data indicates that based on the last 3 years of data, there is an upward trend in the number of car subscription contracts. This reflects recent industry reports which suggest that there is an increase in demand for flexibility in car ownership.

Seasonality: The second part of the analysis looks at variations around the trend that are caused by seasonal factors. We can see that in the period January to March the number of car subscription contracts entered into was 2.4% lower than the trend whilst in April to June the number was 7.4% higher than the trend. It is clear that the business is not particularly seasonal. It does however suggest that people are more likely to consider entering into a subscription contract in the summer months rather than the winter months.

Forecasting the lease income for July to December 2021

The time series information will allow us to predict what the future lease income will be for the budget period July to December 2021. We can use the trend information to project the number of car subscription contracts for the industry for the final two quarters of 2021. For example, July to September 2021 will be quarter 15 and therefore the projected volume of car subscription contracts entered into in that period will be (4,000 + 3,500(15)). We can then estimate our expected market share of the industry to establish the expected number of car subscription contracts. We will also need to apply the seasonal variations of -1.2% for July to September and -3.8% for October to December. Once we have established the number of car subscription contracts we can break this down by make and model of car and multiply by the lease fee. We would then need to project the expected holding period of the cars that are subject to the contracts.

Limitations of using this approach

Linear regression only measures the relationship between two variables and assumes that the relationship between the variables is linear. In reality, there will be a number of variables that will determine the demand for this type of service, for example, lifestyle changes or trends. Indeed, this market has evolved as a result of a change in consumers' approach to car ownership.

We would also need to consider whether the past is a good indicator of the future. The market for this type of arrangement is growing at a significantly high rate and we would need to consider whether the past growth rate is a good indicator of the future growth rate. The recession in 2020 will have had a considerable impact on the number of people electing to change their cars and therefore considering using a car subscription service.

Costing of the digital app

Direct and indirect costs

Direct costs are costs which can be traced directly to the cost object, that is the product, service, customer, or in this case, the app, that we are trying to cost. Indirect costs are costs which cannot be directly traced to a single cost object.

A cost may sometimes be a direct cost and sometimes an indirect cost depending on the cost object we are trying to cost. For example, the salary of an employee in the IT function will be a direct cost of that function. However, if the cost object is an individual app or another IT service, it will be an indirect cost as it cannot be directly traced to one individual app or service.

Direct costs of the app will normally consist of the development cost and possibly some of the ongoing maintenance costs. The rest of the costs will be indirect.

Difficulties in determining the cost per unit of the app

Direct costs

The direct costs of the app consist of the development costs and the functional services costs. The development costs will be incurred up-front whereas the functional services costs will be ongoing costs.

The development cost per unit will be the total cost capitalised divided by the estimated sales volume over the lifetime of the app. Determining the sales volume will present a number of difficulties. We will need to have a good knowledge of the market and an understanding of how future technologies could potentially affect the app. Changes in technology and our responses to these changes will also impact the lifespan of the app.

The functional service costs will be a mixture of fixed and variable costs. We will need to establish the amount of the variable cost per user and the amount and frequency of the fixed costs and divide these by the estimated sales volume for the year in order to calculate the cost per unit.

Indirect costs

The indirect costs present other difficulties as some of the ongoing maintenance costs will be incurred on features or updates that are common to all apps and an appropriate method will need to be determined to share the costs between the apps. For example, the infrastructure costs will be mainly fixed and will be shared by our other IT services. A mechanism for sharing these costs between the different services will need to be established. Similarly, whilst most of the design and development costs will be specific to an individual app there may be occasions when some of the elements are shareable with other apps and a method of allocating these costs to the individual apps will be required. Once the total indirect costs have been established, we then need to divide these by the estimated annual sales volume in the same way as for the functional service costs.

The administrative services and technical support services will be incurred in-house. This will require us to estimate the likelihood and extent of occurrence and the time involved in carrying out each task. For example, we will need to estimate how often we will need to carry out iOS and Android updates or updates to APIs. Once we have established the time involved in each of these tasks we can work out total staff costs which can be divided by the annual sales volume to establish a cost per unit.

SECTION 2

Linear programming graph

Explanation of the graph and the optimum resource allocation plan

The linear programming graph shows the current situation in terms of available resources. The X axis depicts the maximum number of Large/SUV cars requiring repairs and maintenance and the Y axis the maximum number of Prestige cars requiring repairs and maintenance.

We can determine the feasible region, which is the area within which all the possible combinations of output are contained, from the graph. We can see that the feasible region is the area to the left of the maximum number of our Large/SUV cars requiring repairs and maintenance and below the maximum number of Prestige cars. The constraint lines represent the maximum number of cars that can be managed in-house and form a boundary for the feasible region which will be to the left of these lines as, given the constraints, it is impossible to meet the requirement above the lines. The feasible region is therefore bounded by the two constraints for number of cars and the car hoist hours and diagnostic machine hour constraint.

The ISO-contribution line represents the contribution that can be earned from all the possible combinations of the Large/SUV cars and the Prestige cars. If this line is moved as far to the right as possible, whilst still remaining within the feasible region, it will indicate the maximum contribution that can be earned. The furthest point within this area is the point where the diagnostic machine hours constraint line and maximum number of Prestige cars intersect. This is the point that will maximise contribution. The optimum usage of the capacity can be read from the graph as approximately 2,400 units of X (the Large/SUV cars) and 1,200 units of Y (the Prestige cars).

Maximum amount to pay for additional resources

The maximum amount we should pay for additional resources is represented by the shadow price plus the normal price of the resource. Where there is slack, for example on car hoist hours, the shadow price is zero. Where the resource is a binding constraint, such as the diagnostic machine hours, we can calculate the shadow price as the additional contribution we will earn by changing the resource allocation due to having one more diagnostic machine hour available. The maximum to pay for diagnostic machine hours is the normal price plus the additional contribution earned by increasing the diagnostic machine hours by 1 hour. If we pay the maximum amount, the total contribution will be unchanged; we are neither better nor worse off. If we pay less than the maximum, the total contribution will increase. The shadow price is only valid for a limited range as it will change when other slack resources also become binding.

Evaluation of suppliers

All three suppliers have an operating cycle the same as the industry average. However, the components need to be looked at in more detail since the operating cycle is made up in different ways for each of the suppliers.

Supplier A's operating cycle is the same as the industry average however it has higher inventory days, receivable days and payable days. Inventory days, at 21 days, are higher than both the industry average and Supplier C, which may suggest that inventory is not well managed. Receivable days of 65 days are also relatively high compared to the other suppliers and again suggests that there may be mis-management. Supplier A is paying its suppliers before it is receiving payment from its customers. However, payable days, at 62 days are also high which may mean that Supplier A is not paying its suppliers on time or perhaps as a large company, it has been able to get longer credit terms from its own suppliers. The high receivable days could be beneficial to Acellerate as we could potentially negotiate relatively long credit terms. The high payable days however are more concerning since failure to pay its suppliers on time may result in difficulties with continuity of supplies. As we are expecting a quick turnaround of our rental cars this could be an issue.

Supplier B's inventory days seem out of line with the other suppliers and the industry average. This may be due to poor inventory management but it also may reflect the fact that it has a large contract with a car rental company. The car rental company may demand a quick turnaround for its cars therefore necessitating high inventory levels. This would obviously be of benefit to Acellerate as we are also expecting our cars to be turned around quickly. Supplier B's accounts receivables are more in line with the industry average despite the contract with the car rental company. However, as with Supplier A, its payable days are of some concern since failure to pay its suppliers on time may result in difficulties with continuity of supplies.

Supplier C appears to be employing an aggressive approach to working capital management. All three elements of the operating cycle are lower than the industry average. This is a risky strategy to employ particularly for a smaller company. It is possible that Supplier C, as a relatively new company, has short credit terms from its suppliers and as such needs to ensure that it receives payment from its customers as quickly as possible. Supplier C is unlikely to be suitable for us due to its low inventory and receivable days and the high potential for cash flow difficulties which will impact its ability to fulfil our contract.

Other factors

We need to consider the price offered by each of the suppliers but also the quality of the service that would be provided. It is important that the supplier chosen is reliable and is able to offer a quick turnaround of our cars. The time spent on repairs and maintenance is time that the cars are not earning revenue and therefore it is important that this time is kept to a minimum whilst still maintaining quality.

Supplier B currently has a contract with another car rental company which suggests that it is capable of dealing with this type of business. However, it is questionable whether it will have the capacity to deal with another car rental company. Also, it is possible that we may be seen as a lower priority to the company with which it has the existing contract.

SECTION 3

Decision criteria

Maximax

A decision maker that uses the maximax criterion is an optimist. They will choose the option which maximises the maximum pay-off available under each option. Because this decision is based on cost, this criterion will be to select the option which gives the lowest total cost for the increased capacity, in other words, the minimum of the minimum costs.

Therefore, under this criterion, we would choose Option 1 as this gives the lowest possible cost of E$700,000.

Maximin

A decision maker that uses the maximin criterion is a pessimist. They will choose the option which maximises the minimum pay-off available under each option. Again, because this decision is based on cost, this criterion will be to select the option which gives the lowest of the highest costs under each option, in other words, the minimum of the maximum costs.

