AICPA & CIMA
Together as the Association of International Certified Professional Accountants

Strategic Case Study Examination

May 2025 – August 2025

Pre-seen material

Leothayre

Context Statement

We are aware that there has been, and remains, a significant amount of change globally. To assist with clarity and fairness, we do not expect students to factor these changes in when responding to, or preparing for, case studies. This pre-seen, and its associated exams (while aiming to reflect real life), are set in a context where current and on-going global issues have 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 current affairs will, of course, be marked on their merits.

Contents

Introduction

Leothayre is a quoted company that provides a range of solutions to customers' needs for small satellites that are generally located in low Earth orbit. Leothayre can assist with the design of the satellites themselves and can support customers in reaching an agreement with providers of launch facilities.

You are a senior manager in Leothayre's finance function. You report directly to the Board and advise on special projects and strategic matters.

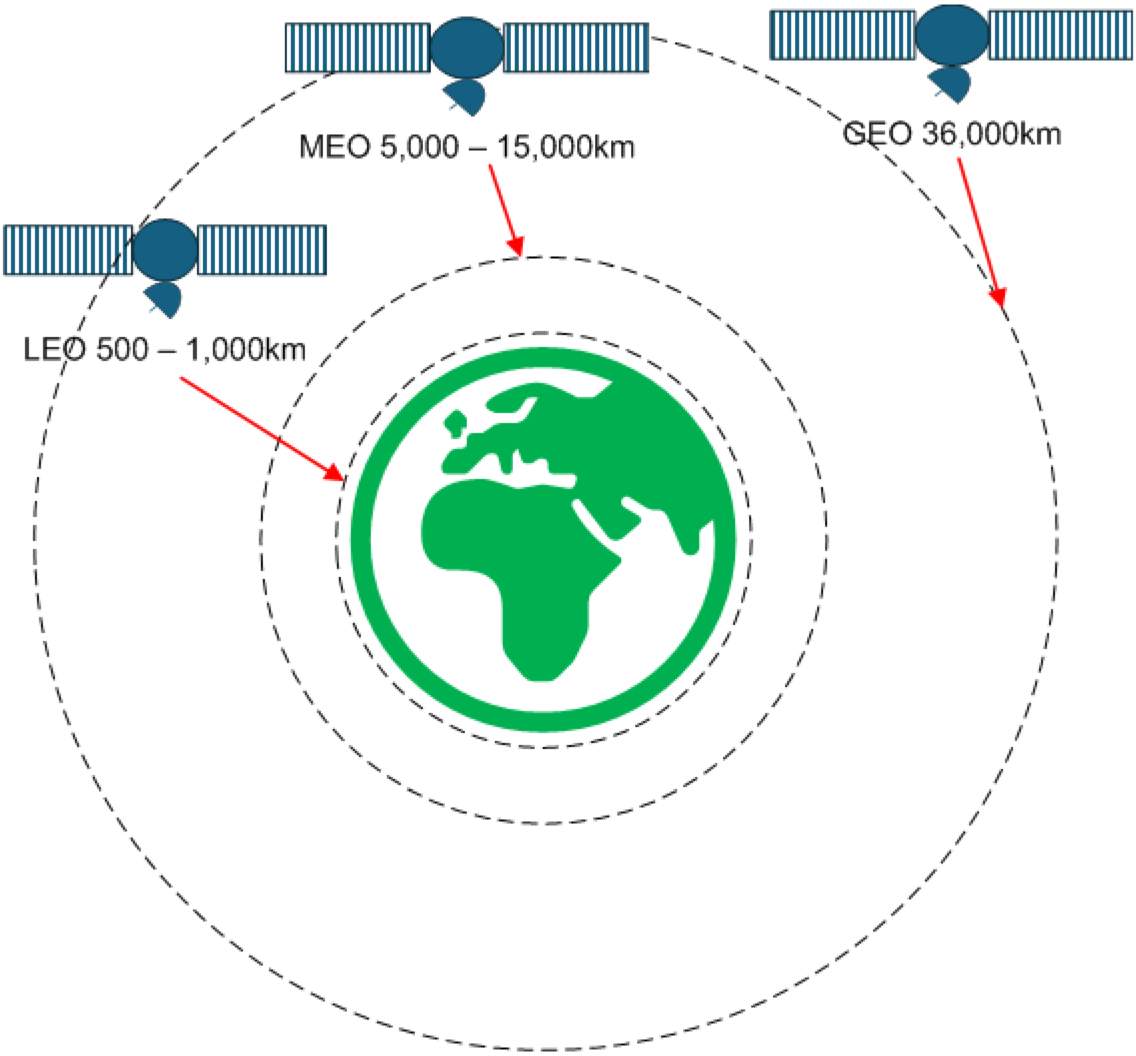
Leothayre's head office is located in Wexland, a developed country that has an active and well-regulated stock exchange. Wexland's currency is the W$. Wexland requires companies to prepare their financial statements in accordance with International Financial Reporting Standards (IFRS).

Satellites

A satellite is an object in space that orbits around a larger object. Satellites can be natural, such as the planets in the Solar System orbiting round the Sun, or they can be artificial, such as communication satellites orbiting round the Earth.

There are approximately 10,000 active satellites in orbit around the Earth. That number is expected to grow significantly over the next few years.

In the past, satellites were almost exclusively large objects that were launched into geosynchronous Earth orbit (GEO). Geosynchronous satellites remain stationary in relation to the Earth's surface because their orbit takes the same 24 hours as the Earth's rotation. They maintain that position because the forces created by the satellite's velocity and the Earth's gravitational pull are in balance. These satellites maintain their positions for a very long time because there is no atmosphere in space and so there is nothing to change their velocity.



Small satellites tend to be launched into low or medium Earth orbit (LEO or MEO). LEO and MEO satellites tend to be non-geosynchronous, which means that they move in relation to the Earth's surface while they orbit. A typical satellite in LEO circles the Earth several times each day. These satellites are often at the very edge of the Earth's atmosphere, which means that they slow down gradually because of atmospheric resistance, allowing gravity to pull them towards the Earth. They descend into thicker atmosphere as their orbits decay, which slows them down still further. Eventually, friction from the atmosphere causes them to overheat to the point where they disintegrate and their fragments fall to Earth.

