

Advanced Material

This Advanced Material contains a pre-seen case study provided to students prior to the exam date. Students should familiarise themselves with the Advanced Material before they sit the exam. The Advanced Material provides key information and forms the basis of the requirements set out in the exam day materials. Students should carry out research into the sector and apply learning from the workbooks.

Exam: Developing Strategy and Data Analysis

Exam Sitting: June 2024

Advanced Material

Assumed date for Advanced Material is 8th May 2024.

YOUR ROLE: You are a qualified CIPFA accountant working for the Ministry of Transport in the country of Barmina. You have been assigned to a multi-disciplinary review team formed to conduct a detailed strategic review into the ferry services that are an important form of transport between the islands constituting Barmina. The objective is to develop a strategic plan for ferry services for the period 2025 to 2030.

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Exhibit 1 – Background information

Barmina is a small island country in Europe where English is one of the official languages and is widely spoken. It is situated in the Mediterranean Sea between Sicily and Croatia. Although it is part of the Schengen area, Barmina retains its currency - the Barmina dollar (B\$).

Barmina consists of two inhabited islands (the main island, Marlita, and the smaller island of Ardesh) and one uninhabited island (Komino).

- The country's capital - Valuna – is situated on Marlita, a city built on a long peninsula with a large, sheltered harbour on the East side that is used by cruise ships and some container ships. Marlita is heavily populated around the coastal areas particularly in the South, East and North of the island. Marlita's economy is mainly based on light industry, the service sector and retail, with just 25% involved in agriculture (olive and citrus groves, and some vegetable production).
- Ardesh is a smaller island that is less densely populated, with some of the best beaches in Barmina. Over 55% of Ardesh's surface area is farmland with: sheep and goats; olive, lemon and orange groves; and some vegetable production. The main town on Ardesh is Larbat, located in the centre about a 20-minute car journey from the ferry terminal at Jarr.
- The uninhabited island of Komino lies between the islands of Ardesh and Marlita. It is popular with hikers and bird watchers. It has no residents and the island offers no accommodation facilities.

The main hospital – Notre Dame Hospital (NDH) – and the university are near to Valuna on Marlita. There is a hospital on Ardesh with diagnostic and surgical facilities, but residents have to travel to NDH for more complex or acute illnesses – sometimes by emergency helicopter as transfers using ferry services can take at least two hours.

Barmina's economy is heavily reliant on the service sector, especially tourism, luxury yachts and the IT sector, particularly the development of computer games (gaming).

Barmina's Ministry of Transport oversees: the international airport in Farla on the island of Marlita; roads; public transport, including bus and ferry services; and harbours. The Ministry is responsible for legislation, policy and guidance relating to the transport infrastructure in Barmina.

Barmina has no train network so residents and visitors must use bus services, taxis or private cars to move around on Marlita and Ardesh. The islands are linked by ferry services which are detailed in **Exhibit 3**. Most of the residents of Barmina prefer to use their own cars, indeed there are over 40,000 cars for a population of 700,000 people. The land mass is just 450 square kilometres and is densely populated around the coastal areas, so traffic is slow and the volumes are high at peak times.

Barmina is suffering from over-population and high numbers of overseas visitors which impact public transport and road congestion. In particular:

- The high number of cars brings congestion to the roads, inordinately lengthy journey times and a high level of air pollution.
- Infrequent, unreliable bus services are overcrowded, so on some routes people cannot get onto a bus.
- There is no integrated ferry and bus service.
- A large number of younger people have moved to Ardesh as rental costs and house prices are lower than on Marlita, but their need to access schools, work, university and leisure facilities on Marlita is not fully met by existing ferry services.

Exhibit 2 – Organisations involved in the provision of ferry services

Ministry of Transport

Transport Minister – Josefa Borg

Ferry Services Directorate

Operations Director – Simon Carmel

Bus Barmina

Operations Director – Madeleine Schultz

Channel Ferry Services (CFS)