The highest cost for each option is when demand is high. Therefore, under this criterion, we would choose Option 3 because this gives the lowest cost of E$980,000 when demand is high.

Minimax regret

A decision maker that uses the minimax regret criterion is often referred to as a “bad loser” because they are concerned about making the wrong decision. Regret (as shown in the regret matrix) represents the cost of getting the decision wrong. For example, if the demand level turns out to be medium, then the best option would have been to choose Option 2. If we had chosen Option 3, it would have cost E$40,000 more than if we had chosen Option 2.

Using this decision criterion, we want to minimise the maximum regret. The maximum regret if we choose Option 1 is E$20,000, if we choose Option 2 it is E$40,000 and if we choose a Option 3 it is E$80,000. We would therefore choose Option 1 as the additional cost of E$20,000 is the lowest of the maximum regrets for the three options.

Beyond budgeting

Characteristics of beyond budgeting

Under a beyond budgeting approach, rolling forecasts on a monthly or quarterly basis, are suggested as the main alternative to annual budgeting.

Instead of evaluating performance against budget targets these are replaced with relative, external performance measures which are based on a comparison of key performance indicators with competitors and similar units within the company.

Beyond budgeting supports decentralisation and employee empowerment. It also places greater emphasis on team-based rewards rather than individual rewards.

Benefits of adopting a beyond budgeting approach

One of the main problems with our current annual budgeting system is that it is rapidly out of date. We are operating under fast changing market conditions with changes to technology impacting on customer preferences. The use of rolling forecasts would provide more accurate information that reflects the latest estimates on customer demand based on trends and customer preferences. This would enable our managers to determine strategies that adapt to the fast changing market conditions.

The use of relative performance measures will shift the focus from beating other managers for resource allocation to beating the competition by creating a climate based on competitive success. For example, we could use relative performance measures to compare the performance of the managers and/or staff in different sales and maintenance locations across the company. The use of comparative measures will also ensure that our managers strive for continuous improvement rather than being content to meet budget targets.

Beyond budgeting will motivate our managers by giving clear responsibilities and challenges. Authority will be devolved to our operational managers who are closer to the action and so can react quickly. The managers will be empowered to deliver key ratios rather than to keep to strict budget limits. Our managers will have wider discretion in making decisions and can obtain resources without being dependent on resource allocation as part of the budget process. This will enable our managers to react quickly to seize any opportunities that arise as a result of the changing environment.

Also, by making rewards team-based, it will eliminate dysfunctional behaviour. The success of our company does not rely on one individual but in everyone working together to achieve the same goals. The success of the operation of each of the locations is not solely reliant on the manager but on all the staff. As part of the process we can establish customer-orientated teams and create information systems which provide fast and open information throughout the organisation.

Suggestions for key performance indicators (KPIs)

The following are suggested KPIs which we could use to help manage the car subscription service.

Percentage growth in number of cars in the service

This can initially be calculated on a month-to-month or a quarter-to-quarter basis by dividing the change in the number of cars in month 2 or quarter 2 compared to month 1 or quarter 1 by the number of cars in month 1 or quarter 1. This KPI is appropriate as most of our costs are fixed therefore it is important to grow the number of cars in order to obtain economies of scale. It will also enable us to target specific locations through promotions and by ensuring that feedback from existing customers is positive.

Percentage of customers continuing with the service at the end of the initial period

This can be calculated by dividing the number of customers continuing at the end of the initial period by the total number of customers reaching the end of the initial period. As well as ensuring we grow the number of cars through new customers, it is also important to retain existing customers. Existing customers are likely to be more profitable as the initial costs of setting up the service will not be incurred. This is also a proxy measure for customer satisfaction since a dissatisfied customer is unlikely to continue with the service once the initial period has expired.

Number of customer complaints

This is a measure of customer satisfaction and could be linked to the number of customers continuing with the car subscription service after the initial period. We would need to ensure that we had a system allowing us to determine the number of complaints. Complaints could be received via our website, using the new car subscription service app, by email or by telephone. Measuring the number of complaints will ensure managers take care to manage those areas of the business that can result in complaints such as delays in completion of insurance and other requirements or in providing repairs and maintenance. Furthermore, when presented with issues, managers and staff need to be careful to ensure that these are resolved to the customer's satisfaction wherever possible.

SECTION 4

Variance analysis

Lease income price variance

The lease income price variance indicates the lease income received for the actual number of cars under the car subscription service compared to the lease income that we would have expected to receive for that number of cars. The lease income price variance is adverse for all types of cars which means that the lease income received for each type of car that was under the car subscription service was lower than budget. This is due to the decision to offer discounted lease fees, in response to the competition from the global car rental company, as this was not reflected in the original standard.

Lease income mix contribution variance

The lease income mix contribution variance indicates the impact on contribution of the actual mix of car types being different than the standard budgeted mix. The total lease income mix contribution variance is favourable which suggests that we have leased proportionately more cars which earn a higher contribution.

The variance for Small cars is adverse which means that we have leased proportionately less Small cars than the budgeted mix. This may be, at least partly, due to the competition from the global car rental company. It is possible that reducing our fees by 10% was not sufficient to ensure that we reached our budgeted proportion for this type of car. There is a higher proportion of both Medium and Large/SUV cars than budgeted which has resulted in a favourable variance for both these types of cars. This will be partly due to the contract with the large company which was for only Medium and Large/SUV cars. It would be helpful to determine the number of cars of each type under the contract with the large company to try to separately determine the impact that the competition from the global car rental company has had on the mix. As this is a new service for us however, it is possible that the budgeted mix was inaccurate, for example, what assumptions were made about the type of cars that business customers would want to lease.

Lease income quantity contribution variance

The quantity variance is based on the total number of actual cars at the budgeted mix. The total number of cars is above budget. The total quantity will have been favourably affected by the contract with the large company and the advertising campaign which we ran to promote our discounted rates and “home-grown” credentials. It will also have been adversely affected by the competition from the global car rental company. The competitor car rental company may have attracted some of our existing customers and potential customers to use its service rather than ours. However, this is a new service for us and it is also possible that our budget estimates were inaccurate.

Market conditions and customer preferences

The decision to reduce lease fees in response to the competition suggests that we believe that customers are price sensitive. The cars offered by different companies will be directly comparable and customers may not differentiate between the companies in terms of the quality of service offered. However, it would be useful to know more about the business contract, as we seem to have been able to win the contract despite the presence of the global car rental company. It is possible that individuals are more price sensitive than business customers who may potentially be more interested in the type and quality of service being offered.

The information given also suggests that our business customers may be more interested in leasing Medium and Large/SUV cars. This may not have been reflected in the budgeted mix.

Treatment of events after the reporting period and additional expenditure on machinery

Events after the reporting period

The financial statements for the year ended 31 December 2021 are still to be finalised therefore it is possible to make adjustments for events happening after the reporting period as long as these are adjusting events in accordance with *IAS 10 Events After The Reporting Period*.

The fire which occurred in the car holding centre happened on 8 January 2021 which is after the end of the reporting period. This is a non-adjusting event because the fire is independent of any condition existing at the reporting date.

Any impairment as a result of the damage caused will be charged to profit or loss in the year ended 31 December 2022 rather than 31 December 2021. This impairment is likely, depending on the number of cars damaged, to be significant enough to disclose as a non-adjusting event in the financial statements for the year ended 31 December 2021.

The settlement of the legal case on 10 January 2022 represents an adjusting event. It is adjusting because the settlement of the case is an event which gives evidence of a condition that existed at the reporting date of 31 December 2021. The case was initially taken out in December 2020 and therefore was outstanding at the reporting date.

Because this is an adjusting event, the E$30,000 received should be credited to profit or loss for the year ended 31 December 2021.

Additional expenditure on machinery

IAS 16 Property, Plant and Equipment, normally requires expenditure on an asset already recognised to be charged to profit or loss as incurred. However, if

that expenditure is expected to increase the future economic benefit of the asset in excess of the originally assessed level of performance, then it can be added to the carrying amount of the asset.

In our case, the reconditioning of the machinery has extended its useful life by 2 years compared to our original assessment. Therefore, the future economic benefit that will be derived from this asset is increased and therefore this subsequent expenditure on the asset can be capitalised.

The carrying amount of the machinery at 1 January 2021 was E$60,000. At 1 December 2021 the carrying amount will be E$60,000 less depreciation of E$3,000 per month x 11 months. The additional expenditure of E$40,000 will be added to the carrying amount at 30 November 2021.

The depreciation charge for December 2021 will be based on the new carrying amount for the machinery and its newly assessed remaining useful life.

OPERATIONAL CASE STUDY
MAY & AUGUST 2021
EXAM ANSWERS

Variant 4

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SECTION 1

Costing for the AcellerEase app

How to determine the cost per unit of the AcellerEase app

To determine the cost per unit of the AcellerEase app we first need to establish any direct costs associated with this specific app. These will include:

- The royalty fee of E$0.20, payable each time the app is downloaded.
- The E$500,000 paid to CrystalApp for development and testing.
- Future administrative service costs related to the AcellerEase app dashboard needed to manage the content of the app, functionality, app updates and user profiles.
- Future external functionality services costs to support push notifications and payment processing where these relate to this app only.