Small satellites have become increasingly popular. They are cheaper to build and launch than large satellites. Orbiting in low Earth orbit makes communication much easier. Only 12% of active satellites are GEO, 3% are MEO and 85% are LEO.

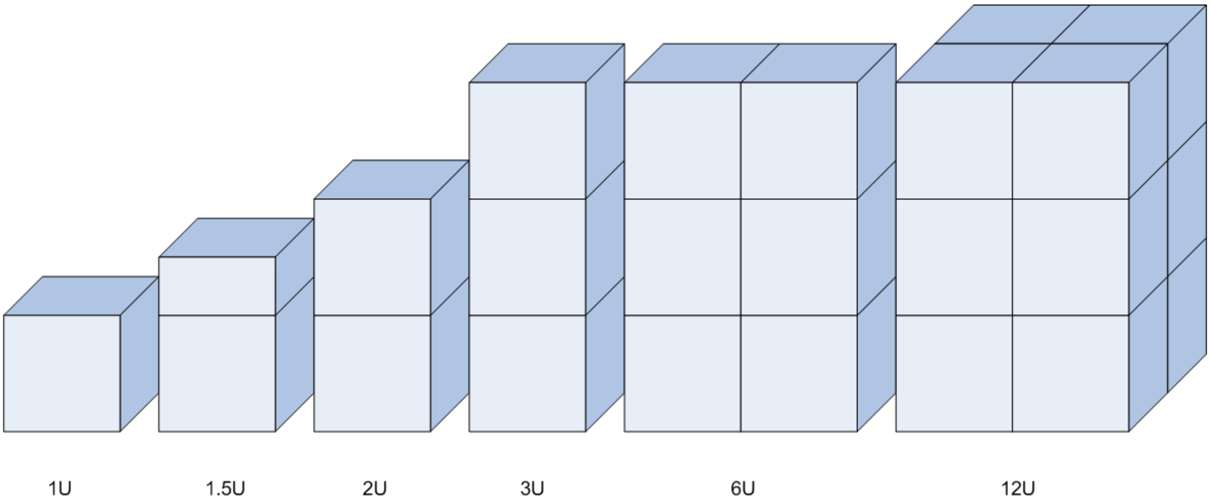
GEO satellites can have a mass of up to 6 tonnes and may be powered by arrays of solar panels that span up to 50 metres.

Satellites can be classified by mass:

Large	>1,000kg
Medium	500-1,000kg
Medium/Small	
Mini	100-500kg
Small	
Micro	10-100kg
Nano	1-10kg
Pico	0.1-1kg
Femto	0.001-0.01kg

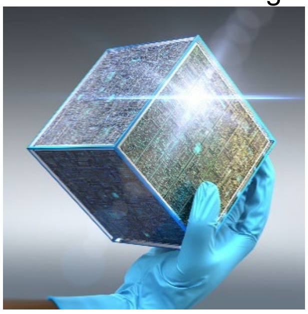
Most recent growth has been in the markets for Nano and Micro satellites.

A class of nanosatellites has been developed called "CubeSats". The standard CubeSat is a cube measuring 10x10x10 centimetres. This is known as a "one unit" or 1U CubeSat. CubeSats can also be designed in 1.5U, 2U, 3U, 6U and 12U sizes and shapes:



The use of standard sizes and shapes makes it relatively easy to adapt launch vehicles and their deployment mechanisms to carry a payload of CubeSats. Most CubeSats are 3U, 6U or 12U.

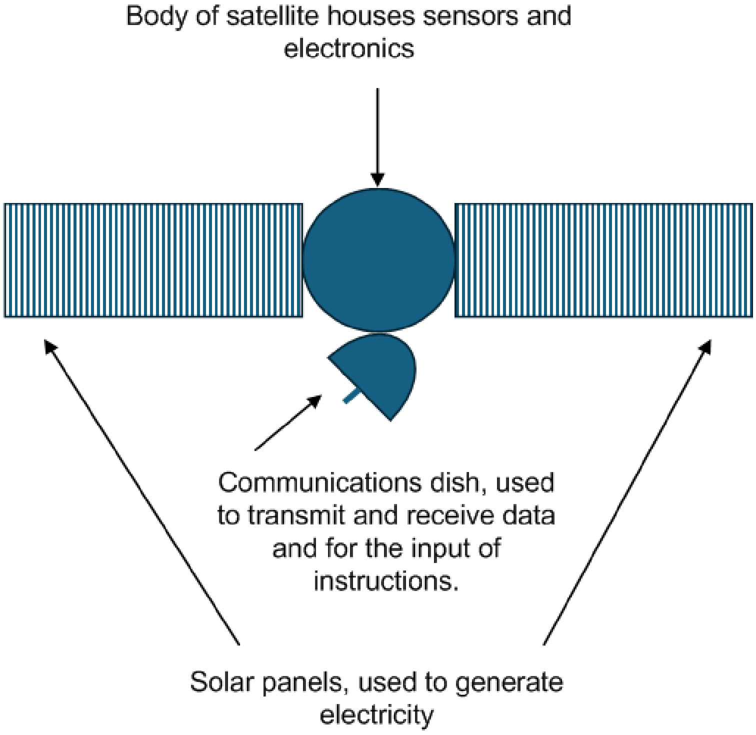
PocketQube is an alternative standard to CubeSat, with satellites measuring 5x5x5 centimetres and weighing less than 0.25kg. That makes it possible to fit 8 PocketQubes into the volume required by a single CubeSat. PocketQubes make it possible for students and hobbyists to build their own satellites and have them launched as part of a larger payload.



Most small satellites are shaped as cubes or cuboids, even if they are not standard CubeSats or PocketQubes. Those shapes simplify the integration of satellites with their launch vehicles and so reduce launch costs.

Small satellites may be powered by batteries or by solar panels attached to their casing, possibly hinged so that more panels can be attached. Care must be taken in designing components to ensure that there will be sufficient power available to complete the satellite's mission. Designs must also allow for the fact that consuming power creates heat, which can damage the satellite and cause components to fail.

