Chartered Institute of Management Accountants

CIMA

May 2017 Operational case study examination

Pre-seen materials

Ashworth Lea

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Job Description

You are one of two Finance Officers for Ashworth Lea. Your main role is to support the Senior Management Accountant although you may be asked to assist other finance staff if the need arises. You will be involved with the production of the annual budget, producing the monthly management accounts and providing information to management as required.

Company Background

Ashworth Lea is a producer of high quality prestigious motor cars. Its origins stem from the initial friendship and subsequent partnership of Robert Ashworth and Andrew Lea in the early part of the 20th century. The production plant is located in Midfield, a town in the country of Mayland.

Robert Ashworth, a railway engineer by profession, decided to turn his hand to designing and building the increasingly rapidly developing phenomena - the motor car.

Concentrating initially on the engineering and production of the cars, he established a good reputation and achieved early success, selling all the production he could make to customers in the local area. His motor cars were judged to be well engineered, well made, reliable and practical vehicles. It was this early success which gave him the ambition to expand production and put the business on a more commercial footing.

He quickly realised that a key element in his expansion plan was promoting and selling the attributes of his motor cars, which were built to a high standard and known for their reliability. This led him to seek the assistance of one of his lifelong friends, Andrew Lea, whose background was in pharmaceutical sales. Andrew was keen to take the opportunity to be involved in the rapidly developing motor car industry and together they developed product and sales strategies that would take the company successfully through many years.

The company was consistently associated with high quality, premium priced, low volume production, and established a reputation for its range of sports touring cars. This enabled the company to establish a reputation as a ‘niche’ producer with worldwide sales.

Vehicles with the ‘Ashworth Lea’ badge became desirable collectors’ items and were favoured by contemporary film producers. They featured as prominent ‘stars’ in many highly successful films.

Ownership of the company has passed down through the families of Ashworth and Lea, although this has become diluted over the years due to a number of factors. Some family members have moved on to pursue other business interests and two large investors have taken a stake in the business.

Around 30 years ago, the business almost failed. It had not developed any new models for a number of years because of a lack of contemporary design expertise. For a while it was able to survive off its reputation and customer loyalty, but eventually sales began to decline. This combined with outdated production facilities and increasing costs threatened the existence of the company.

It was saved by a large mass producer of vehicles, DOM, who at the time was keen to promote its association with a ‘quality manufacturer’, and took a 60% stake in the company. This led to a substantial investment in a new production facility and provided much needed investment in new vehicle designs and engines. It also resulted in an increase in promotional activity, particularly in the sponsorship of a racing team. The support provided was invaluable at such a crucial point in the development of the business.

The company was eager to stress at the time that the more modern production facility had not changed the original vehicle build philosophy, of 'hand built cars' using the highest quality materials, and that the reputation of the 'marque' would be maintained.

More recently DOM, after another change in its corporate policy, has sold the majority of its stake to the industrial investment conglomerate INV group. This leaves ownership split three ways. The families of the original owners with 40%, DOM 15%, and INV group 45%.

Company Operations

Over recent years, the company has concentrated on production of three different models the Regent, Regale and Royale. The Regent is a strictly two seat sports roadster, the Royale a larger four seat two door model and the Regale, the largest of the range, a four seat, four door model. All models come with a choice of either a V8 or V12 petrol (gasoline) engine, ensuring their credentials and reputation as powerful, sporty and exclusive.

All production takes place in the Midfield production plant, occupying an area of 25,000 sq. metres. It also accommodates the assembly facilities with 650 staff, the marketing and administrative functions with 450 staff and the design facility with a staff of 75.

A large proportion of the staff and production workers have worked for the company for many years. The company apprenticeship scheme is always considerably over-subscribed as the company is perceived locally as an excellent and prestigious employer. There is great pride among the workforce in the design and production skills that have been built up over the years and which are recognised around the world. As a result, the workforce is highly motivated.

Vehicle production is a highly skilled assembly process which takes an average of 250 hours per vehicle, 50 hours of which is taken up with painting and body preparation.

Production for each vehicle is centred on a single work station for each car, which remains in the same location in the factory during the vehicle build process. The car body is made up of separate aluminium body pressings which are supplied by a local, well established and reputable, pressing company, APC.