Secondly, we need to determine the indirect costs which are those costs which cannot be directly associated with the AcellerEase app. This includes costs that relate to all apps and will include infrastructure and on-going IT support services cost (the costs of the upgrades required to our internal servers and the cost of maintaining the servers in the future). It will also include any functionality costs that are shared with different apps.

The cost per unit of the app will be the royalty fee of E$0.20, plus the total of the other direct costs associated with the app divided by the number of apps to be downloaded, plus an appropriate share of the indirect costs associated with all apps divided by the number of apps to be downloaded. This will involve estimating future costs, determining how many apps are likely to be downloaded and apportioning shared costs across different apps.

The difficulties of determining a cost per unit of the app

Many of the direct and indirect costs associated with the app will be spread over a number of periods and therefore it can be difficult to establish up-front what these costs are. The cost associated with development and testing is E$500,000, but other costs such as infrastructure and functionality services will be incurred in the future. It is difficult to estimate what these will be and for how many years we will need to incur them.

The indirect costs that relate to more than one app have to be shared between all of the apps. It is potentially difficult to determine what an appropriate share might be as we would need to find a meaningful way to apportion these costs, such as, for example, membership numbers.

It is difficult to determine the lifespan of our app and also how many apps will be downloaded over its lifetime. If the AcellerEase car club scheme is not successful, then the app may have a short life. On the other hand, it could operate for years and have a high number of downloads. Alternatively, it might need to be redeveloped if different types of technology emerge in the future.

Digital data for estimating membership numbers

Data from external digital sources

To prepare an estimate of membership numbers we will need to understand the likely demand for a car-club scheme in each of our three city locations. We will need to obtain data about factors such as the size of the population in each city and the existing level of car ownership (the higher the level of car ownership, the lower the likely level of demand for a car-club scheme). We will also need to consider the age of the population (a recent press report indicated that such schemes are most popular with the younger generation) and the level of disposable income in the areas where we plan to locate (membership of a car club scheme is seen as a cheaper alternative to owning a car in an urban environment).

We will be able to obtain data about all of this from a number of external digital sources:

- Government (both national and local) statistics and reports will be available on the web with data about the size of the population and demographic information (such as age, gender and disposable income profiles).
- Car hire industry reports specifically about car-club schemes could be available from industry organisation websites. We might need to look at data from outside of Everland given that Everland only has one such scheme at present and this is operated by one of our main competitors.

- Media press reports, especially in the local areas, could give us an indication of potential demand.
- Finally, we could see if there are any reports available on external websites about traffic usage and congestion in these areas, or even taxi routes. This might indicate the number of shorter distances being travelled, which would give an indication of the potential popularity of the scheme.

Potential problems of using data from digital sources

A potential problem of gathering data from lots of different digital sources, is that it could result in information overload. The volume of digital data available is vast and we will need to be careful that the true picture isn't lost in this volume. In addition, there could well be a huge variety in the format and consistency of the data obtained, which would limit its usefulness for preparing these estimates.

We need to be careful that the data obtained is relevant to what we are trying to establish, that being membership numbers for a car-club scheme in each of three separate locations. Any industry reports from car-club schemes operated in other countries should be treated with caution and take account of any differences in the demographics of the local population.

It is not always possible to ascertain the accuracy and credibility of digital data from the internet. Whilst we would expect data from government sources to be more reliable than other sources, we need to consider the age of the data and the reliability of the source.

SECTION 2

The decision tree

What the decision tree represents and how we should use it to make our decision

The decision tree shows that there are two decisions to be made. The first decision, point E, is whether the cars are maintained by the manufacturer or in-house. The second decision, point D, is whether to accept Option 1 or Option 2 with regard to different thresholds for mileage. Option 1 has a higher probability of low mileage than Option 2, which indicates that there is a greater chance under Option 1 of the fleet meeting the low mileage threshold. Therefore it would appear that Option 1 has a higher mileage threshold than Option 2.

To make the decisions using the decision tree, we start with the decision at point D about whether to take Option 1 or Option 2. The expected value of cost at point A is E$658,000 (Option 1) and the expected value of cost at point B is E$642,000 (Option 2) and we will select the lowest of these. Therefore, we should choose Option 2.

We then consider decision point E. At decision point D, we know that the decision is to choose Option 2 if we choose to include maintenance. At point E, we need to make the decision whether or not to include maintenance and we now need to compare the expected value of cost of E$642,000 to the expected value of cost for carrying out maintenance in-house, which is E$646,000 (E$518,000 + E$128,000). Based on the information given in the decision tree therefore, the most financially beneficial decision is for the manufacturer to undertake maintenance and to accept Option 2.

Limitations of using decision tree methodology for this decision

This decision tree is based on the weighted average of total lease fees, at the three different mileage levels, weighted by the probability of each mileage level occurring. Using expected values is valid where a decision is to be repeated many times because the average represents what may happen in the long term. However, this approach is less valid for a one-off decision.

In addition, the expected values are based on estimated probabilities, which given that this is the first time we have operated a car-club scheme, could be inaccurate. The difference between the expected values at point E is relatively small. If the probability of a low level of mileage for Option 2 was reduced and medium or high levels increased, this could potentially change the decision.

Because a decision tree approach uses expected values, there is an assumption that the decision maker is risk neutral and therefore is not interested in the range of possible outcomes. In this instance, choosing inclusion of maintenance and Option 2 has the greatest range of possible outcomes from E$510,000 to E$730,000.

Treatment of lease for the cars

In accordance with *IFRS 16 Leases*, because the lease for the cars is for a period of 12 months we can elect to treat this as a short-term lease. If we do not make the election, then we should treat this in the same way as a longer-term lease and recognise a right-of-use asset.

The election to treat a lease as short-term needs to be made by class of underlying asset, which in this case is cars. As we currently don't have any other leases for cars, we are free to make the election for this lease if we wish to. However, if we do this then all future leases for cars would have to be treated in the same way.

IFRS 16 Leases defines a short-term lease: it is a lease that at its start date has a lease period of 12 months or less. Our lease meets this definition. If we do make the election to treat this as a short-term lease, the accounting treatment is relatively simple. We will record the initial lease payment as an expense on a straight-line basis over the lease term. Given that this lease will commence on 1 July 2021, this means that the expense in the statement of profit or loss for the year ending 31 December 2021 will represent 6 months of the lease term. The difference between this and the up-front payment will be recorded as a prepayment within current assets.

If the election is not made, the lease should be treated in the same way as a longer term lease. As there is a single lease payment made in advance, there will be no lease liability as there are no future payments. However, there will be a right-of-use asset, which represents the fact that we, Acellerate, have the right to use the cars for the period of the lease. The right-of-use asset is initially recorded as the value of the initial lease payment.

Because the cars will be handed back to the manufacturer at the end of the lease term, the right-of-use asset will need to be depreciated over the lower of the lease term and the life of the asset, which is 12 months. The depreciation will be charged to profit or loss. Given that the lease commences on 1 July 2021, 6 months of depreciation will be charged to profit or loss. Ultimately, whichever treatment is taken, the overall impact on profit is the same, which is an expense for 6/12ths of the initial lease payment.

Expenditure on electric charging points

The expenditure of E$250,000 on charging points will be capitalised as property, plant and equipment because these charging points are tangible in nature and are expected to generate economic benefit for 8 years. The asset will be depreciated over its 8-year useful life. Using a straight-line approach the depreciation charge for the year ending 31 December 2021 will be calculated as (E$250,000 – any residual value) / 8 years x 6/12 (to represent the fact that we start depreciating from 1 July 2021). This will have the impact of reducing reported profit for the year or increasing a reported loss.

With regard to our tax charge, we will be able to claim 100% first year tax depreciation allowances, which will therefore be the full E$250,000. These allowances are not pro-rated because the tax rules of Everland state that a full year's allowance can be claimed in the year that qualifying assets are purchased. Tax payable is calculated as accounting profit + accounting depreciation - tax depreciation allowances. For the year ending 31 December 2021, the tax depreciation allowance for the charging points will be significantly greater than accounting depreciation and therefore taxable profit will be lower than accounting profit. This will reduce the amount of tax payable compared to what it would have been had the expenditure not been made. If, as was the case in 2020, we make a loss for the year, we do not need to claim all of the allowance.

SECTION 3

Cash flow and recoverability risks of AcellerEase membership scheme and actions to mitigate

The risks associated with the members payment structure are as follows:

- There is a risk that members pay later than they should do. This could perhaps be because setting up of a direct debit is delayed or because the bank cannot honour the direct debit as the member has insufficient funds in their account at the end of the month. Whilst this may be remedied in the following month by the member, this will impact our cash flow. Given that we will be paying for the lease of the cars up-front at the start of the scheme, it is important that the cash inflow associated with the scheme is received as soon as possible to ensure that the investment in working capital is minimised.
- There is also a risk that members do not pay at all. In such cases the receivable would need to be written off which would reduce profit.

In order to mitigate these risks, we should:

- Ensure that we check the creditworthiness of all potential members before setting up their account by obtaining their credit score. Third party credit agencies are available which provide this kind of service.
- Ensure that direct debits are set up before the member has full access to the app.
- Communicate with members throughout the month to remind them of balances outstanding. This could be done through the membership app or through text messaging or email.
- At the end of each month generate an aged receivable report of member account balances unpaid. Procedures should be in place to contact the member via the membership app or other communication channel to ask for immediate payment. This should be carried out as soon as possible once the payment is overdue, so that if a membership needs to be cancelled this can be carried out in a timely fashion.