Larger satellites, including Micro satellites and above, tend to be more complex:



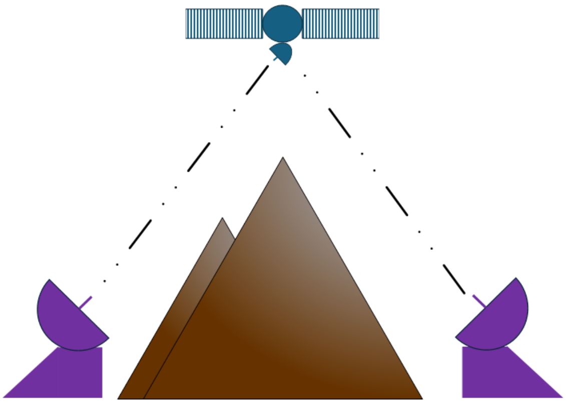
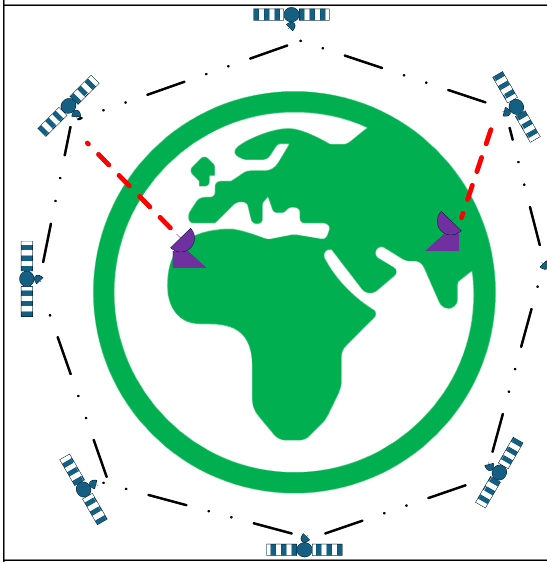
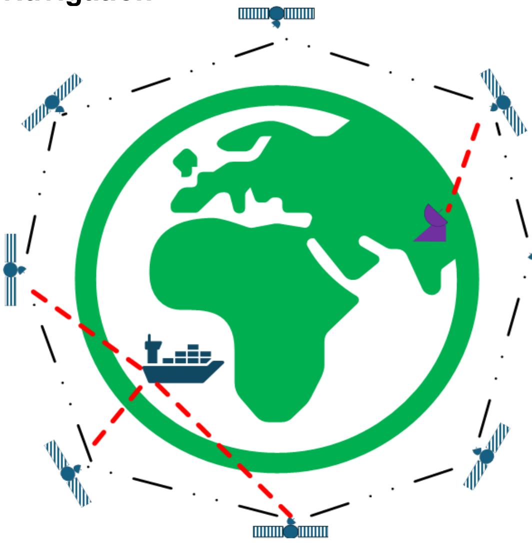
Launching and deploying larger satellites tends to be complicated. Apart from their size and mass, these satellites have delicate external components that can be damaged during launch and deployment.

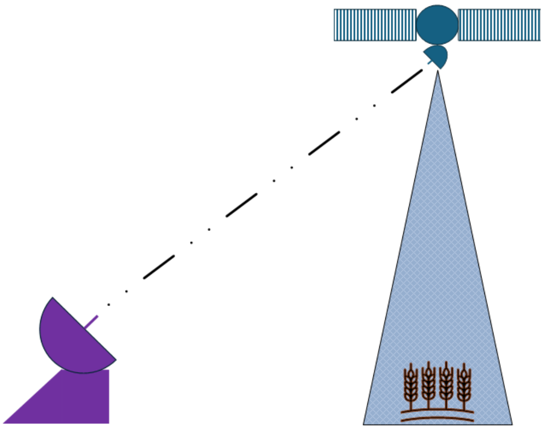
The "wings" that carry the satellites' solar panels are usually folded during launch and will unfold once the satellite has been deployed. They may be motorised so that they can be turned towards the Sun to increase their exposure to sunlight, and so generate as much electricity as possible in order to power the satellite. Any damage to that mechanism could mean that the satellite cannot generate sufficient electrical power to complete its mission.

Medium and large satellites are sometimes fitted with manoeuvring thrusters that can be used to adjust their orbits after launch. These can be used to alter the coverage of sensors or to move the satellite to a new orbit. In some cases, the thrusters are used to bring the satellite back to Earth in a controlled manner if its orbit has started to decay and there are concerns that it will shower a populated area with debris. Small satellites do not have room for thrusters or for the fuel that they require to power them.

Satellite missions

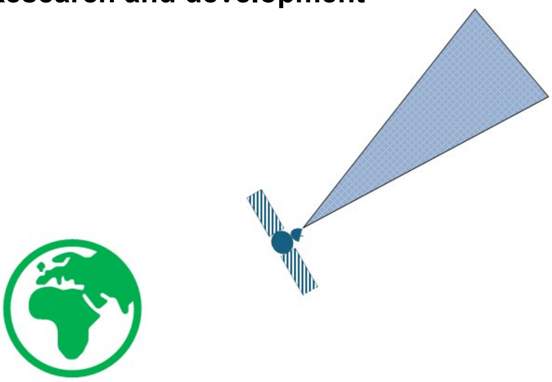
Satellites are used extensively for several different types of mission:

Communications 	Many radio frequencies require a direct line of sight between the transmitter and the receiver. That line of sight can be blocked by terrain or, over longer distances, by the curvature of the Earth. Communication satellites enable the transmission of data between locations that do not have a direct line of sight. Data can be transmitted from a ground station to a satellite, which retransmits the signal to the receiving ground station. Communication satellites can be configured to facilitate any form of communication that relies on radio, including internet and other computer data, telephone calls and television signals.
	Communications can be enhanced by launching constellations of satellites that can communicate with one another, provided they have a line of sight. That could enable a ground station on one side of the Earth to communicate with a ground station on the other side. Messages can be relayed between as many satellites as are necessary to allow for reception. It is possible to create a global communication system by launching a constellation of small satellites into low Earth orbit. Depending on the need for speed of transmission and coverage, constellations can comprise tens, hundreds or thousands of satellites.
Navigation 	Navigation satellites are large and located in geosynchronous Earth orbit. Navigation aids, located anywhere on the Earth's surface, measure the distances to three or more satellites. Software then triangulates these distances to determine a precise location, accurate to within a few feet. Satellite navigation can be used by all forms of transportation, including aircraft, ships, trains and road. Global Positioning Systems (GPS) receivers can even be handheld, for use by pedestrians. Some systems can pass navigation information to ground stations. For example, a shipping company might receive real-time updates on the location of its ships and their speed and direction of travel.