The largest pressing, the underframe, is the first to be set up on the work station. The other body pressings are then bonded to it, in sequence and within specified tolerances, using cutting-edge bonding adhesives. Next, the body preparation and paint process takes place, after which the body is ready to receive the other component parts, including the engine, transmission, electrical equipment, wheels, brakes and interior trim.

The engines and drivetrains are produced under contract by DOM and delivered ready to install. A stock of engines and drivetrains is kept to ensure ready availability for the production orders.

Each car is made to a specific customer order and so the attention to detail, in producing exactly the colour and trim the customer has ordered and the highest quality build, is crucial in ensuring customer satisfaction.

Key production and manufacturing activities

Activity	Description
Inbound logistics	**Inventory**
Ensuring adequate inventory and safe storage of the inventory for use as required by production.	• Body panels • Engines and transmissions • Electrical and mechanical components • Interior fittings
Assembly and Production	**Sub-Assembly Components**
Sub-assembly production of components. These assembly activities are carried out simultaneously during vehicle assembly.	• Dashboard • On board computer • Sound system • Electrical wiring loom • Suspension, steering, wheel and brakes • Seats and interior stitching • Underframe and body panels to produce bonded monocoque body shells.
Body painting and finishing.	• Painting of body shells in the paint plant • Subsequent hand polishing and finishing.
Main vehicle assembly	**Assembly processes**
The vehicle body and component parts are assembled to produce the finished motor car.	• The body shell is lowered onto the engine and drivetrain. • The suspension, steering, wheel and brake assembly is attached. • The interior is fitted with the dashboard assembly and seats. • The wiring and ancillary electrical components are installed. • Any final adjustments required are made and quality control checks carried out.
Vehicle testing	• The vehicles are tested on a rolling road. • The vehicles are test driven around a test track.
Outbound Logistics	• Vehicles that have satisfied the necessary tests are wrapped and stored. • These are then transported individually to the dealers.

Production volume is based on individual customer orders. Demand has been relatively stable in the past and it has not been considered necessary to employ capacity planning in the factory.

In many respects the company has achieved considerable success by maintaining the established high production quality associated with the brand Ashworth Lea. The production methods have remained the same for many years and the quality image of the marque endures.

The same companies have been involved in the supply chain over the years. Personal relationships built up over time with suppliers have generally ensured the supply of high quality materials. Changes, requests for different types of components and price negotiations have been dealt with, on an ad-hoc basis, between the senior management of Ashworth Lea and the suppliers.

Marketing and sales is largely based on establishing and continuing personal relationships with customers. To this end, the company has developed over 100 dealership locations in over 40 countries around the world. It is taken for granted that the brand sells itself and, as a result, the main marketing task is continuing customer liaison and ensuring product satisfaction, leading to repeat purchases in the future.

The administrative systems in the company have also changed little, except for the computerisation of the existing order processing, financial ledger systems and payroll, around 20 years ago. These established routines are the responsibility of the finance function and have remained largely unchanged over this period.

However, after a number of successful years, the past year has seen more difficult trading conditions. Recent sales performance has been disappointing with sales of the Regent model falling below expectations. Increasingly demanding environmental vehicle requirements are also of concern; the existing model range all produce high carbon emissions.

Future developments

It is anticipated that innovation in new technology and alternative fuels will provide a way forward for the company. Both the DOM motor company and the INV group have had considerable influence on the company over the recent past. DOM has been particularly keen for the company to develop technologically, including the development of self-driving vehicles. They have encouraged the development of what has become known as disruptive technology.

They understand that disruptive technology and technology trends have the potential to fundamentally change the relationship of the consumer and the car. By 2030, it is estimated that 15% of new cars will be fully autonomous i.e. completely self-driving, with a further 50% highly autonomous, with features such as self-parking and adaptive cruise control.

Software competence is increasingly becoming one of the most important differentiating factors for the industry. The program code for the modern car has approximately as many object functions as an aerospace flight control system. As such, these technological developments mean that the vehicle production industry is undergoing a fundamental change.

Many more high tech companies are already entering the market. In order to retain their existing share of the vehicle market, the established car manufacturers will need to

differentiate their products and services. They will need to enhance their value proposition from ‘hardware provider’, producing the traditional motor car, to ‘integrated mobility service provider’, producing much more sophisticated, technology-equipped transport systems such as alternative fuel and self-drive vehicles.

To this end, both DOM and INV have given both technical and, to a certain degree, financial support to Ashworth Lea. Their intention is to encourage the development of self-driving technology but also to put this into practical, commercial effect.