Operations Manager – Marija Farrage

Ardesh Speedy

Operations Manager - Lisa Merrell

Exhibit 3 – Notes on ferry services

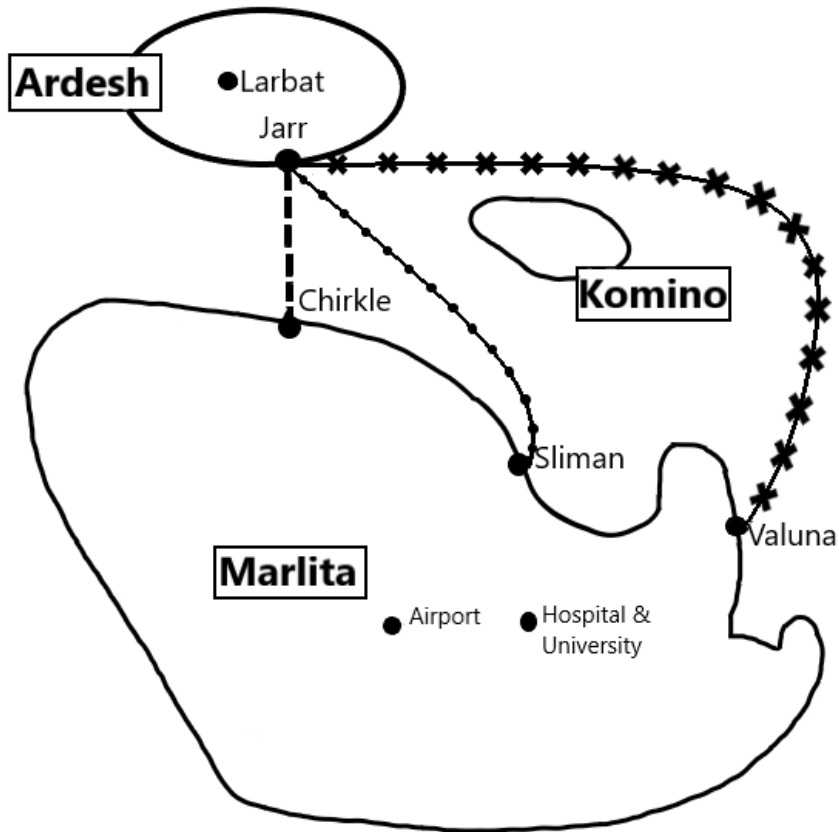
The islands constituting Barmina are linked by ferry services which are regulated by the Ferry Services Directorate within the Barmina Ministry of Transport. Bus services are managed by Bus Barmina which is also part of the Barmina Ministry of Transport.

There are currently two ferry services linking Marlita and Ardesh:

- The main ferry service is a roll on-roll off (ro-ro) service for foot passengers, cars and trucks, operating between Chirkle (on Marlita) and Jarr (on Ardesh).
- There is a small ferry terminal on the East side of the Valuna peninsula (Valuna East) that was built in 2022 using part of a 12 million Euro EU grant. A high-speed catamaran service for foot passengers only operates between Valuna East (on Marlita) and Jarr (on Ardesh).

The EU grant is also financing the construction of a new ferry terminal at Sliman across the bay from the Valuna peninsula on Marlita. The Barmina government intends to provide a high speed ferry service for foot passengers between Sliman and Jarr (on Ardesh) from 2025. The EU grant was awarded as ferry services between Marlita and Ardesh are considered essential transport services.

The diagram below shows the Barmina inter-island ferry routes.



Map Key:

Ro-Ro ferry service for foot passengers, cars and trucks between Chirkle and Jarr	-----
High speed catamaran foot passenger service between Valuna East and Jarr	* * *
PROPOSED high speed catamaran foot passenger service between Sliman and Jarr	• • •

Notes on current ferry routes operating between Marlita and Ardesh:

Chirkle to Jarr

- Roll on Roll off (ro-ro) ferries that transport foot passengers, trucks and cars.
- Operated by Channel Ferry Services (CFS).
- Operates 24/7 throughout the year, usually on a half hourly basis but with additional crossings on weekends and public holidays.
- Able to operate in very strong winds so services are rarely suspended.
- Heavily used by trucks and cars. This can cause congestion on the roads leading to the ferry terminals on both Marlita and Ardesh when cars are backed up waiting for the next ferry. This is particularly problematic in Jarr.

Valuna to Jarr

- High-speed catamarans that transport foot passengers only.
- Operated by Ardesh Fast and Sicilia Ferries, which market the service under the brand name 'Ardesh Speedy'.
- Operates an infrequent service from 9am to 7pm on weekdays and from 9.30 to 5.30 on weekends.
- High-speed catamarans can only operate in light to moderate winds so services are often suspended in the winter months when winds can be strong to very strong.