<table>
<tr>
<td>Earth observation
</td>
<td>Satellites in low Earth orbit can be equipped with sensors that detect specific matters of interest. For example, satellites can measure the health of crops by scanning for different light frequencies as they pass over large farms and transmit the results to a ground station. Large farming corporations might launch their own satellites or farmers might pay a satellite operator to scan their fields and deliver regular reports.

The same principle can be used to create satellites that can:

• monitor weather patterns.
• detect forest fires or volcanic eruptions.
• measure atmospheric conditions, including air pollution.
• track the spread of urban development or the extent of deforestation.

In principle, satellites can be used to study almost any such natural or man-made phenomena.</td>
</tr>
<tr>
<td>Research and development
</td>
<td>Satellites can be used to carry out a wide variety of functions in support of pure and applied research and development.

• Satellites can be equipped with telescopes and sensors that can scan deep space, free from the distortion caused by the Earth's atmosphere.
• Satellites can launch experimental space vehicles in order to test propulsion systems that are under development.
• Satellites can create alloys and other materials or manufacture completely spherical ball bearings. Such products can be impaired by gravity when they are manufactured on Earth.</td>
</tr>
</table>

Orbits	The mission determines the satellite's desired orbit. Satellites in geosynchronous orbit can constantly observe or communicate with the same area on the Earth's surface. That can be vital for applications such as communications or navigation satellites. Satellites in non-geosynchronous orbits are constantly moving in relation to the Earth's surface. That means that a single satellite can cover a much larger area, but observation of, or communication with, any given location will be intermittent. If necessary, gaps in coverage can be dealt with by launching constellations of satellites at intervals but into the same orbits. Satellites can be launched into any desired orbit. Polar orbits pass over the Earth's north and south poles. The Earth rotates while the satellites continue their orbits. That means that a satellite can cover different parts of the Earth's surface with each orbit. That could be useful for tasks such as survey missions. Equatorial orbits follow the Earth's equator. Satellites circle the same places on a continuous basis. An orbit's inclination is its angle in relation to the equator. Zero inclination means that it orbits directly above the equator. An inclination of 90 degrees means that it passes over the north and south poles. Orbits can be set at any inclination between 0 and 90 degrees. The Earth's gravitational pull is greater at lower altitudes, which means that a satellite must maintain a higher velocity in order to remain in orbit at lower altitudes. A satellite orbiting at 700 kilometres above the Earth's surface will travel at 28,000 kilometres per hour and will take 100 minutes to orbit the Earth. At 36,000 kilometres, a satellite travels at 11,000 kilometres per hour and takes 24 hours for each orbit.

Ground stations

Regardless of their size, most satellite missions require some form of communication with operators on the Earth. That communication requires apparatus that can transmit or receive signals to or from specific satellites.

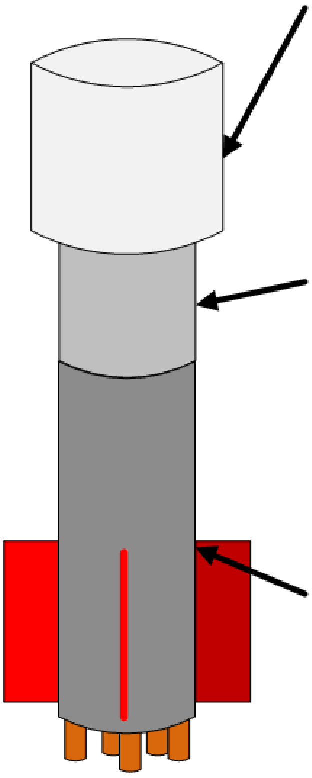
The facilities that are used to provide contact are called "ground stations". These vary enormously in size and complexity. The largest consist of arrays of satellite dishes that can handle large volumes of data and also have the power to send and receive signals to and from distant satellites in GEO.

Ground stations can be built into vehicles and used to provide mobile satellite communications. For example, a television broadcaster might use a truck equipped with a dish and communications equipment to transmit live video via satellite from a sports event back to the studio from which it will be retransmitted to viewers.

Satellite antennae can be small enough to be built into portable devices, including satellite dishes, supporting equipment that can be carried in a backpack and handheld Global Positioning System receivers that enable users to navigate accurately.

The manner in which users will interact with satellites and the capability of the equipment that they are expected to use will be taken into account in the satellite's design and the planning of its mission. For example, it might be sufficient to place a CubeSat in LEO to provide temporary internet access for engineers working at a remote building site for the duration of the satellite's life.

Launching satellites



Payload bay

The payload is the object or objects (frequently satellites) being carried by the rocket. Carrying the payload to the desired orbit is the rocket's purpose. The payload bay stores and protects the payload for the duration of the rocket's flight through the Earth's atmosphere.

The payload bay also contains the equipment required to push the satellites free from the rocket and into their intended orbits.

Second stage / final stage (assuming a two-stage rocket)

The final stage carries the payload bay to the point where the satellites that it carries are released into orbit. The final stage contains rockets, fuel and the electronics that provide the rocket's guidance and control systems.

This stage is much smaller than the first because the rocket is much lighter after the first stage has been jettisoned.

The final stage remains attached to the payload bay, allowing it to manoeuvre in orbit and enabling it to drop out of orbit after the payload has been released.

First stage

The rocket's first stage contains rocket motors and fuel. These are used to carry the rocket from the launch pad to the upper atmosphere.

Once the rocket reaches its planned separation point, the first stage is jettisoned and it falls back to Earth.

Satellites are launched into orbit using rockets which vary in size and maximum payload. Some rockets can carry a single large satellite, while others may carry multiple medium-sized satellites or many small satellites. There are several standard models of launch vehicle in operation. These can be adapted to carry different payloads. If a rocket has spare capacity, then it can be used to launch additional satellites. Alternatively, it may be necessary to load ballast, such as concrete blocks, to balance the rocket and ensure a successful launch.