Although volumes of the newly developed self-drive car are not initially anticipated to exceed 50 units in 2017, this is viewed as an essential development in ensuring the successful future of Ashworth Lea in the rapidly changing industry.

Meanwhile, INV group have also expressed their support for the company by assisting in developing both a hydrogen supply network in Mayland, and the production of an electric car powered by a hydrogen fuel cell.

This development has also involved several major oil companies which use the traditional way of producing hydrogen by steam reformation. This process creates as much emissions of carbon per mile as some of today’s petrol (gasoline) engines, and begs the question: ‘why use a hydrogen fuel cell when around 60-70% of the initial energy is lost during this process’. To this end, they have been keen to collaborate with the government of Mayland in promoting their ‘green’ credentials by investing in the production of ‘clean’ hydrogen.

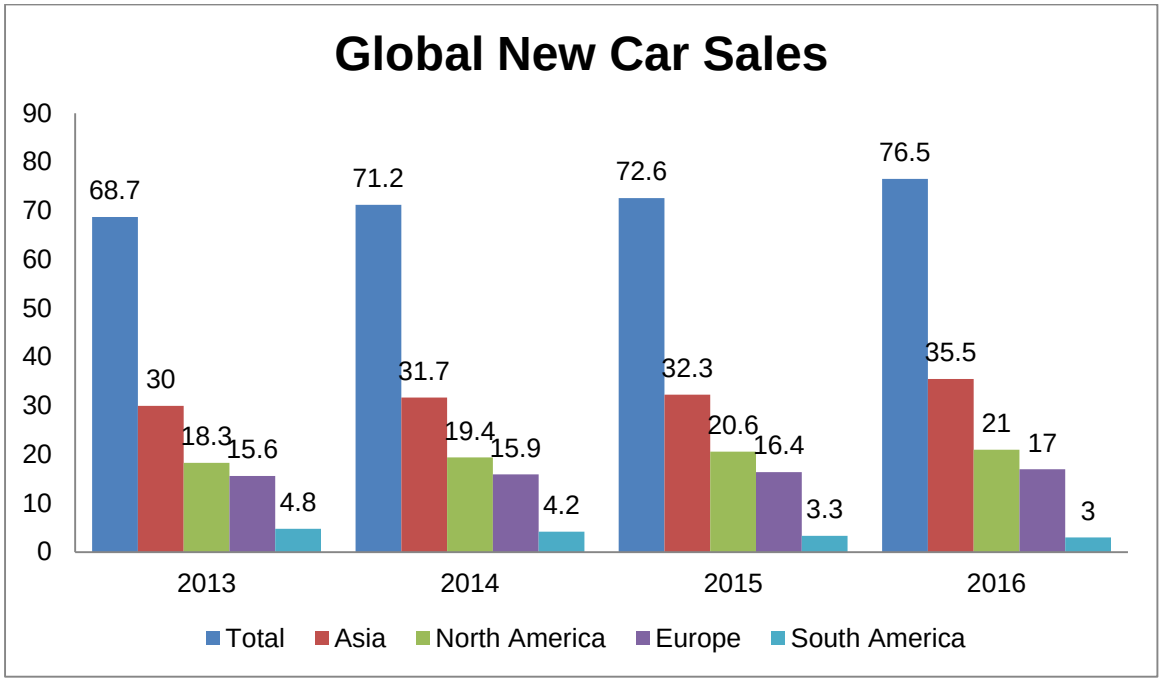
This is particularly important to Mayland because it has no natural fossil fuel resources but does have spare eco-friendly electricity. The government of Mayland has encouraged large investment in both solar and wind power, which means that the country has the capacity to produce a considerable amount of hydrogen by a process known as ‘power to gas’. In this process, electric power is used to produce hydrogen from electrolysis (passing an electric current through water to separate hydrogen and oxygen). This is regarded as an eco-friendly way of producing ‘clean’ hydrogen, and as a result is considered an acceptable alternative to fossil fuels which the major oil companies are keen to exploit.

With these various developments, it is intended that the company will move forward, adapting to both the technological and non-fossil fuel environment, whilst still maintaining the individuality of the name Ashworth Lea with its historic association with quality and an exclusive range of globally desirable vehicles.