There are also small boats operating between Chirkle and Komino and between Jarr and Komino, taking tourists and residents who like to hike across the arid island or watch birds. These boats are all privately owned and do not form part of the review of ferry services that has been requested by the government.

The channel between Marlita and Ardesh is also busy with other craft. All vessels are

supposed to keep a specific distance away from each other but this does not always happen. Indeed, on one occasion an Ardesh Speedy catamaran approached dangerously close to a CFS ferry.

Notes about the ferry operators and their vessels

Channel Ferry Services (CFS)

- CFS was formed in 1979 with the mandate: “to maintain, develop, and operate a sea transport service to and from Marlita, Ardesh and elsewhere which, by the carriage of passengers, freight and mail, will serve the national economy and interest of Barmina.”
- CFS has always been required to offer competitive and reasonable prices and comply with the social obligation to enable residents of Ardesh to travel conveniently to work and to university on Marlita.
- CFS is a company which is fully government-owned, with 240 employees who are not unionised.
- CFS has four ro-ro ferries – three are owned by CFS and one is leased from a Greek ferry company.
- In 1990 CFS delivered an average of 27 round trips per day, carried 1.93 million passengers and 370,000 vehicles.
- In 2022 CFS delivered 20,000 round trips in total, and carried 4.1 million passengers and 1.2 million vehicles between the two islands.
- Each CFS ferry has a shop which operates as a concession paying rent, and a café owned by CFS which serves non-alcoholic hot and cold drinks, prepacked sandwiches and pies as well as snacks and chocolate bars.
- Tickets can only be purchased in person using debit/credit card or cash.
- CFS offers ancillary services, such as a courier service which is available on all advertised ferry sailings. All courier charges must be paid before shipment, with

payment made by cash or debit/credit card. Blockchain technology is used for recording the parcels. Parcels are carried securely in a separate container on the ferry.

- There are several fare categories for individuals: Car and driver resident / Car and driver non-resident; Adult resident / Adult non-resident; Child resident / Child non-resident.
- Foot passengers who are residents of Barmina and aged over 65 travel for free.
- There are different fares in place on night ferries for foot passengers and cars and drivers.
- Commercial vehicles have their own fare structure based on the length of the vehicle.
- The fares are agreed with the Barmina government and are fixed for a two-year period. The fares are heavily subsidised by the Barmina government.

Ardesh Speedy

- Ardesh Speedy is the brand name used by a joint venture between Ardesh Fast, a Barmina company, and Sicilia Ferries, a Sicilian company.
- Operations between Valuna and Jarr started in 2019, when Ardesh Fast and Sicilia Ferries operated separate, own-branded catamarans, timetables and fares.
- In May 2022 the two operators agreed to standardise their pricing and operate to one timetable. This agreement occurred when the Barmina government secured the 12 million Euro EU grant, as the service is of public value since it enables residents of Ardesh to easily get to/from work and university.
- The two operators still use their own-branded catamarans even though the service is marketed using one brand name – Ardesh Speedy – because:
 - Ardesh Fast did not want to go to the expense of new livery so soon after setting up the joint venture, and
 - Sicilia Ferries use the catamarans for services from Sicily to Italy and from Sicily to Malta as well as within Barmina

- The service operates from the new ferry terminal on the eastern side of the Valuna peninsula (Valuna East). Nearby residents continuously complain about the levels of pollution as the diesel-powered catamarans emit a lot of fumes on arrival and departure. They are also very noisy.
- There are separate fares for children, adults and residents aged over 65.
- Although the fares are negotiated with the government, the companies do not receive any fare subsidies.
- Tickets can be purchased online or in person using debit/credit card.

Notes about ferry terminals

There are ferry terminals at Jarr on Ardesh and at Chirkle on Marlita, which are used by the CFS ro-ro ferries. The terminals are owned by the government however they have commercial operations inside them: each has booths rented to hire car and tour guiding companies, a shop and a café, plus cash machines.

The terminals have berths for up to three CFS ferries at any one time. There is scope for increasing the number of berths but it would not be practical to have too many ferries plying back and forth across the channel between Marlita and Ardesh.