Satellite launches require careful planning to ensure that the rocket releases its payload at a precisely determined point in space, with the correct velocity and orientation. Any error in velocity will affect the satellite's orbit and could result in it falling back to Earth. If the orientation is incorrect, then the satellite's sensors may be pointed out to space instead of towards the intended location on Earth. Incorrect orientation could also prevent solar panels from collecting sufficient light to produce power or could prevent clear communication with users.

Launches require complicated mathematical calculations that take account of gravity and the Earth's movement as it rotates on its axis and follows its own orbit around the Sun.

Rockets require launch sites that have the necessary infrastructure in place for assembly and launch. The launch site will also be selected to take account of the satellite or satellites that will comprise the rocket's payload.

In order to reach orbit, a rocket must achieve sufficient altitude to escape the Earth's atmosphere. The rocket must also achieve sufficient horizontal velocity to avoid being dragged back to Earth by gravity.

One way to boost a rocket's horizontal velocity is to launch in an easterly direction and from as close to the Equator as possible. The Earth rotates from west to east, so a rocket launched in that direction will benefit from the velocity provided by that rotation. The Earth's circumference is longer at the Equator, which means that launching towards the east from the Equator will maximise that benefit.

It is possible to launch rockets in a westerly direction or from a launch site that is closer to either of the Earth's poles, but that will require additional power. If the rocket requires additional fuel to reach orbit, then it will have less lifting capacity for satellites. It may then become necessary to incur the expense of using a larger rocket.

The location and direction of launch also determines the area into which debris and gasses created by the rocket will return to Earth. Large rockets often have external fuel tanks or booster rockets that are jettisoned during the flight. They may also be separated into two or more stages or sections. The first stage contains a large rocket motor and fuel tanks. The stage breaks away and falls to Earth when the fuel is exhausted during the initial launch phase. The rocket in the second stage then ignites and provides propulsion for the next phase and so on, until the rocket reaches its intended altitude.

Spaceports are launch sites that serve large rockets. Most are located so that the risk of injury or damage to property is minimised, with large items of debris being dropped into expanses of ocean or uninhabited desert and kept clear of aviation flight paths.

Prevailing weather must be considered when selecting locations for spaceports. High winds can affect a rocket's trajectory while it is in flight, especially during the first few seconds after launch. Local temperatures can also be an issue. It could, for example, be dangerous to fuel a rocket on its launch pad in conditions of extreme heat or cold.

Spaceports must also be accessible to operators. There is very little point in locating a spaceport in an area that has inadequate transport links for the delivery of parts, rocket fuel and payload. There is also very little point in locating in countries that are politically unstable or that have unsupportive governments.

Leothayre

Leothayre was founded in 2004 and was quoted on the Wexlandian stock exchange in 2017. The company provides a complete satellite service for clients, specialising in small satellites from 1kg to 75kg. It provides a complete service to its clients, starting from an initial consultation, continuing through to the launch and operation of the satellite, satellites or satellite constellation.

- Leothayre's engineers have the necessary knowledge and experience to analyse the client's mission and recommend suitable solutions. The mission determines the sensors that the satellite must carry and sustain. That has implications for the size of the satellite and the cost of launching it into orbit.
- Leothayre's workshops have the staff and equipment that are required to design and build small satellites. This is a specialised area. For example, all components must be certified as suitable for space. Components that are robust and reliable on Earth can quickly deteriorate because of the vacuum in space. The build must survive the launch and deployment and any moveable parts, such as hinged solar panels and antennae, must operate reliably in zero gravity.

  Satellites must be thoroughly tested before launch to ensure that they will operate reliably once in orbit. Leothayre has extensive test facilities that can test for the effects of vibration, extreme heat and cold and vacuum.
- Leothayre does not operate its own rockets, but it has close working relationships with several launch providers. It can negotiate launch slots on behalf of clients, ensuring that satellites will be placed in the correct orbit in time to meet client deadlines. Alternatively, clients can request completed satellites to be delivered to them so that they can make their own arrangements for launching.
- Leothayre can provide ground stations that can control the mission once satellites are in orbit. These are required to send instructions to satellites and to gather data collected by their sensors. Leothayre owns and operates its own ground stations and can organise additional support from third parties for missions that require specialised equipment.

A typical mission takes 12 to 18 months from initial consultation to launch. Repeat builds can be quicker, taking as little as 4 to 6 months. The company has developed a basic satellite body called Leothayre Standard, which is basically a CubeSat that can be supplied in 3U, 6U and 12U configurations. The design incorporates solar panel arrays and can be adapted to accommodate almost any type of sensor specified by the client. It is quicker to adapt a Leothayre Standard to meet a mission's requirements than to design a satellite from scratch.

Leothayre has successfully launched 64 satellites, all of which were designed and manufactured by the company. It also has a substantial number of orders awaiting fulfilment. The company has made sales to clients in several different countries, thanks in part to its excellent reputation for meeting deadlines and achieving mission objectives.

Extracts from Leothayre's annual report

Leothayre's mission, vision and values

<u>Our mission</u>

Leothayre's mission is to lead in the creation and operation of satellites that meet the needs of clients for space-based facilities.

<u>Our vision</u>

Leothayre's vision is to provide space-based facilities that can enhance the quality of life on Earth.

<u>Our values</u>

- Leothayre chooses excellence in all decisions.
- Leothayre constantly innovates, anticipating client needs.
- Leothayre insists on fairness and respect in the workplace.
- Leothayre develops and maintains strong relationships with its clients.
- Leothayre acts with integrity and never promises more than it can deliver.

Leothayre's Board of Directors

Fatma Ayoub, Non-Executive Chair

Fatma is an electronic engineer by training. She spent 20 years working for a major car manufacturer, initially in manufacturing and latterly in research and development. She left the manufacturer to take up the role of Head of Education with the Wexland Faculty of Engineers. She was subsequently promoted to Chief Executive of the Faculty. She now combines her position on Leothayre's Board with a visiting lectureship in electronic engineering at Capital University.

Fatma was appointed as Leothayre's Non-Executive Chair in 2022.

Dr Robert Suwaj, Chief Executive Officer (CEO)

Robert has a doctorate in mechanical engineering. He was one of the first appointments when Leothayre was founded in 2004. He has remained with the company since then, being promoted to the Board as Operations Director and further promoted to CEO.

Robert was promoted to Leothayre's Board as Operations Director in 2019 and was further promoted to CEO in 2023.