Industry Analysis

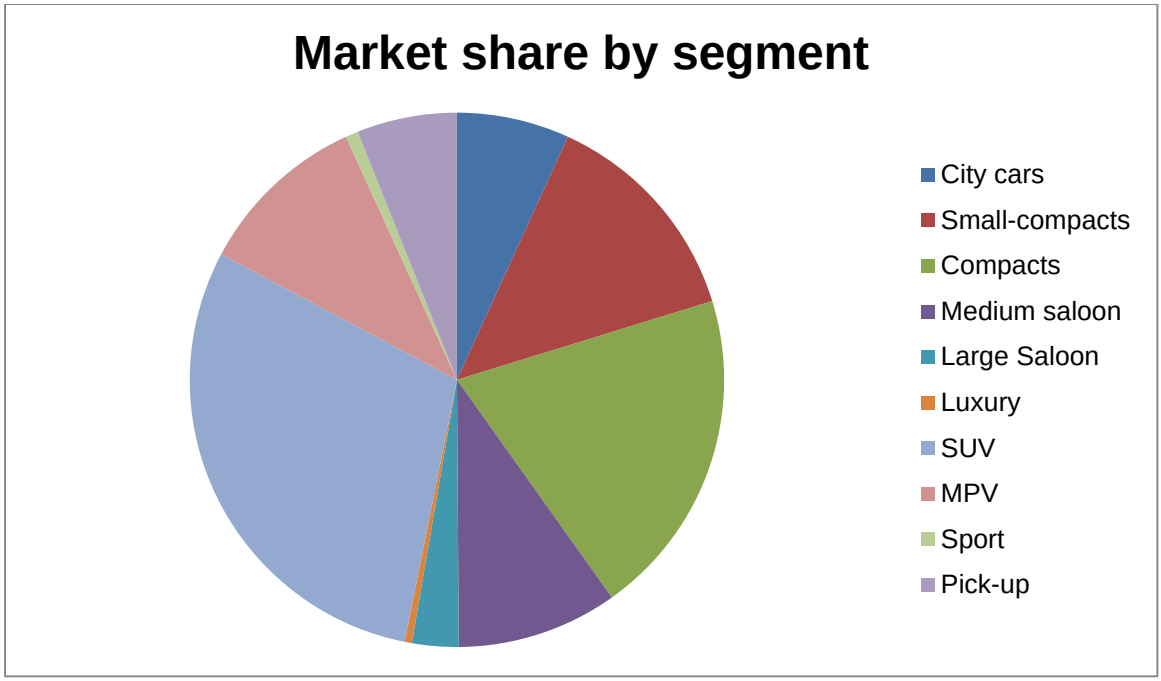
The Global Car Industry

The global car industry has been enjoying a period of relatively strong growth and profitability. Sales of new vehicles reached 76.5m units in 2016 compared with 72.6m in 2015.



The trend in regional markets however varies considerably. Whilst, the U.S. market is forecasted to reach annual sales in 2017 of 18 million cars, the outlook in Europe is much weaker and sales have dropped considerably in Russia and South America, down by 25% and 15% respectively. The market performance in India has been inconsistent and growth in China, the world's largest vehicle market, has slowed. Ashworth Lea, in comparison, produce much lower volumes for their niche market and has a long established global network which has traditionally been unaffected by these global trends.

2016 also saw some important changes in market share by segment. The market share of sports utility vehicles (SUV) jumped from 22.9% in 2015 to 27.4% in 2016. In contrast to the positive performance of SUV, global sales of new compact cars fell by 1%. Demand for compact cars in both China and North America is falling. Many consumers around the world found the SUV versions of regular compact cars more attractive, whilst demand for regular compact cars fell by 1%, compact SUV sales increased by 24%. This trend reflects the manufacturers' own shift in priorities to focus on new consumer preferences. However, the overall sales volume decrease of 1% in compact car sales hides a threat to the mainstream car makers from the higher end of the segment, premium compacts, where sales volumes increased by 6.5%.



Industry trends

Many car manufacturers have been experimenting with new technologies and vehicle concepts that have the potential to transform the car industry. It is becoming clearer what a '*connected car'* looks like — a fully digitised vehicle with Wi-Fi; advanced infotainment (audio and video entertainment) systems; vehicle-to-vehicle communications that let cars on the road "talk" to each other; real-time location services and routing based on traffic conditions; and networked Web links that facilitate vehicle diagnostics and maintenance.