Key Performance Indicators (KPIs)

Percentage of new accounts set up within two working days: This would be calculated as the number of membership accounts set up within two working days divided by the total number of membership accounts set up in a month. We are providing a new type of service and customer satisfaction is an important feature to ensure the success of that service. Ensuring that membership accounts are set up and therefore that the member can utilise the scheme within two days of applying for membership, is likely to enhance customer satisfaction. Therefore, this KPI will measure how effective the Membership Department is in meeting its target of two working day set-up. Care needs to be taken though that

set-up procedures do include all the necessary steps such as obtaining credit scores and the set-up of direct debits, as explained above.

Time taken to resolve member queries: This would be calculated as an average for all queries, where the time taken for each query would be measured as the number of hours between receipt of the query and resolution. An important aspect of the role of the Membership Department will be to deal with member and potential member queries. From a customer satisfaction point of view therefore, it is vital that these queries are resolved as promptly as possible. This is important for potential members to ensure that they do actually become members, but also for actual members to ensure that they stay members.

Percentage of memberships cancelled due to non-payment: This would be calculated as the number of memberships cancelled for non-payment divided by the average number of memberships in the month. The AcellerEase Membership Manager has the authority to cancel membership accounts, although this should really be a last resort, rather than an automatic option. If the number of accounts cancelled in a month due to non-payment is high, this could indicate that the Department was ineffective when checking creditworthiness at account set-up or in chasing for payment from the member.

What-if analysis

How the what-if analysis helps us understand

The schedule shows what would happen to budgeted revenue and fleet profit under two assumptions. In the assumption A column, we are assuming that a 5% decrease in fees will lead to a 10% increase in member numbers. In the assumption B column, we are assuming that a 10% decrease in fees will lead to a 20% increase in membership and an increase in the fleet of cars.

Under assumption A, sales revenue would increase by 4.5% and under assumption B by 8%: these changes are affected by both the increase in the number of members (which will increase revenue) and the decrease in member fees (which will have the effect of decreasing revenue). Because the scale of the increase in member numbers is larger than the decrease in member fees, the overall impact under both assumptions is to increase revenue.

Fleet profit is measured as revenue less fleet costs. In the original budget fleet costs are based on 180 cars. This level of fleet also applies with assumption A and therefore we might expect fleet costs to stay the same. However, there is a slight increase in fleet costs compared to the original budget which indicates that some of the fleet cost is variable in nature, with the increase being due to greater use of the cars as a result of more members. However, because most fleet costs appear to be fixed in nature and the number of cars has not changed, the overall impact of assumption A on fleet profit is an increase of 8.3%. The impact of the increase in fleet costs is more than compensated for by the increase in revenue.

With assumption B, the fleet will need to increase by 30 cars and therefore this will increase fixed fleet costs, as well as increasing variable fleet costs due to the higher number of members. It appears from Table 1 that the increase in total fleet costs is greater than the increase in revenue leading to a 1.7% reduction in fleet profit compared to the original budget.

Benefit and limitation of this what-if analysis

What-if analysis allows us to model the effects of changing more than one variable at a time. This is important where a change in one variable (for example, member fees) is likely to lead to changes in other variables (for example, member numbers and the size of the fleet). Each of the assumptions in the what-if analysis starts with a decrease in member fees and recognises the impact of this on the inter-dependent variables of member numbers and fleet size.

However, this what-if analysis assumes that a 5% decrease in member fees will lead to a 10% increase in member numbers and that a 10% decrease in member fees will led to a 20% increase in member numbers. However, it is possible that the scale of change to member numbers will be different. For example, a 5% decrease in member fees might result in no change or an increase of only 5%. It would be useful to consider the probability of different outcomes for member numbers and understand the likelihood of the assumption being realised.

SECTION 4

Membership fee variances

Membership fee price variances

The membership fee price variances are all adverse which means that the average membership fee per member was lower than that budgeted in each location. The reason for this is Jack Durand's one-off promotional discount for the first month of the scheme. The scale of the variances indicates that there was significantly less discounting in Southdon compared to both Northlee and Westport. Given that the discount was only given for July's membership fee, the lower level of discounting for Southdon is due to the delay in setting up the scheme there.

Membership fee mix variances

The membership fee mix variance for each location is a measure of how the change in mix between occasional and frequent user members has affected the income earned at each location. In Westport, the variance is favourable which means that a greater proportion of members took out the frequent user memberships compared to occasional memberships than was budgeted. The frequent user membership has a significantly higher 3-month membership fee of E$54 (compared to E$15 for occasional membership) and therefore this will have increased income for the period compared to that budgeted. The mix variances for both Southdon and Northlee are however adverse, which means that a greater proportion of members took out the occasional membership compared to frequent user memberships than budgeted.

The budgeted mix of members is the same for each location in the proportion 1500:750 occasional to frequent user. We know that Westport is a large port city with relatively poor public transport compared to the other two locations and therefore this could be a reason why the proportion of frequent user members is greatest there. It could be that our original estimate of the budgeted mix is incorrect for each location and going forward we should take into account the separate demographics and characteristics of each location.

Membership fee quantity variances

The membership fee quantity variances are favourable for both Westport and Northlee. This means in both locations there were more members than budgeted. The nil variance for Southdon means that the actual number of members was the same as budgeted, despite the fact that the scheme was delayed by two weeks here.The increase in member numbers compared to budget could have been a direct result of the one-off promotional discount. Alternatively, it could be that the market for this type of scheme in these locations is better than anticipated or that our marketing has been more successful than we anticipated.

Success of the schemes in each location

In terms of overall success of the AcellerEase scheme in each location, the only location where membership income is higher than budget is Westport (because the total of the variances is favourable). In Westport, the impact of the membership fee discount based on actual members (the price variance) is more than outweighed by a favourable change in mix towards frequent users (the mix variance) and an increase in membership numbers based on the budgeted mix (the quantity variance). However, due to this change in mix it is highly likely that income from the hourly hire charge will be lower than budget given that frequent user members pay a lower hourly rate. Therefore, it will be important to consider the two sources of income together. In addition, it is not clear whether the increase in membership numbers is a temporary impact of the discount.

Southdon and Northlee have followed similar patterns to each other: if there had been no delay in setting up at Southdon it is likely that there would have been a favourable quantity variance for the period. For both locations though, membership fee income is lower than budget (because of a total adverse variance), a significant part of which is linked to the mix of memberships. Again, we would need to consider these variances alongside the variances for income from the hourly hire charges. These are likely to be better than budget given the higher proportion of regular memberships.

Decision about cleaning services

The chart

The chart shows that if the cleaning of AcellerEase cars was outsourced, the outsource partner would charge a fee per car clean. The origin of the line starts at zero and therefore there is no fixed cost element associated with this option. The cost per car clean is constant until around 2,000 cleans when the slope of the line becomes shallower. This will be due to a reduction in the fee charged per car clean above 2,000 cleans. This is likely due to a bulk discount.

If we carry on cleaning the cars in-house, the chart shows that even if we clean no cars there will be a fixed cost of E$5,000 per month. This is because we will need to incur costs such as for equipment, whether or not any cleaning is required. The variable cost per car clean is lower than the outsource fee (as shown by a shallower gradient to the line) until 2,000 cleans. This is likely to be because the outsource partner needs to cover its own fixed costs associated with the contract. After 2,000 cleans the variable cost per car clean is the same for both outsourcing and in-house because the lines run parallel to each other and therefore have the same gradient. At around 2,500 cleans there is a step up in fixed costs for in-house (presumably more equipment needs to be hired).

The chart indicates that if monthly car cleans are between approximately 1,300 and 2,500, cleaning the cars in-house is the cheapest option. At all other possibilities, outsourcing is the cheaper option. In the previous 3 months, the number of car cleans a month was on average 2,180, which falls within the area of the chart where in-house is cheaper. However, given that we are looking to

increase the fleet in the near future, potentially we will need more than 2,500 cleans a month, meaning that outsourcing would be the best option from a financial point of view.

Other factors

Before making a final decision however, there are other factors that we should consider:

- Is the outsource partner's pricing structure likely to continue into the future or is it an introductory offer? If the latter, would the outsource partner increase prices in the future? If so, this could change the decision as the gap between the costs of the different options isn't significant.
- How reliable is the outsource partner? Would it be able to clean the cars to the appropriate standard and on time? It's really important for our own customer goodwill that cars are clean and available when they need to be.
- How financially stable is the outsource partner? If the partner failed, how quickly could we revert to in-house or indeed find another partner.

OPERATIONAL CASE STUDY
MAY & AUGUST 2021
EXAM ANSWERS

Variant 5

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SECTION 1

Multi-product profit-volume chart

Line A and what it indicates about the original budget

Line A assumes that revenue will be earned from our cars and ancillary services in the order of each category's contribution to sales (c/s) ratio. For the original budget this order is Prestige, Ancillary, Medium, Large/SUV and lastly Small. Line A ends at the total amount of revenue and profit as originally budgeted for the 6 months: revenue of approximately E$95 million and profit of just over E$10 million. Line A starts at approximately minus E$48 million on the y axis, which is the originally budgeted fixed costs for the period.