Min-Chieh Tseng, Operations Director

Min-Chieh has a Master of Engineering degree in aeronautical engineering. She spent several years working as a project manager for a quoted aerospace company. During that time, she supported the development of an updated version of the company's airliner. She joined Leothayre to support the development of systems and mission management software. Min-Chieh is now responsible for all aspects of scheduling and liaising with third parties in order to ensure that production facilities are available and arrangements for launches are in place.

Min-Chieh joined Leothayre's Board as Operations Director in 2021.

Dr Alex Mhando, Technology Director

Alex has a doctorate in aeronautical engineering. He worked for Wexland Spaceport for 6 years after graduation. During that time, he focussed on the assembly and launch of rockets. He joined Leothayre as a mechanical engineer, focussing on the integration of satellites with their launch vehicles. Alex is now responsible for the oversight of all aspects of the design and manufacture of satellites.

Alex was appointed to Leothayre's Board as Technology Director in 2022.

Gamze Elmas, Chief Finance Officer (CFO)

Gamze has a degree in banking. She spent much of her career to date working for a major international bank, specialising in negotiating loans for high technology startups. She joined Leothayre as a senior financial manager to support the management of the company's cash flows and the funding of expansion.

Gamze joined Leothayre's Board as CFO in 2020.

Mark Jones, Marketing Director

Mark has considerable experience of aerospace sales. He had a junior administrative role in the Sales Department of a major aircraft manager. He demonstrated considerable talent and was promoted through various levels until he was appointed a senior sales manager. His responsibilities included heading the Sales Team responsible for the sale of cargo aircraft to logistics companies.

Mark joined Leothayre as Marketing Director in 2021.

Professor Alice Alves, Senior Independent Director

Alice had a career in academia, teaching and researching economics at Capital University. Her research interests included environmental studies and the tracking of urban expansion. Her academic publications included studies that have made use of data provided by Leothayre clients.

Alice joined Leothayre's Board as Senior Independent Director in 2022.

Kawin Dhanakoses, Independent Non-Executive Director

Kawin had a career in politics, including several years as a member of Wexland's parliament. During that time, he took an active interest in industry and science. He sat on a number of parliamentary committees, including the committee responsible for an investigation into the potential environmental impact of Wexland Spaceport before permission for its construction was granted.

Kawin retired from politics in 2020. He joined Leothayre's Board as an independent non-executive director at that time.

Manal Al-Ramli, Independent Non-Executive Director

Manal worked for a major quoted civil engineering company, starting as a surveyor and rising to a seat on the company's Board as Director of Operations. She has retired from full-time employment. She combines her seat on Leathayre's Board with a directorship of Eastown College, a further education college.

Manal joined Leothayre's Board in 2020.

Board responsibilities

Robert Suwaj Chief Executive Officer			
Min-Chieh Tseng Operations Director	Alex Mhando Technology Director	Gamze Elmas Chief Finance Officer (CFO)	Mark Jones Marketing Director
• Liaison with launch partners • Health and safety • Human resource management	• Research and development • Satellite design • Manufacture of satellites	• Financial reporting • Management accounting • Treasury	• Sales and customer relations • Public relations

	Board committees			
	Audit	Risk	Remuneration	Nomination
Fatma Ayoub Non-Executive Chair	♦	♦		♦
Alice Alves Senior Independent Director	♦		♦	♦
Kawin Dhanakoses Independent Non-Executive Director	♦	♦	♦	
Manal Al-Ramli Independent Non-Executive Director		♦	♦	♦

Leothayre's Chief Internal Auditor reports to the convener of the Audit Committee.

Leothayre's Principal Risks

Risk impact	Risk mitigation
Leothayre is a young business that competes in a relatively young and developing industry. It is difficult to forecast future growth with any confidence.	The Management Team pays close attention to the maintenance and improvement of internal reporting systems. These are updated to ensure that they are consistent with business processes. The Management Team pays close attention to changes in the market for satellites and also for launch and mission services.
The regulatory framework of the space industry is changing constantly. It could change significantly before agreed regulations are enforced.	Leothayre takes great care to comply with all applicable regulations. The Management Team plays close attention to ongoing developments and works with government agencies and other regulators to shape the future development of regulation.
Satellites can fail before their missions are completed.	Leothayre's satellites are tested extensively during construction, using apparatus that can simulate the conditions that will be encountered at the time of launch and during their exposure to conditions in space. Ownership of satellites is transferred to customers at the time of delivery to the launch site. Customers bear the risks of satellite malfunction during launch and in orbit, unless it can be demonstrated that there was negligence in construction.
Leothayre is heavily dependent on suppliers for the delivery of components and assemblies. Any delays could threaten mission plans.	The company is working to keep as much fabrication work in-house as possible.
Leothayre depends heavily on a small number of clients to maintain revenues and profitability. The loss of a client or any adverse change in a client's performance could prove harmful.	The company works closely with clients to ensure that their needs are kept under constant review. Staff working on contracts are expected to pay close attention to progress and to address any potential overruns as a matter of some urgency.
Various macro-economic factors can have a significant impact on business. These include political uncertainties that might affect the ability of government agencies to invest in space missions and economic uncertainties, including exchange rates that might affect costs and revenues when they are converted to W$.	Leothayre pays close attention to global and regional developments that might affect its business. Clients are expected to make stage payments when satellites reach agreed points in construction. The company has an active Treasury Department that is responsible for the active and passive management of currency risks.

Leothayre Group
Consolidated statement of profit or loss
for the year ended 31 March

	2025 W$ million	2024 W$ million
Revenue	1,782	1,683
Operating costs	(1,126)	(1,155)
Operating profit	656	528
Finance costs	(450)	(350)
	206	178
Tax expense	(31)	(27)
Profit for the year	175	151

Leothayre Group
Consolidated statement of changes in equity
for the year ended 31 March 2025

	Share capital W$ million	Retained earnings W$ million	Total W$ million
Opening balance	800	3,580	4,380
Profit for year		175	175
Dividend		(65)	(65)
Closing balance	800	3,690	4,490

Leothayre Group
Consolidated statement of financial position
as at 31 March

	2025	2024
	W$ million	**W$ million**
Assets		
Non-current assets		
Property, plant and equipment	7,770	6,885
Goodwill	1,100	1,100
Other intangible assets	428	388
	9,298	8,373
Current assets		
Inventory	147	138
Trade receivables	14	12
Bank	551	346
	712	496
Total assets	10,010	8,869
Equity		
Share capital	800	800
Retained earnings	3,690	3,580
	4,490	4,380
Liabilities		
Non-current liabilities		
Borrowings	4,500	3,500
Current liabilities		
Trade payables	986	964
Tax liability	34	25
	1,020	989
Total equity and liabilities	10,010	8,869

Extract from competitor's financial statements

Orbalinc is a direct competitor to Leothayre. It competes for the same contracts and has been in business for slightly longer.