The '*intelligent car'* is also moving from the drawing board to the streets. The intelligent car represents a stepping stone towards the fully-autonomous self-drive vehicle, giving drivers an insight into the effect of relinquishing control of a vehicle, with functions such as self-braking, self-parking, automatic cruise control based on road conditions, automatic accident avoidance features, computer operated power steering and electric parking brakes.

The idea of a fully-autonomous vehicle is perhaps too much for the majority of the driving public to embrace but for manufacturers, the journey from current models to self-drive cars is going to be an exciting transition period. These new developments offer enormous opportunities whilst representing a risky and uncertain phase for the industry. Manufacturers are facing the challenges of designing, manufacturing, and upgrading traditional powertrain models while, at the same time, ensuring a position in the future of an industry which will be dominated by these emerging technologies.

Ashworth Lea are no exception to these trends and are preparing for the future with the assistance and encouragement of DOM and INV.

Industry Challenges

The industry is facing a number of challenges, the most important being: shifts in consumer demand, changes in technology and increasing regulatory requirements for safety and fuel economy.

Shifts in consumer demand

Consumers are rethinking their established loyalties to individual brands as product differentiation for manufacturers becomes more difficult, mainly due to a general increase in vehicle quality throughout the industry. The major US manufacturers have caught up with Japanese manufacturers, and the mass market is catching up with the luxury sector. Although this is not likely to have a major impact on sales volume, it is affecting how much car buyers are willing to pay. Consumers are demanding more sophisticated infotainment systems at a low price, and are expecting more high-end features to be standard.

Changes in technology

It is the electronic systems in vehicles that are contributing 90% of innovations and new features in vehicle design. Software breakthroughs are becoming as critical as hardware innovation and competition is increasingly coming from non-traditional players. Whilst all major car manufacturers are targeting traditional product areas such as quality and safety, it is the electronic systems that provide a way for companies to differentiate their products.

Telematics features, including semi-autonomous driving aids such as automatic parallel parking and lane-keeping assistance, as well as sensor-based reporting on car maintenance and usage, present manufacturers and dealers with the chance to exploit the relationship with their customers and increase margins. For example, they can offer more convenient proactive service support, alerting a car owner to upcoming maintenance or repairs. In addition, telematics features provide opportunities for tie-ins with other partners, such as insurers offering discounted insurance to customers who drive safely.

Connectivity (i.e. the 'connected car' as described on page 8) and autonomous (self-drive) technology, will increasingly allow drivers and passengers to use their time in transit to consume varied forms of media and services, or dedicate the freed-up time to other personal activities.

Software content has also accelerated the pace of change in products and features. Whereas the time frame for new vehicle launches is typically three to four years, the cycle for new software iterations, often driven by interactivity with mobile devices, is measured in months. The increasing speed of innovation and the increased awareness of consumer of technological advances will require the technological aspects of cars to be upgradeable.

Increasing regulatory requirements

Stricter average fuel economy regulations are expensive for manufacturers to comply with. These were originally introduced in the United States in 1975, and over the years it is estimated that they have added as much as US$1,000 to the production cost of a vehicle. This combined with regulatory pressures to reduce overall fleet emissions are steadily adding to manufacturers' costs and resulting in the need for higher sales volume to amortise these increasing costs.

Only a minority of car buyers are willing to pay for more environmentally friendly choices such as electric vehicles, so cost pressures fall largely on the manufacturer. One way to meet the tighter standards on fuel consumption is to reduce weight by substituting lighter materials.

Stricter emission regulations, lower battery costs, more widely available charging infrastructure, and increasing consumer acceptance will create the potential for market penetration by electrified vehicles (hybrid, plug-in, battery and fuel cell) in the coming years. The speed of adoption will be determined by the interaction of consumer pull (partially driven by the total cost of ownership) and regulatory push, which will vary across countries and local regions.

It is estimated that by 2030, the share of electrified vehicles could be as high as 30% of new vehicle sales. Adoption rates will be highest in dense cities in developed countries with strict emission regulations and government incentives for example, tax breaks and special parking concessions. Through continuous improvements in battery technology and cost, local differences will become less pronounced, and electrified vehicles are expected to gain more and more market share from conventional vehicles. With battery costs decreasing over the next decade, electrified vehicles will achieve cost competitiveness with conventional vehicles, creating the most significant catalyst for market penetration. At the same time, it is important to note that electrified vehicles include a large portion of hybrid electrics, which means that even beyond 2030, the internal-combustion engine will remain very relevant.