The breakeven position for line A (which is where neither a profit or loss is made) is revenue of approximately E$75 million. The margin of safety is reasonable as revenue would need to fall from around E$95 million to the breakeven of E$75 million before a loss was made. Line A also indicates the Medium category has the largest revenue because its share of the line is the greatest and Ancillary services the smallest.

What Line B indicates about the revised budget

Line B represents, based on the revised budget, the combinations of revenue and profit based on the order of the c/s ratios of each category. Some of the individual c/s ratios have changed due to the revision to the budget (although the order of the ratios hasn't).

Changes to the number of cars in each category will have no impact on the c/s ratio of that category because the car utilisation rate is the same as that

budgeted. Budgeted variable costs per car and per ancillary service are the same as the original budget, therefore any change to the c/s ratio will be due to changes in the daily hire fee or ancillary service prices. The c/s ratio for Small cars has fallen, indicating a reduction in the daily hire fee. The c/s ratios of Medium cars and Ancillary services have increased, indicating an increase in the fees. These changes in c/s ratio will be reflected in different slopes on the line, although this is hard to detect on the chart because the changes in c/s ratio are relatively minor. There have been no changes to the daily hire fees for Prestige and Large/SUV cars.

The change in the mix of cars held in the fleet can be seen from comparing the length of each section on both lines. Prestige is the first category on both lines and the relevant section of Line B is shorter than that of Line A. This indicates a decrease in revenue from this category which must be wholly due to a decrease in the number of cars given that car utilisation and c/s ratios have not changed. Similarly, Medium is the third category and the relevant section of Line B is longer than that of Line A. This will in part be due to the increase in the daily hire fees but is also likely to result from an increase in the number of cars.

Line B shows that fixed costs have increased to approximately E$51 million and that total budgeted revenue is greater than originally budgeted at around E$102 million. Profit has also increased to approximately E$11.5 million. This will be due to the effect of the increase in the number of cars and the overall increase in the c/s margin outweighing the impact of additional fixed costs. The breakeven position has increased to approximately E$80 million because the level of fixed costs has increased: more contribution is needed to make a profit. The changes to the c/s ratios will also affect the breakeven, although from the chart it is difficult to establish this effect. The margin of safety is now from approximately E$102 million to approximately E$80 million (which is a slightly higher differential than the original budget, indicating a slight increase in margin of safety).

Time series

The trend

The trend line represents the trend in the number of car rental days for Small, Medium and Large/SUV cars for the period 2017 to 2019. The trend is the average position over time with seasonal variations smoothed out. The first number in each equation represents the base level of rental days for each type of car. The second part of each equation represents the trend away from this base level. For small cars this means that for each successive quarter, the trend is for rental days to increase by 180 (therefore, in quarter 1 rental days were 712,000 + 180). For Large/SUV cars on the other hand the trend is for rental days to decrease by 6,000 each successive quarter (therefore in quarter 1 rental days were 328,000 – 6,000). The trend indicates that, based on the data for 2017 to 2019, there is a downward trend in rental days for Large/SUV cars and an upward trend for the other types of car (although the increase for Small cars is minor given the base level of rental days).

Seasonality

The seasonality information in the second table indicates how different times of the year affect the trend. Seasonality has been calculated using the multiplicative model which means that for all car types, rental days are 40% higher than the trend in the quarter July to September and 50% lower than the trend for the quarter January to March each year. This correlates with the fact that the South West region of Keyland is a major beach vacation destination which means that there will be significant changes in the demand for the hiring of cars.

Usefulness of this information for planning purposes

Given that the time series analysis is based on data of actual rental days specific to the South West of Keyland, we can be reasonably confident that it can be used to assess the size of the car rental market in the region. However, what will be difficult to determine is how much of a share of this market we will be able to access, given that currently there is no Acellerate brand presence in Keyland. Ultimately this will depend on where our rental operations are based and the level of marketing that is undertaken.

Assuming that we can establish our likely share of the market, knowing the level of and degree of seasonality is useful for planning purposes, especially with regard to the number of cars required in the fleet at peak times. Given the high level of variation in demand, we might need to consider whether to plan for flexibility in the fleet, possibly using 6-month leases in peak times to reduce car idle time.

There are however some issues with the fact that the data used to create the time series is for the years 2017, 2018 and 2019. It excludes 2020 and therefore reflects the number of rental days before the global economic recession. Even though we seem to be recovering from the recession, it is unlikely that, certainly to start with, Keyland will have returned to a pre-recession number of rental days. Additionally, it’s possible that the trend and seasonal variations are not appropriate going forward, even when recovered from the recession as these are based on historic data.

SECTION 2

Decision about marketing campaign and using BGF Consultants

Maximax and Maximin decision criteria

A decision maker using the maximax decision criterion is an optimist and will select the option which gives the maximum possible outcome. Using this approach, we would select Campaign B with the use of BGF Consultancy as this gives the possibility of a maximum outcome of E$889,000.

Alternatively, a decision maker using the maximin decision criterion is a pessimist and will select the option which gives the maximum of the minimum outcomes. Using this approach, we would select Campaign A without the use of BGF Consultancy as this gives us the maximum of the minimum outcomes of E$17,000.

Decision making approaches with probabilities

If we were able to establish the probabilities associated with moderate, good or very good success of the campaign, how we make our decision would depend on management's attitude to risk.

- Using a risk neutral approach, we would calculate expected value and select the option which gave the highest expected value of profit. Expected value is the weighted average of each of the possible outcomes under each option, where the weighting is the probability of occurrence.
- Using a risk seeking approach, we would ignore the probability of the occurrence of each possible outcome and would select the option which gives us the highest possible outcome. This would be Campaign B with the use of BGF Consultancy as this gives the possibility of earning E$889,000.
- Using a risk averse approach, we would select the option which has the lowest coefficient of variation. The coefficient of variation is a measure of the amount of risk per E$1 of expected value and is calculated as standard deviation of the possible outcome (which is a statistical measure of the spread of the outcomes) divided by expected value. From the information in the schedule, it would appear that Campaign A has a lower spread of possible outcomes than Campaign B.

The benefits of a flexible budget approach for the Keyland operation

A flexible budget is a series of budgets at different activity levels. For the Keyland operation, this means that there will be a series of budgets, each at a different number of car rental days. Keyland is a brand-new market for us. Whilst we have

carried out research about the size of the market, we are currently an unknown brand in Keyland and therefore there is significant uncertainty surrounding how many car rental days we will sell.

Preparing the initial budget on a flexible budget basis allows the SMT to see the impact that different numbers of rental days will have on budgeted sales revenue (which varies directly with rental days), car costs (which should depend on the number of cars) and the impact of this on budgeted profit. Note that fixed costs should be the same in each budget, unless there is a step-up in fixed costs arising from different activity levels.

Whilst we will need to set a single budget going forward, seeing the different positions at this stage will give the SMT insight into potential future issues. It will also allow the different managers to plan their actions accordingly. For example, Tony Berger, Fleet Procurement Manager, will have an idea of how the fleet size might need to be increased should the number of rental days be higher than anticipated.

Working capital of potential car valeting service providers

JRT Valets

JRT Valets would appear to take an aggressive approach to managing its working capital. It has the lowest receivable days of all the providers: indeed, its receivable days are very close to the credit terms that it gives its customers. This indicates that JRT Valets takes an aggressive approach to managing its customer balances, either chasing for payment aggressively or offering prompt payment discounts. The implication of this for us is that given we would be one of 16 customers, we could expect the same treatment. Payable days are high in comparison to receivable days which means that it receives cash from customers a significant number of days before it pays its suppliers. This will be one reason for the relatively high cash balance especially given the reduction in revenue as a result of the global economic recession. It also indicates that it takes a slightly unethical approach to paying its suppliers, which is a practice that we may not wish to be associated with.

KeyClean

KeyClean would appear to take a more moderate approach than JRT Valets to working capital management. Its receivable days are the same as its payable days, although both are above the credit terms offered and received. It has a small positive cash balance, which indicates that it has successfully managed its cash flow through the recession. The implication for us is that this appears to be a stable business. In addition, KeyClean has the lowest number of customers and therefore as a customer, we are likely to be more valued than with JRT Valets.

Gleam

Gleam seems to be taking a conservative approach to working capital management as it has very high receivable days in comparison to the others and in comparison to the credit terms given to its customers. Alternatively, there could be indications that Gleam is overtrading. It appears to have lost control of its receivable balances, has an overdraft and has grown 12% despite the global recession. This could indicate that Gleam is a relatively new business which could mean that it is inexperienced. In addition, it is in a precarious financial position given the overdraft and a possible inability to pay suppliers on time which could affect its ability to continue to trade.

SECTION 3

Planning and operational variances

To assess the performance of Bill Hooper, Keyland Manager, it is important that the variances against which his performance is being assessed have arisen due to his actions and his actions only. It would be unfair to assess his performance against variances which included the impact of decisions and actions that were out of his control.

In this instance, the planning variances represent the difference between the original standards and the revised standards. These revised standards reflect the impact of the actions taken by the SMT in the Keyland market. Bill Hooper had no input into these decisions and therefore should not be held accountable for the effect of these actions on the variances.