The Ardesh Speedy catamarans arrive at a different part of the harbour in Jarr, where there is a small terminal building with no facilities other than toilets. The terminal building for the high-speed catamaran in Valuna East is larger, but its only facilities are some toilets.

Exhibit 4 – Terms of reference for the review team

Following a public meeting in Larbat on Ardesh on 24 March 2024 (see Exhibit 5), the Ministry of Transport proposed that a multi-disciplinary team should be established to carry out a detailed and comprehensive review of ferry services as the basis for formulating a strategic plan for ferry services.

This meeting agreed that the tasks of the team would be to:

- Carry out a review of the external environment, especially the demographics of people living on Ardesh and trends in inward migration and tourism.
- Identify and assess current trends and possible innovations in the provision of ferry services.
- Explore how developments in digital technologies and blockchain can enhance the operation of ferry services and the experience of users, and make recommendations.
- Make recommendations for how ferry services should be operated – whether by the Ministry of Transport, by a strategic alliance between the government and private operators or by totally privatised operators.
- Assess the capability of CFS to expand into the operation of high speed ferry services.
- Develop a ferry services improvement plan, to include recommendations regarding connecting bus services.

Exhibit 5 – Feedback from a public consultation on ferry services

In April 2023 the Ministry of Transport commissioned Attard Consulting to conduct a survey of ferry users in order to collect public feedback on current ferry services, namely service frequency, service quality and fares.

The survey was conducted during May to September 2023 by interviewing people as they waited for services in all the terminals at Chirkle and Jarr. Two reports were published in December 2023: one regarding the views of tourists and the other regarding the views of Barmina residents.

The findings of the residents' report indicated that residents had the following needs with respect to ferry services between Jarr and Chirkle:

- Ability to buy tickets online or using an app to avoid having to line up to pay
- Price capping for people making several journeys each week
- Season tickets for commuters.

Respondents also raised concerns about traffic congestion in Jarr as poor bus services mean that residents have to use their cars. Their issues relating to bus services included:

- A need for earlier bus start times on Ardesh
- A need for buses to meet the ferries in Chirkle and in Jarr, to remove long waits for a bus
- More frequent buses along busy routes from Chirkle, especially to Valuna and to the hospital
- The introduction of on-demand minibus services along certain routes, for example from Chirkle ferry terminal to and from the university and the hospital.

By February 2024 public concerns about ferry services resulted in a petition with 5,000 signatures from Ardesht residents being submitted to the Barministry of Transport. A public meeting in Larbat on Ardesht was organised by the Ferry Services Directorate to discuss the situation on 24 March 2024.

Public complaints at the meeting included:

- Congestion on the roads leading to the CFS ferries for cars and commercial vehicles at peak travel times. There were suggestions that commercial vehicles should have ferry services specifically for them operating at specific times of the night and during the day when ferry services are less used by car users.
- The Ardesht Speedy service between Valuna East and Jarr had lost public trust as there are infrequent services, continual changes to schedules and long periods during which there is no service. Services are frequently cancelled due to 'technical problems'. Many workers who rely on the service to get to work are opting instead for the CFS service between Chirkle and Jarr, even though it takes longer, because it is at least reliable.
- Since ferry services exist principally to serve the public rather than for commercial gain, the public sentiment is that steps need to be urgently taken either to remedy the inadequacies of the Ardesht Speedy service or to replace it with a service which can provide a more extensive timetable using catamarans that can operate in more severe weather conditions than currently.

Exhibit 6 – Blog post concerning Ardesh Speedy

MARLIE'S ARDESH TIMES

March 30th 2024

What a joke – the much-heralded tie up between Ardesh Fast and Sicilia Ferries to operate a joint high-speed catamaran service using one timetable, a common fare structure and one brand name (Ardesh Speedy) has fallen completely flat - despite an injection of EU funds from the Barmina government which requires ferry services to provide public value.

At the time of the original announcement back in 2019 a spokesperson enthusiastically said: “Ardesh Speedy combines the expertise and resources of two ferry companies and promises to transform the travel experience for both commuters and tourists”. They said that multiple daily departures would be available to enable residents of Ardesh to easily get to work, school, university and hospital on Marlita and to return home afterwards. Services would run late into the evening for those who work late or who enjoy an evening out after work.