The short time frame available for manufacturers to achieve the mandated fuel consumption and emission targets means that advances will have to be applied to the traditional internal combustion engine and powertrain. It is believed that technology breakthroughs will enable petroleum-based vehicle fuel economy to be improved by as much as 75%, although this can only be viewed as a relatively short term solution to emission concerns associated with traditional carbon fuel technology.

Future Outlook

Shift to modularised production

Under the joint pressures of changing consumer preferences for more customisation and the need to reduce costs for competitive and regulatory reasons, manufacturers will continue to add to the number of models they offer but at the same time reduce the number of vehicle platforms on which they are built.

The resulting complexity increases costs but the additional expense is outweighed by savings from the sharing of common components between cars and platforms, and increased volume. The adoption of these common platforms will also lead to a consolidation of suppliers that will result in a smaller number of large, global players.

New market entrants

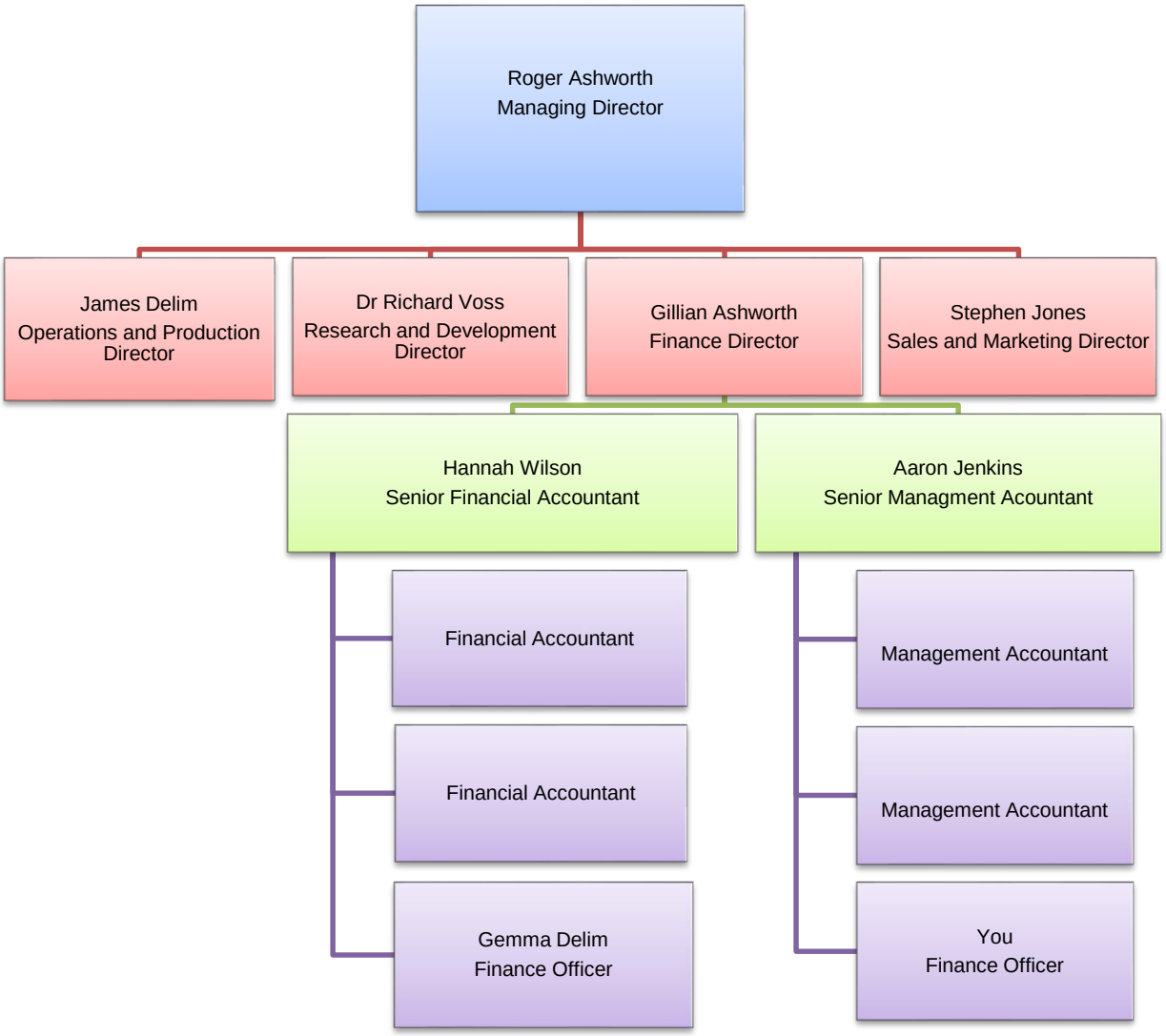
The pressures on traditional automotive players will potentially lead to consolidation or new forms of partnerships among players.