In contrast, the operational variances represent the difference between the actual results and the revised standards. These variances are a good measure of the performance of Bill Hooper because they reflect the impact of the direct actions he has taken as well as his general management of the operation in Keyland.

Effect of actions on the variances

Actions of the SMT

The actions of the SMT are reflected in the planning variances which reconcile budgeted fleet profit to revised budgeted fleet profit. The effect of the price reduction negotiated with the external fleet maintenance provider is reflected in the fleet cost planning variance, which is E$115,000 favourable. This variance shows that the revised standard cost per car is lower than the original standard. A significant part of fleet cost is maintenance of the cars and therefore the price reduction in these costs by the SMT has resulted in this favourable variance.

The effect of the change in daily hire charges for small cars is reflected in the sales price planning variance, which is E$79,000 favourable. This means that the revised standard average daily hire charge is higher than the original standard. This is the direct result of the change for small cars. This increase in revenue will though have increased the commission paid to SW Hotels, as shown by the adverse commission cost variance of E$12,000.

Actions of Bill Hooper, Keyland Manager

The actions of Bill Hooper are reflected in the operational variances which reconcile the revised budgeted fleet profit to actual fleet profit. The effect of the social media promotion is likely to be reflected in two variances: the sales volume operational variance and the commission cost operational variance. The sales volume variance is E$49,000 favourable which means that more rental days were sold compared to the revised budget. It is highly likely that the social media

promotion attracted more customers and therefore a greater number of rental days were sold. It could also be that generally there was a greater number of bookings than anticipated when the budget was set. The commission cost variance is E$78,000 adverse which means that we paid more commission to SW Hotels than anticipated. There will be two reasons for this: the increase in sales revenue resulting from the increase in the number of rental days sold and also a possible change in the mix of customers. The promotion was directed at customers to book online and therefore we might have expected that there would be a greater proportion of this type of customer in the mix, which would have given a favourable variance. However, given the size of the adverse commission cost variance, it would appear that there was a greater proportion of the higher commission rate bookings at the hotel compared to online.

The effect of changing the car valet provider is reflected in the fleet cost rate operational variance, which is E$45,000 adverse. This variance means that the average fleet cost per car is higher than the revised fleet cost per car, which would indicate that the new service provider was perhaps more expensive than the previous service provider.

Review of Key Performance Indicators (KPIs)

The first KPI linked to the hotel website is of slight concern. The click through rate from the SW Hotels website is only 68% compared to the target of 80%. This could indicate that the SW Hotels webpage for car hire is either not user-friendly, not inviting or lacks the appropriate information. This would need to be investigated to see what could be done to improve the webpage and the link. Alternatively, it could be that hotel guests are not drawn to use our services to the level that we thought they might be.

The final two KPIs concern our own website. The conversion rate is the rate at which visitors to the website are converting to a booking. The number of visitors to the Keyland website indicates the level of interest in car hire, but it is important that we are able to convert these potential customers into bookings. The conversion rate is 74%, a little higher than target which is encouraging. This indicates that our website quality is good and that people in Keyland are attracted to our services and not discouraged by our prices. This is supported by the favourable sales volume variance explained above.

The booking page abandonment rate tells us how many potential customers are starting to make a booking but not completing it. The lower the rate, the better. If the rate is high, this may indicate that there is too much “friction” in the booking process or that potential customers are not convinced about whether to go ahead with the booking. The abandonment rate is 3%, which is lower than the target of 5% and therefore positive. This indicates that the level of friction in the process is minimal.

SECTION 4

Costing based on the activities that drive cost

We currently use a standard average cost per day of E$20.50 to determine our pricing policy for Small car rentals. However, this approach assumes that the cost will be the same each day regardless of the number of days of the rental period, which is not necessarily the case. Considering each of the activities identified in Table 1:

- **Car pick up**: Each time a car is picked up, cost will be incurred in respect of employee time explaining the paperwork and giving instructions about any special features of the car. Whether a car is rented for 1 day or for 14 days there will only be one car pick up activity and therefore this cost is being incurred once each rental period. Therefore, this means that when considering the cost per day, a 1-day rental will include all of the cost of this activity, a 7-day rental will have 1/7th of the cost of the activity and a 14-day rental will have only 1/14th of the cost.
- **Cleaning**: Each time a car is returned it needs to be cleaned and the costs of this will be the fees paid to the external car valeting service provider based on the number of hours. Table 1 indicates that the time taken to clean a car does vary depending on the length of the rental period. For a 1-day rental 0.4 hours is needed, whilst for a 7-day rental 0.6 hours is needed, which is less than double the time, despite being 6 more days. This indicates that the time needed for cleaning is not proportional to the length of the rental period. Therefore, this means that when considering the cost per day, a 1-day rental will include a cost of 0.2 x E$18, a 7-day rental will include a cost of 0.4 x E$18 divided by 7 and so on.
- **Oil change:** Each car has its oil changed every 10,000 kilometres. The costs involved will be the cost of the oil and the costs of labour. Table 1 indicates that the number of kilometres driven by the person renting the car is the same each day, that is 80 kilometres a day. That being the case, the average daily cost will include the same amount equivalent to 80/10,000ths of the cost of an oil change, irrespective of the length of the rental period.

Therefore, we can establish that our costs in Keyland are driven not necessarily by the length of the rental period, but by the activities that happen. As explained above, some activities happen once in a rental period and therefore the cost can be divided amongst the days in the rental period (for example, car pick up). The cost of other activities (such as oil changes , but also insurance and depreciation) will be the same each day and not affected by the length of the rental period.

Therefore, if we were to extend the analysis of activities, we could establish a more accurate cost for different rental period lengths and adjust our pricing policy

to reflect this. It might be that by tweaking our pricing policy we can increase the number of total rental days and therefore increase profit.

Additionally, using this type of information for costing and therefore pricing can also be beneficial for cost control. By understanding how many times an activity happens and how much cost is involved each time, we might be able to identify better ways of operating or costs which could be saved. For example, it could be that the car pick up process could be stream-lined as a result of understanding how much employee time is taken up each time the activity happens.

Diagnostic equipment

IAS 16: Property, plant and equipment states that expenditure on an item can be recognised as an asset only when it is probable that there are future economic benefits associated with the item and the expenditure can be reliably measured. IAS 16 also states that expenditure which simply maintains or repairs a piece of equipment does not meet these requirements and therefore should be written off to profit or loss.

In this instance, E$34,000 is to be spent upgrading the diagnostic equipment. This goes beyond repairing or maintaining the equipment. Indeed, this expenditure will extend the useful life of the equipment by 3 years, which will increase the amount of future economic benefit expected from it. The expenditure can also be reliably measured and therefore can be capitalised as part of the cost of diagnostic equipment.

The E$1,000 to be spent transporting the equipment and the E$800 to have it installed in Keyland, are both required in order for the diagnostic equipment to be ready for use. These are examples of directly attributable expenditure and should also be included in the cost of the asset. The training cost of E$750 though should be written off to profit or loss as incurred because the equipment is ready for use whether or not the employees have been trained.

The cost of this asset will be its carrying amount at the date the additional expenditure happens (E$65,000 less any deprecation) + E$34,000 + E$1,000 + E$800. Depreciation for the rest of the year will be calculated on the basis of the revised cost and the asset's remaining useful life, which will be 7 years, pro-rated to reflect the correct number of months. This will be debited to profit or loss for the year and in the statement of financial position at 31 December 2022, the asset will be included at its carrying amount (cost less accumulated depreciation).

Accounting treatment for the right-of-use asset

In accordance with *IFRS: 16 Leases*, where equipment is leased, this gives rise to a right-of-use asset which represents the fact that we have the right to use the equipment for the lease term. For this lease, there is an initial lease term of 4 years and then we have the option to extend for a further 2 years. IFRS 16 states that the lease term should be the period of non-cancellable payments plus any

optional period if the option is reasonably certain of being exercised. In our case the lease term would appear to be the full 6 years.

The right-of-use asset will initially be measured at the initial measurement value of the lease liability plus any lease payments made at the start of the lease (E$12,000) plus the costs of setting up the lease (E$500). The initial lease liability is the present value of the lease payments that have not yet been paid. This will include the four payments of E$12,000 a year to be made from 1 March 2022 onwards and the further two payments of E$5,000 a year after that. The discount rate used to calculate the present value should be the interest rate implicit in the lease, or if this is not available, our incremental rate of borrowing.

Ownership of the asset will transfer to us at the end of the lease term and therefore we should depreciate the right-of-use asset over the useful life of the underlying asset which is 8 years. For the year ending 31 December 2022, this will result in 10 months' worth of depreciation being charged in the statement of profit or loss. The right-of-use asset will be included in the statement of financial position at initial cost less depreciation.

OPERATIONAL CASE STUDY
MAY & AUGUST 2021
EXAM ANSWERS

Variant 6

These answers have been provided by CIMA for information purposes only. The answers created are indicative of a response that could be given by a good candidate. They are not to be considered exhaustive, and other appropriate relevant responses would receive credit.

CIMA will not accept challenges to these answers on the basis of academic judgement.