And the reality? The timetable starts later and finishes earlier than before, so not much use for people living on Ardesh who commute to Marlita for work or university. A night out in Valuna? Forget it – you’ll be taking a bus or taxi to Chirkle and getting the regular CFS ferry.

The Ardesh Speedy ferries still take 45 minutes despite the much-vaunted super high speed. They seem to always have operational difficulties and technical problems so services are constantly being cancelled. They don’t operate when sea conditions are even a bit rough – think moderate winds and above.

And how can you promote under one brand name when the vessels have totally different names on them – ‘Ardesh Fast’ and ‘Sicilia Ferries’. Confusing or what? Not to mention totally different standards of accommodation inside them.

Your thoughts? Experiences?

COMMENTS

Ivan: What's the point of setting a 9.45pm service to Valuna if there's no return? I want to meet the genius who plans the schedules.

Joseph: Night shift workers suffer too – not just office workers. But hey, everyone forgets about us.

Johnsie: I cannot understand why we still think people don't stay out after 10pm.

Gil: Why on earth is there a four hour gap in the Sunday morning service from Valuna to Jarr? Don't they think we have friends or family we might want to go over and have lunch with?

Sara: Let's be honest here folks, the merger was a damp squib and they definitely need better marketing.

Exhibit 7 – Email regarding digital technologies in transport services

Email from: Jeff Robbins, Director, Greater Lexing Transport Department, Trylonia

To: Simon Carmel, Operations Director, Ferry Services Directorate, Barmina

Date: 28 January 2024

Hi Simon,

It was a pleasure meeting you at the conference in Bryland on futureproofing public transport services of all types last year.

Firstly, you asked about my experience of the digitalisation of bus services here in Greater Lexing.

As far as bus maintenance is concerned, predictive maintenance enables us to monitor buses remotely rather than solely relying on physical maintenance inspections. The Internet of Things (IoT) would also be beneficial, for example sensors in vehicles which help to predict failures in mechanical/electrical parts. We recently introduced peer to peer connectivity whereby sensors and the internet enabled devices, such as buses and traffic lights, connect with each other.

Buying a bus ticket in electronic form, typically with a dynamic QR code, can be helpful but more and more passengers like to have contactless payment by card or smartphone. 'Tap and go' is increasingly requested when we do surveys of passenger requirements. We've introduced touch cards for payment on buses and also given thought to maybe using cryptocurrency but haven't explored that further as yet.

I was thinking of some things you could do to resolve some of the issues you are experiencing in Barmina about ferries not integrating with bus services. Demand Responsive Transport (DRT) provides services on-demand for passengers using fleets of minibuses that are

scheduled to pick up and drop off people at locations that they choose via websites or apps. Algorithms design the most efficient routing, providing potential passengers with estimated times of arrival. This service is offered in Greater Lexing for an additional fee – it's worth considering.

I was at a transport conference in New York the other week and met a woman from New York Waterway (NYW). They're a private ferry company operating out of ports in New York and New Jersey, carrying over 8 million passengers a year. They're using an Internet of Things-based platform built by Hitachi Data Systems. Each vessel is equipped with surveillance cameras with: remotely-viewable live feeds; two wireless radios; GPS; information display monitors for passengers; a PA system; and sensors that collect data on passenger numbers, weather, speed and direction, fuel use and maintenance needs. There's an app component that enables passengers to buy tickets, view schedules and see route maps online, and allows NYW to track their own buses taking passengers to their ports. The Hitachi system can be accessed by NYW staff and provides a combination of video feeds and data streams from sensors, but also imports external information from public safety systems showing other boats on the water. NYW are also using the system to manage maintenance and repairs, monitor fuel levels and consumption, and collect passenger data. Over time fuel efficiency will improve and maintenance will gain precision as sensors keep track of what pieces of the ferries need fixing. They're saving time and money and almost never have to take a ferry out of service.

Actually, it's a bit like Stena Line who've installed a system to track and monitor ferry passenger comfort and cargo on their services. The sensors and gateways enable IoT nodes and networks to transmit and receive information about the vessel, the cargo and passengers. This data can be used to ensure passenger comfort by monitoring temperature and air conditioning, for example.

And of course in all this I suggest you need a dose of AI: AI can take into account a large number of factors, such as currents, weather conditions, water depth and speed through water



in more combinations than was previously possible to do manually, which is really important for the captain of a ferry.

Best,

Jeff