Orbalinc's head office is located in Wexland.

Orbalinc Group
Consolidated statement of profit or loss
for the year ended 31 March

	2025	**2024**
	W$ million	**W$ million**
Revenue	2,566	2,272
Operating costs	(1,667)	(1,575)
Operating profit	899	697
Finance costs	(500)	(470)
	399	227
Tax expense	(64)	(36)
Profit for the year	335	191

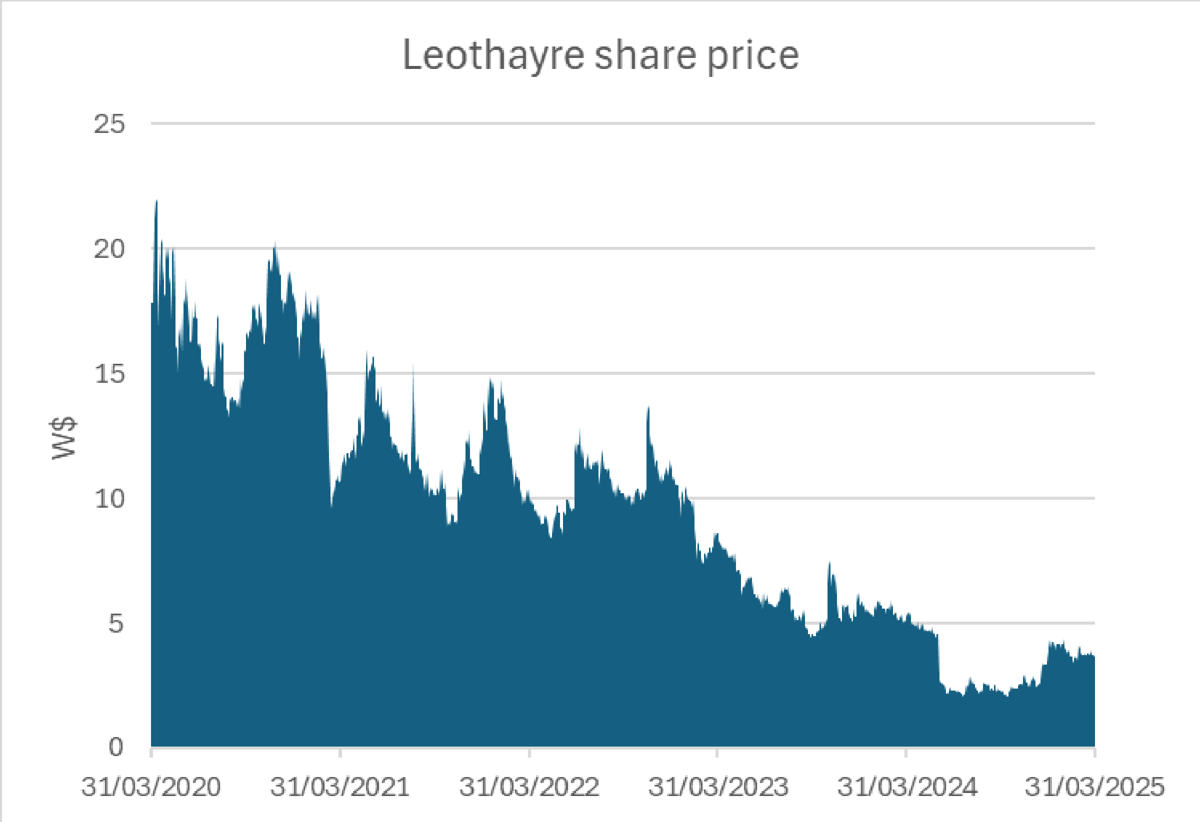
Orbalinc Group
Consolidated statement of changes in equity
for the year ended 31 March 2025

	Share capital	**Retained earnings**	**Total**
	W$ million	**W$ million**	**W$ million**
Opening balance	1,000	3,990	4,990
Profit for year		335	335
Dividend		(85)	(85)
Closing balance	1,000	4,240	5,240

Orbalinc Group
Consolidated statement of financial position
as at 31 March

	2025	2024
	W$ million	**W$ million**
Assets		
Non-current assets		
Property, plant and equipment	8,741	8,424
Goodwill	1,200	1,200
Other intangible assets	612	526
	10,553	10,150
Current assets		
Inventory	115	107
Trade receivables	22	18
Bank	629	557
	766	682
Total assets	11,319	10,832
Equity		
Share capital	1,000	1,000
Retained earnings	4,240	3,990
	5,240	4,990
Liabilities		
Non-current liabilities		
Borrowings	5,000	4,700
Current liabilities		
Trade payables	1,012	1,108
Tax liability	67	34
	1,079	1,142
Total equity and liabilities	11,319	10,832

Share price history



Leothayre's beta is 1.15.

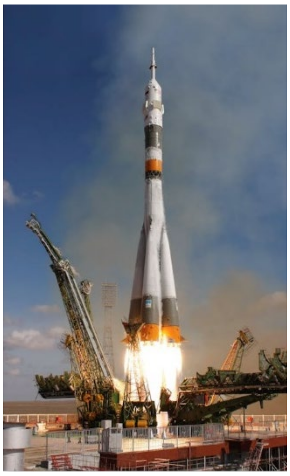
News stories

Happy Comic

Readers' questions

Question: How many stages does a rocket have?

Max, age 9



Answer: Most of the rockets that are used to launch satellites into orbit have two stages. The first stage must be powerful enough to carry the rocket and its payload through the thickest part of the Earth's atmosphere.

The first stage can either be a large rocket, with the second stage and payload stacked on top, or it can take the form of booster rockets attached to the side. The first stage will normally burn for 2 minutes, after which it will separate and leave the second stage to ignite and carry the payload into orbit.