SECTION 1

CGMA cost transformation model

Engendering a cost-conscious culture

This part of the model suggests that everyone involved with our Maintenance Centres, from the directors to the Maintenance Manager, to the newest apprentice, should be aware and conscious of the costs being generated to maintain and repair the fleet. Indeed, this cost-consciousness should reach beyond the Maintenance Centre to anybody within the business involved with fleet management. There should be a culture within the business that actions sometimes lead to unnecessary costs, for example if our own employee damages a car whilst in transit.

In our Maintenance Centres, we have regular employee meetings in which all employees are informed about performance and are encouraged to participate and share ideas. Given that the performance of the Maintenance Centres is cost driven, it is likely that there is already a sense of cost-consciousness amongst the Maintenance Centre employees. This could be further extended by setting up specific working groups or quality circles to look at different areas for cost control. In addition, sharing of ideas across Maintenance Centres should also be encouraged.

Managing the risk inherent in driving cost-competitiveness

For this part of the model, we need to consider and then manage any risks associated with cost reduction. For example, we could reduce costs by changing to cheaper suppliers for some of our consumables such as motor oil, brake pads and tyres or equipment such as car ramps and jacks. However, the risk with this

approach is that we end up with lower quality consumables and equipment. Given that ultimately the operational safety of our cars is of paramount importance, ensuring the quality of the work undertaken is really important.

Ultimately, we need to balance any cost reductions with considerations of quality. Taking tyres as an example, assuming that we do not need to use a specific brand of tyre, we could decide to purchase generic tyres from a less well-known tyre brand. However, we would need to be confident firstly that the tyres were fit for purpose and safe, as well as being confident that they will last as long as tyres from a well-known brand. It will not be cost effective in the long run to have to replace tyres more quickly. For the Maintenance Centres, the fact that supplier relationships are managed centrally and that the manager can only use approved suppliers, limits the scope that unnecessary risks are taken.

Understanding cost drivers and cost accounting systems and processes

This part of the model suggests that we need to fully understand why the costs that we incur arise and how different variables affect those costs. We need to be aware of the drivers of cost as this will enable us to manage those drivers with the aim to reduce cost. We currently use a standard absorption costing approach where we set the standards expected for labour time and parts and consumables for each type of check that the Maintenance Centre does. Whilst these standards are regularly being updated, this is taking a relatively simple view of what is driving the costs.

In order to achieve more understanding of what is driving cost in the Maintenance Centres we could implement activity-based costing. This would involve identifying individual activities within, say, a regular car maintenance check (for example, digital diagnostics, changing of oil, checking of brake fluid) and then identifying the cost drivers associated with each activity. By understanding the cost drivers in detail, we are better placed to control the cost.

Production plan for new contracts

Linear programming graph

The feasible region is the area of the graph which includes all of the possible combinations of Partial Services and Complete Services given the constraints on demands, direct labour hours and diagnostic machine hours over the 3-months period.

Lines A and B on the graph are the demand constraints and represent the total number of services required to satisfy the maximum demand from FG Holdings and SB Industries. Line A represents the 1,300 Partial Services and line B represents the 850 Complete Services required to fully satisfy demand. The feasible region will be to the left of line A and underneath line B.

Lines C and D on the graph represent the different combinations of Partial Services and Complete Services which will utilise all of the available resource for

direct labour hours and diagnostic machine hours. These lines, therefore, represent the maximum number of services that can be performed and form a boundary for the feasible region which will be to the left of these lines.

The feasible region is the area of the graph which starts at the origin and is contained by lines B, C, D and A. The optimal mix of services can be found by moving the iso-contribution line (the dotted line which represents the relative contributions of each type of service) until it reaches the furthest point from the origin that is still within the feasible region: this is where lines C and D intersect. Therefore, the optimal mix of services from a financial perspective is around 600 Complete Services and 1075 Partial Services.

Factors to consider

The graph considers the issue of utilising spare capacity from a financial perspective. However, there are other factors to consider before proceeding with the mix of services suggested by the graph.

The mix suggested by the graph does not satisfy total demand for either Partial Services or Complete Services. Therefore, we would need to consider which customer to allocate these services. With 600 Complete Services and 1,075 Partial Services, we could fully satisfy the maximum demand for SB Industries, which would keep this customer happy. However, we would then only be able to offer FG Holdings Partial Services, which they might not be happy about. Alternatively, we could split the allocation to each customer in proportion to the amounts demanded, although this would end up with neither customer's demand being satisfied for either type of service. Ultimately, we need to understand more about the customers' expectations about minimum demand.

The mix suggested by the graph is based on maximising contribution based on the constraints and takes a short-term view of the decision. It is possible that this sort of short-term spare capacity could arise again in the future and therefore it might be better to ensure that these orders are both fully satisfied at this stage. Maybe we could hire additional diagnostic equipment on a short-life lease or recruit some temporary mechanics. We would need to weigh up the cost of doing this against the additional contribution from the contracts, by being able to fully satisfy them, but also the potential for increased sales and contribution in the future.

We also need to consider practical issues such as the types of cars that will need to be serviced and whether we are authorised by the manufacturers to service all of these types of car. Linked to this, we may need different diagnostic equipment or there may be a need for additional training for our mechanics, which would impact the hours available.

SECTION 2

Fixed overhead variances in the Southport Maintenance Centre

Expenditure variance

The expenditure variance is the difference between the actual overhead incurred in the period and the amount of budgeted overhead. This variance is E$26,000 adverse, which means that more was spent than we had budgeted to spend. Fixed overhead includes a wide range of expenditure but given that these are fixed costs, we would usually expect this to be consistent for a given level of activity. Therefore, the main reason for this adverse variance is a step in fixed costs arising from the increased level of activity: the leasing of additional equipment and taking on two additional supervisors to meet the increased demand for repair work and car servicing. In addition, the costs of the 1-week induction course and the on-the-job training will have been incurred earlier than anticipated when the budget was set.

Efficiency variance

The efficiency variance is the difference between the standard hours worked for the actual work done and the actual hours worked multiplied by the standard absorption rate per hour of E$20.60. This variance measures the efficiency of the absorption base which is direct labour hours. The E$20,600 adverse variance means that we used more direct labour hours to carry out the car repair and maintenance work than we should have. In other words, direct labour appears to be less efficient than expected. It could be that the types of repairs that had to be undertaken required more time than average to complete. However, given that new experienced mechanics left and were replaced with a mixture of a newly qualified mechanic and new apprentices, a decline in efficiency is perhaps not unexpected. The newly qualified mechanic would have needed time to get up to speed with our procedures and would probably have been slow to complete work to start with. The new apprentices have not received formal training and therefore again, it is likely that they have taken considerably longer than expected to complete work. In addition, on-the-job training and a greater level of supervision will also have slowed down the work rate.

Capacity variance

The capacity variance reflects the difference between the originally budgeted direct labour hours and the actual direct labour hours worked multiplied by the standard absorption rate per hour of E$20.60. This variance is E$61,800 favourable and indicates that more direct labour hours were worked than originally budgeted, reflecting an increase in the capacity of direct labour. The increase in hours arose because we had to complete more repairs and services than expected. The number of hours needed to complete this additional work was also inflated by the new employees taking longer to do the work.

Feedforward control

A feedforward control approach involves comparing what we expect to happen based on our budget to a forecast of what is expected to happen based on the latest information. This is different to a feedback control approach in which at the end of each budget period we calculate and review the variances between what we expected to happen based on the standards in our budget, and what actually happened.

How a feedforward control approach would have been beneficial

The main benefit of using a feedforward control approach is that we can take corrective action much sooner than with a feedback control approach. As identified above, the Southport Maintenance Manager decided to recruit apprentices earlier than planned. However these apprentices received only limited formal training which means that there was a reduction in worker efficiency (which as identified above, affected the fixed overhead variances, but which would have also manifested in an adverse direct labour efficiency variance).

Creating a forecast before implementing such a decision and then comparing this to the budget gives management an indication of its impact much earlier than waiting for a comparison to the actual results. Therefore, for example in Southport, had the forecast comparison indicated the scale of the impact on efficiency, the Centre Manager may have decided to start formal training of the apprentices earlier or indeed might have reversed their decision to take on apprentices at that time.

Another benefit of this approach is that because it is a continual process, management will be able to see the outcomes of any control actions undertaken as a result of the initial forecast comparison.

Key Performance Indicators (KPIs)

Ratio of apprentice to skilled employees each month: This would be calculated as the average number of apprentices : the average number of skilled employees throughout the month. As demonstrated at the Southport Maintenance Centre, a higher proportion of apprentices resulted in an adverse efficiency variance. Whilst it's probable that some of this variance is a temporary effect due to the lack of formal training, it does indicate that having a greater portion of apprentices is not necessarily effective. Monitoring the ratio of apprentice to skilled employees at each centre, allows us to judge cost effectiveness as well as help to ensure that a centre does not become too reliant on inexperienced apprentices, which could be detrimental to the quality of the work undertaken.

Number of training hours per new employee: This would be calculated as the number of training hours in, say, the first month of an employee's first month of

employment. We would set a higher target for a brand-new apprentice as compared to an experienced mechanic. As illustrated at the Southport Centre, part of the reason for the adverse efficiency variance is likely to be the limited formal training of new apprentices. In maintenance centres, it is really important that apprentices in particular have formal training. If not, there is a risk that work on the cars is not of the correct quality and could be dangerous if a car is put back into the fleet with a mechanical fault.