The industry is transforming from competition among peers toward new competitive interactions but also partnerships. To succeed, car manufacturers, suppliers, and service providers need to form alliances and new business models, for example, around infrastructure for autonomous and electrified vehicles.

Sales volume growth

It is likely that overall global car sales will continue to grow, but the annual growth rate is expected to fall to around 2% by 2030. This fall will be largely driven by macroeconomic factors and the rise of new services such as car sharing. This may result in a decline of private vehicle sales, but this is likely to be offset by increased sales in shared vehicles that need to be replaced more often, due to higher utilization and related wear and tear. The remaining driver of growth in global car sales is the overall positive macroeconomic outlook, including the rise of the global consumer middle class.

Extract from Ashworth Lea Organisation Chart



Ashworth Lea
Senior Staff Profiles

	**Roger Ashworth, Managing Director** Roger is the grandson of the company founder Robert Ashworth. Over the years he has maintained an interest in the company through his family connections. An engineer by profession, he has recently stepped into the position of Managing Director after considerable pressure for change from the INV group.
	**Gillian Ashworth, Finance Director** Gillian has worked in the company for the last 10 years and is married to Roger. She is a Fellow member of the Chartered Institute of Management Accountants and has responsibility for all the financial aspects of the company and the company's administrative functions.
	**James Delim, Operations and Production Director** James has an automotive engineering background. He gained most of his experience working for a number of Asian mass vehicle manufacturers some of whom also produced special use, lower volume vehicles. He is responsible for overseeing the day to day production and the effective operation of the factory facilities.
	**Stephen Jones, Sales and Marketing Director** Stephen has worked with the company for more than 20 years and is highly knowledgeable of the specialist car market. Over the years, he has built strong relationship with the major players in the market. Stephen is responsible for overseeing all the company's marketing and corporate events.

	**Dr Richard Voss, Research Director** Richard's background is in systems technology and engineering. He has been an important influence in driving the company to incorporate new technology into existing models and is a key player in the new model development programmes.

Extract from Ashworth Lea 2016 Financial Statements

Ashworth Lea Statement of Profit or Loss for the year ended 31 December	2016 M$Million	2015 M$Million
Revenue	**1,196**	**1,228**
Cost of sales	**(806)**	**(848)**
Gross Profit	**390**	**380**
Selling and distribution expenses	**(153)**	**(159)**
Administration expenses	**(227)**	**(206)**
Operating profit	**10**	**15**
Finance costs	**(3)**	**(1)**
Profit before tax	**7**	**14**
Taxation	**(2)**	**(4)**
Profit / (loss) for the year	**5**	**10**

Ashworth Lea
Statement of Financial Position
as at 31 December

	2016 M$Million	2015 M$Million
Non-current assets		
Intangible assets	**740**	**559**
Property, plant and equipment	**450**	**473**
	1190	**1032**
Current assets		
Inventories	**165**	**165**
Trade receivables	**89**	**81**
Cash and cash equivalents	**168**	**138**
	422	**384**
Total Assets	**1612**	**1416**
Equity and Liabilities		
Share capital	**210**	**210**
Retained earnings	**569**	**564**
Total equity	**779**	**774**
Non-current liabilities		
Borrowings	**487**	**355**
Current liabilities		
Trade payables	**318**	**272**
Borrowings	**26**	**11**
Current tax liabilities	**2**	**4**
	346	**287**
Total Equity and Liabilities	**1612**	**1416**