The second stage can be smaller than the first because the rocket will be lighter after the first stage has consumed its fuel and separated. There will also be less drag because the atmosphere will be thinner at higher altitude.

The stages are large. They fall back to Earth once they have burnt their fuel and detached themselves from the rocket. The second stage might spend some time in orbit before it returns, depending on its speed and direction of travel after its satellite payload has been deployed.

Question: Rockets always look really tall in photographs. How tall are they and how do they get something that big to the launch platform?

Matilda, age 11

Answer: The average height of a rocket that can reach low Earth orbit is 58 metres. The average weight of such a rocket is just over 1,000 tonnes, including its payload and the fuel required for the launch.

Most rockets are too large to be transported in one piece to the spaceport from which they will be launched. They are usually delivered to the site in stages or sections that can be stacked and assembled vertically in an assembly building close to the launch platform. The payload of satellites is then loaded.

The rocket is assembled on a moveable platform that can be rolled, with considerable care, to the launcher. The rocket is fuelled and made ready for launch. The whole process of final transportation and launch depends on the weather, particularly wind speed.

Question: Are rocket launches bad for the environment?

Vijay, age 12

Answer: Rocket launches look spectacular, but there is a reason for that. Most of the mass in a rocket that is sitting on the launch pad is in the form of fuel. The fuel has to burn rapidly in order to create massive amounts of thrust from the rocket engines. That creates large quantities of greenhouse gasses and soot.

The pollution created by rockets is potentially more harmful than that from other sources because rockets deposit these harmful materials in the upper atmosphere, where they cause a disproportionate amount of damage.

Some rockets jettison stages before all of their fuel has been burned. That can lead to clouds of toxic vapour falling to Earth, potentially harming plants, animals and people over a wide area.

Remember that CubeSats are usually added to rocket payloads, alongside the large satellites that are the primary purpose of the launch. The space industry launches as many satellites as possible. A large rocket can carry up to 30 CubeSats so any damage to the environment should be evaluated on the basis that several missions might be launched at once.

Question: What happens to old satellites after they stop working?

Francine, age 11

Answer: That is a very important question. Satellites can remain in orbit for many years, even those in low Earth orbit. Everything in orbit travels at immense speed, which means that even a small part that breaks away from a satellite or that is jettisoned in orbit during launch can destroy an operational satellite. Collisions between satellites can cause both to break up and leave lots of fragments in orbit. Collisions are rare, but they do happen and the likelihood increases as the number of items in orbit rises.

The most serious problem with old satellites is that they often contain batteries or fuel that can explode, breaking them into small pieces and making the problem of "space debris" or "space junk" even more serious. It is estimated that 10-15 large items break up in orbit every year.

It is possible to design satellites so that they fall out of orbit at the ends of their lives. Unfortunately, that increases both construction and launch costs significantly.

Wexland Business News

Central City University's space-rating degree is out of this world

Central City University has announced the provision of a new MSc degree in space construction. The new degree is intended primarily to support the needs of the growing satellite construction industry for engineers who can design and build devices that can survive and operate reliably in orbit.

Building satellites requires advanced engineering skills, which is hardly surprising given that they must survive the rigours of being launched into orbit and function perfectly after being deployed. Once in orbit, they must operate in microgravity, which can affect the operation of mechanical devices. They are also exposed to huge temperature changes if their orbits take them into and out of direct sunlight, with no protection from the Earth's atmosphere. Being outside the atmosphere also leads to the exposure of electronic components to potentially destructive cosmic rays.

The failure of a single component can be sufficient to cause a satellite to fail and bring its mission to a premature end. Even the simplest item can pose a risk. For example, fasteners, such as screws and nuts and bolts, must be made from metals that can withstand the vacuum of space. Metals that are not space-rated can deteriorate and disintegrate far more quickly in orbit than they would on Earth.

Satellite manufacturers specify space-rated products when they order components and materials. They also subject assemblies to vibration and vacuum tests at various stages of the build. The pace of development makes it difficult to be certain that nothing will go wrong once the satellite reaches orbit.

Wexland Daily

Will it rain on my farm within the next 90 minutes?

Farmers pay close attention to the weather for all sorts of reasons. A prolonged heat wave or period of constant rain can affect the growth of crops and the profitability of their farms. Weather forecasts provided by the Wexland Met Office are freely available online or from print and broadcast news reports. Unfortunately, these do not always reflect the very latest conditions and may not be sufficiently localised to be certain what that day's weather will be on the farm.

Some activities require much more precise weather forecasts than can be obtained from the Wexland Met Office. For example, a rain shower during the harvesting of a crop can affect the moisture content of the grain and might reduce its selling price. Large farming corporations often pay for localised weather forecasts from satellites in low earth orbit. Those forecasts can provide accurate weather forecasts that enable decisions to be taken with confidence. Delaying the harvest by 12 hours might improve the farmer's yield.

Farmers are not the only ones who require personalised weather forecast. Builders might obtain one before they pour concrete foundations for a major construction project. Oil companies have satellites check the weather at sea before committing to towing an oil rig to a new site.

Wexland Business News

Wexland's Government signs "Space Junk Charter"

Wexland's Government has become the latest to sign the "Space Junk Charter". Signatories agree to commit themselves to make their best efforts to encourage the responsible use of space.

The Charter does not have the backing of law. Legislation would be difficult because governments have no jurisdiction in space, even in low Earth orbit.

The charter does offer standards that companies involved in the construction and launch of satellites are encouraged to adhere to:

- The final stage of the launch vehicle will be designed to remain intact, with no detachable parts left in orbit during satellite deployment.
- The trajectory of the final stage will result in it falling out of orbit shortly after deployment of the payload. The final stage will be designed to disintegrate harmlessly during its return to Earth.
- Satellites will be designed to minimise the risk of explosion of batteries, fuel and any other volatile payload.

Space junk is a problem. There are approximately 35,000 objects measuring 10cm across in Earth orbit and 950,000 objects between 1 and 10cm.

It is estimated that there are 10,000 operational satellites in orbit, but that number is expected to increase to 70,000 over the next decade. That growth can be attributed to reductions in launch costs and increasing numbers of applications for satellite technology.