Employee retention rate by grade each month: This would be calculated as number of employees retained at the end of the month divided by total number of employees during the month for each grade of employee**.** It would appear that in the Southport Maintenance Centre experienced mechanics left at the start of the year. Whilst a level of employees leaving is inevitable (because of people retiring, moving to different locations or simply wishing to take on a new challenge), looking at the rate of employee retention is an important way to monitor manager performance. If the rate is lower than a certain target (say 85%) at a particular centre this could indicate that employees are unhappy or demotivated, perhaps because working conditions are not good or relationships with the manager are poor.

SECTION 3

Zero based budgeting for maintenance employee training

Using a zero based budgeting (ZBB) approach, the first stage will be to decide on the decision units, effectively the activities that will generate cost. In respect of training, this could be broken down into formal training and on-the-job training. Each activity will have an objective associated with it. For example, the objective of formal training will be to ensure that the apprentices qualify and that they develop the appropriate skills so that work they carry out on our cars is of an accurate and safe standard.

For each activity, there will be different ways in which its objective can be achieved or different levels of expenditure that could be incurred. These choices are reflected in decision packages which should be drawn up by those people involved in training (rather than the finance team).

Decision packages can either be mutually exclusive (different ways of achieving the same objective) or incremental (different levels of service to achieve slightly different outcomes). For formal training, mutually exclusive decision packages could be developed to continue outsourcing the training or to set up an in-house Training Centre. As part of developing such a decision package the relative costs and benefits would need to be established, including intangible benefits such as greater control over training content.

Incremental decision packages could then be developed for each option, starting with the base package, which is the minimum that would need to happen to ensure that employees had sufficient training to be able to do the job required without causing safety issues with the cars. From this base, incremental packages will then build on this and could add maybe specialist focused training or additional supervision time, both of which would give extra future benefits. Once the decision packages have been fully developed with costs and benefits identified, they need to be ranked in order of preference.

Benefits and challenges of using a zero based budgeting approach

A key benefit of using a ZBB approach is that past inefficiencies included in the budget are removed. Currently, we use incremental budgeting which means that the budget is set each year based on what happened in the previous year with changes made to reflect price rises and any other known change, such as number of apprentices. With ZBB, the past is ignored, and the budget is built from scratch based on an assessment of the best balance of the costs of training against the benefits of training.

Another benefit is that because maintenance management will need to develop the decision packages this will help them to focus on the effectiveness of different types of training so that resources are allocated to the most effective type.

This approach will also help to ensure that maintenance management view training as an important function rather than just a pot of funds to be used up. This again should improve the quality of training and ensure our employees are of the highest quality.

A key challenge of applying a ZBB approach is the amount of maintenance management time that will be required. Creating decision packages that are fully costed and justified is time consuming. In addition, maintenance management may not have the necessary skills to carry this out and may resent being asked to do it, if they do not foresee any personal benefit.

Another challenge is that establishing some of the benefits of the decision packages can be difficult, especially where the benefits are intangible such as employee know-how. The intangible nature of many of the benefits also leads to issues when ranking decision packages because quantitative information is much easier to compare than qualitative information.

In addition, ZBB can sometimes lead to managers focusing on the short term rather than the longer term. For example, for maintenance apprentice training, one option would be to set up an in-house Training Centre, which although costly to set up could have far reaching benefits in the future. There is a risk that management undervalue these benefits.

Economic Order Quantity (EOQ) for maintenance parts

The information needed to calculate EOQ and why this is optimal

The information needed to calculate the EOQ for a single make and size of tyre is as follows:

- Annual demand which will depend on the number of cars using that type of tyre in the fleet and the number of tyres expected to be replaced each year.
- The cost of placing an order for each type of tyre. This will include the cost of the time taken by the Purchasing Department, internal administrative costs and any delivery costs associated with purchasing.
- The cost of holding one unit of inventory for 1 year. Holding costs will include insurance, storage costs (such as energy used in the warehouse, employee training costs for safe handling, handling employee time) and the finance cost associated with the investment in working capital.

If we order a high quantity each time, inventory levels will be relatively high leading to high total holding costs. However, there will be a low number of orders and therefore ordering costs will be relatively low. Conversely, if we order a small quantity each time there will be relatively low holding costs and high order costs. The EOQ model seeks to find the quantity which minimises the total of both holding and ordering costs, which is why this is the optimal quantity.

Dealing with lead time

The EOQ model gives us the amount of each type of tyre to order each time an order is placed. However, the model does not tell us when to order. If we know the lead time with certainty (which is the case with our main tyre supplier), we can set a re-order point at a level that equates to the number of tyres we expect to use within the lead time period. So, for this supplier where there is usually 1 week between ordering and delivery, we should place our order at the point that we have 1 weeks' worth of inventory left. However, if lead time is uncertain, which we know is the case with some of our other specialist suppliers, we will need to hold a level of buffer inventory. The level of buffer inventory will need to be decided on an individual supplier basis perhaps based on the longest lead times experienced. Clearly this will increase holding costs but should help to ensure that we do not run out of tyres.

SECTION 4

Lifting ramps to be sold

We need to consider if the lifting ramps to be sold should remain as non-current assets or whether they qualify as assets held for sale in line with *IFRS 5 Non-current Assets Held for Sale and Discontinued Operations*.

To be reclassified as an asset held for sale, an asset needs to be available for immediate sale in its present condition and its sale must be highly probable. A sale is highly probable when: management are committed to sell the asset; there is an active programme to find a buyer; the asset is marketed at a reasonable price; the sale is expected to take place within 12 months; and it is unlikely that the plan to sell the asset will change.

The old lifting ramps will be replaced on 24 November 2021 which is the date from which they cease to be used. However, the ramps will not be available for immediate sale in their present condition until they have been fully dismantled, cleaned and repaired, which will happen in the last week of November. It would therefore appear that from 1 December 2021, the old lifting ramps will be available for immediate sale in their present condition.

The lifting ramps will be advertised for sale after the cleaning and repairs are complete which is likely to be from 1 December. Therefore, from that date it could be said that there is a management plan to sell the assets and that a buyer is being sought. We also know that the price of E$50,000 is in line with the second-hand market value of such equipment and therefore is a reasonable price. In addition, we expect to sell the lifting ramps within 12 months of the date that they become held for sale.

Therefore, it would appear that the sale is probable from 1 December 2021, which means that on that date the old lifting ramps should be reclassified as assets held for sale and depreciation will stop. At 31 December 2021, it is unlikely that the assets will have been sold and will be recorded in the statement of financial position within a separate component of current assets as assets held for sale.

The value included for these assets should be the lower of carrying amount at the date of reclassification (which is E$62,000 less the E$1,000 depreciation for the month of November) and fair value less costs to sell (E$50,000 less E$600 less E$900). Therefore, lifting ramps will be recorded at fair value less costs to sell, with the difference between this value and carrying amount written off to profit or loss for the year to 31 December 2021.

Treatment of tyre inventory

The fundamental principle of *IAS2: Inventories*, is that inventory should be stated in the financial statements at the lower of cost and net realisable value (NRV).

NRV is the estimated selling price less the estimated cost of completion and the estimated cost necessary to make the sale.

The damaged 100 tyres can be sold for E$5 a tyre to the scrap yard. The NRV of these tyres is therefore E$500 (100 x E$5) less the cost of transporting these tyres to the scrap yard which is E$200. Therefore, NRV is E$300, which is clearly below the carrying amount of the inventory at E$4,500 (100 x E$45). This means that in our financial statements for the year ending 31 December 2021, we should record these 100 tyres within inventory at their NRV of E$300 and charge the difference between this and the carrying amount of E$4,500 to profit or loss.

The remaining 500 tyres have a carrying amount of E$45 and an NRV of E$50 per tyre. Therefore, these tyres should remain in inventory at their original cost and there is no adjustment required to profit or loss.

Premium motor oil contract decision

Maximax

A decision maker that uses the maximax criterion is an optimist because they will choose the option which maximises the maximum pay-off available. Because this decision is based on cost, this criterion will be to select the option which gives the lowest total cost for premium motor oil, that is, the minimum of the minimum costs.

Therefore, under this criterion, we would choose Quantity 1 as this gives the lowest possible cost of E$78,029.

Maximin

A decision maker that uses the maximin criterion is a pessimist because they will choose the option which maximises the minimum pay-off available. Again, because this decision is based on cost, this criterion will be to select the option which gives the lowest of the highest costs under each option, that is, the minimum of the maximum costs.

The maximum costs are E$103,014 for Quantity 1, E$96,256 for Quantity 2 and E$94,003. for Quantity 3. Therefore, under this criterion, we would choose Quantity 3 because this gives the lowest of the maximum costs.

Minimax regret

A decision maker that uses the minimax regret criterion is often referred to as a “bad loser” because they are concerned about making the wrong decision. Regret (as shown in Table 3) represents the cost of getting the decision wrong. For example, if usage ends up being low, the best option would be Quantity 1 at a cost of E$78,029. If we had chosen Quantity 2, then this would have cost E$8,806 more and if we had chosen Quantity 3, this would have cost E$15,974 more than Quantity 1.

With this decision criterion we want to minimise the maximum regret and would therefore choose Quantity 2. This is because the maximum regret here is an additional cost of E$8,806 which is the lowest of the maximum regrets.