Ashworth Lea
Statement of Cash Flows
for the year ended 31 December

	2016 M$Million	2015 M$Million
Cash flows from operating activities		
Profit / (loss) before tax	**7**	**14**
Depreciation and amortisation	**189**	**165**
Net finance costs	**3**	**1**
(Increase)/decrease in inventory	**0**	**(15)**
(Increase)/decrease in trade and other receivables	**(8)**	**(36)**
Increase/(decrease) in trade and other payables	**46**	**(8)**
Cash generated from operations	**237**	**121**
Interest paid	**(3)**	**(1)**
Tax paid	**(4)**	**0**
Net cash generated from operating activities	**230**	**120**
Cash flows from investing activities		
Purchase of property, plant and equipment	**(66)**	**(45)**
Increase in intangibles	**(281)**	**(129)**
Net cash used in investing activities	**(347)**	**(174)**
Cash flows from financing activities		
Increase/(decrease) in short-term borrowings	**15**	**(87)**
Increase/(decrease) in long-term borrowings	**132**	**186**
Net cash from/(used in) financing activities	**147**	**99**
Net increase / (decrease) in cash and cash equivalents	**30**	**45**
Cash and cash equivalents at beginning of the year	**138**	**93**
Cash and cash equivalents at the end of the year	**168**	**138**

Tax regime in Mayland

Corporate Profits:

- The corporate tax rate applicable to taxable profits is 20%.
- The capital gains tax rate is 20%. The allowable costs of the asset can be indexed using the Retail Price Index.
- 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 vehicles used for business purposes) at a rate of 25% per year on a reducing balance basis.
- Tax losses can be carried forward to offset against future taxable profits from the same business.

Management accounting information

Extracts from 2017 budget

Vehicle sales budget 2017				
	Regent	**Regale**	**Royale**	**Total**
Selling price per car (M$)	M$183,000	M$225,000	M$200,000	
Number of cars	1,500	2,000	2,500	6,000
Total sales (M$000)	274,500	450,000	500,000	1,224,500

Vehicle budgeted gross profit per unit			
	Regent	**Regale**	**Royale**
	M$	M$	M$
Selling price	183,000	225,000	200,000
Material cost	68,000	110,000	85,000
Labour cost	17,200	14,700	18,000
Production overheads	34,400	29,400	36,000
Standard gross profit	63,400	70,900	61,000

Self-drive cars budget 2017					
	January to June		**July to December**		**Year**
Production / sales (cars)	20		25		45
	Per car	Total	Per car	Total	Total
	M$	M$	M$	M$	M$
Selling price	100,000	2,000,000	100,000	2,500,000	4,500,000
Variable cost	70,000	1,400,000	70,000	1,750,000	3,150,000
Contribution	30,000	600,000	30,000	750,000	1,350,000
Fixed costs	20,000	400,000	20,000	500,000	900,000
Profit	10,000	200,000	10,000	250,000	450,000

Car Industry News

7th February 2017 No. 775 M$5.80

Hydrogen cars: will new government funding fuel demand?

James Walsh, Business Correspondent

The Government has announced the launch of a new funding initiative where government bodies and private companies can bid for $4 million worth of Government funding to add hydrogen-powered vehicles to their fleets.

The funding will cover up to 50 per cent of the purchase costs of new vehicles bought by April 2018. Support will also be available for leasing or renting hydrogen cars, insurance, hydrogen fuel and servicing.

Transport minister Adrian Johnston said: "The funding initiative is one of many measures we are implementing as part of our vision for all cars and vans to be zero-emission by 2050."

Is hydrogen the future? Will it replace our need for petrol and diesel and save the environment?

With new hydrogen fuel-cell vehicle models, government grants in place and funding committed for hydrogen refuelling stations, turning the dream into reality is looking like a distinct possibility.

But that reality is very much dependent on the availability of refuelling stations. With just five stations in Mayland, unless we see a significant increase, the dream will remain a dream.

If the government predictions are to be believed, it's estimated that by 2020 we'll have 65 stations across Mayland, covering most major areas. Once that point is reached, rapid progress, driven by the private sector, should follow. To see the dream turn into reality though is going to need the collective will of manufacturers, investors and Government.

On the plus side, the process of refuelling is very easy, as it mirrors the way you'd fill up a traditional petrol or diesel car. The whole process takes a few minutes – you just slot in the pipe and wait until you hit the brim.

One concern many motorists point to with hydrogen is safety. However, according to industry experts, these worries are misplaced The tanks are so strong that they won't be damaged in a road accident. They also say that it's an unfair comparison - people get into a petrol car and don't think about sitting on 50 litres of volatile fuel – hydrogen is no different.