

This question has been written with the assistance of OpenAI ChatGPT-4

1 Background

Valuevest (Pty) Ltd ('Valuevest') was founded in 2010. It is a private equity company based in South Africa, specialising in investments in various sectors. The company strives to comply with sound corporate governance principles and accordingly has adopted the King IV Report on Corporate Governance, which it applies as far as practically possible. The Board of Directors consists of three independent directors as well as a chief executive officer (CEO), chief financial officer (CFO) (a CA(SA)) and chief investment officer (CIO). The board has also established an Investment and Audit Committee.

Valuevest typically aims for a high rate of return on its investments that significantly exceeds its cost of capital. The specific return expectations for each company may vary depending on various factors such as the risk profile, sector or industry and stage of the investment (early-stage, growth, or buyout). Valuevest also employs various strategies to enhance the value of its investments, such as operational improvements, strategic initiatives and financial restructuring.

The company follows a structured investment process to identify, evaluate and execute investment opportunities. This includes the following:

- **Deal sourcing:** Valuevest has a dedicated investment team that actively researches sectors and considers investment proposals from companies seeking capital.
- **Initial screening:** Upon finding a potential investment opportunity, Valuevest's investment analysts conduct an initial screening process in which they assess the company's sector, business model, financial performance, management team and growth prospects. If the opportunity aligns with Valuevest's investment criteria, the analysts will complete an investment proposal, which is presented to the CIO, who reviews it and, if it is considered viable, will move it to the next stage.
- **Due diligence:** Valuevest's investment team will then conduct a thorough due diligence on the target company. This process involves a comprehensive assessment of the company's financial statements, operations, and legal, regulatory and competitive landscape. In the due diligence process, Valuevest makes use of external experts such as legal advisors, consultants and industry specialists. The goal is to identify risks, opportunities and potential areas for value creation.
- **Investment proposal and valuation:** Based on the findings from the due diligence process, the investment team will then develop an investment case and perform a valuation. In the valuation the team considers factors such as financial performance, growth prospects, industry benchmarks and comparable transactions.
- **Structuring the deal:** Once the valuation has been determined and the investment proposal finalised, the investment team will negotiate the terms of the investment, including any equity stake, funding, governance rights and exit mechanisms.
- **Final approval and execution:** Once all details of the transaction have been agreed upon, the investment case will be presented to the Investment Committee for consideration and approval. Transactions which exceed the Investment Committee approval mandate must go to the Board, based on the recommendation of the Investment Committee. After approval of the transaction, Valuevest will proceed with the execution of the investment, which involves finalising the legal documentation, coordinating with the target company's management team and securing any required regulatory approvals.

- **Post-investment value creation and monitoring:** After the investment agreement has been completed, Valuevest will use its industry expertise, operational know-how, and network of contacts to help the investee company achieve its growth objectives. The Valuevest team also regularly monitors the performance of its portfolio of companies, participates in board meetings of the investee, and maintains open communication with the investee's management team.

Throughout the investment process, Valuevest aims to generate attractive risk-adjusted returns for its investors while actively supporting the growth and success of the companies in its portfolio.

2 Artificial intelligence technology

At a recent investment strategy session, the Investment Committee discussed the possibility of using artificial intelligence (AI) for the entire investment process. The information technology (IT) manager explained that AI would enable Valuevest to evaluate and execute investment opportunities more accurately and efficiently. He suggested that Valuevest should consider fully automating the whole investment decision-making process. Bank statements, financial statements and management accounts could be uploaded, and the system would then automatically value the business. The IT manager believes that, by using AI, Valuevest could gain a competitive edge in evaluating investment opportunities in a more data-driven and efficient manner.

The IT manager has identified an advanced AI model, ChatGPT, for this purpose. ChatGPT uses historical financial data, market trends and industry benchmarks and works as follows: One enters a question or request and ChatGPT will attempt to understand the prompt and provide a response based on the data. Some of the features of ChatGPT include that it remembers what you have asked previously and can continue interacting. Furthermore, it can be asked to re-generate an answer, perform recalculations and corrections and it will refer to information that was presented earlier in the interaction.

ChatGPT provides full, written responses in a conversational way based on the enormous amount of data with which it has been programmed. The version of ChatGPT that Valuevest is considering does not have access to real-time data or specific company data later than September 2021. ChatGPT does not always fully understand context in the same way a human does. At times it lacks the ability to understand nuances, intentions or the strategic implications behind certain numbers or trends.

Valuevest's IT team and a team of financial specialists tested ChatGPT by prompting it to perform earnings-based valuations on existing companies in Valuevest's portfolio. The results of the valuations performed by ChatGPT were compared to manual valuations performed by the team of financial experts. The team reported that most of the valuations were up to 90% accurate after a process of providing information and requesting recalculations and corrections. The team concluded that ChatGPT could be used to perform earnings-based valuations and research potential events affecting a company's valuation.

Some of Valuevest's executives were very excited by the possible use of ChatGPT and were of the opinion that this could give Valuevest a competitive advantage in the market. In view of this, they discussed the possibility of retrenching a large component of the team of financial analysts and investment specialists.

One of the concerns raised by the CFO on the use of ChatGPT related to cyber security and the risk it holds for Valuevest's business. The IT manager responded that the company continuously invests in systems and technology but that the risk is always prevalent and real.

3 Investment in ACL

Valuevest is evaluating a potential investment opportunity in a frozen food warehouse logistics operator, Arctic Cold Logistics (Pty) Ltd ('ACL'). ACL is an emerging company that specialises in multi-temperature wholesale, warehousing and distribution services for food. It has a strong presence in South Africa and neighbouring countries.

JGL Inc. ('JGL'), a medium-size firm of registered auditors, have been the auditors of ACL since inception. JGL is currently planning the audit for FY2023.

Valuevest sees significant growth potential in the company due to the expanding market for frozen food products in view of improvements in technology. Temperature-controlled logistics infrastructure is imperative for improving food security in Africa, to enable fresh food suppliers to deliver food of quality. As a result, investments in cold-chain retail, logistics and warehousing have been gaining momentum in Africa.

Based on the discussion of using AI in the investment process at the strategy session, Valuevest decided to test the process by using ChatGPT for the valuation of an 80% shareholding in ACL.

Information to be used in ChatGPT

The financial team consists of experienced and inexperienced staff members and prepared the following information to copy into ChatGPT:

Arctic Cold Logistics: Management report						
Income statement for the year ended / ending 31 December						
	Notes	Actual		Forecast		
		2022	2023	2024	2025	2026
		R'000	R'000	R'000	R'000	R'000
Operating revenue	1	473 808	522 081	576 900	640 358	697 991
Operating expenses	2	(450 904)	(502 572)	(553 824)	(610 902)	(668 675)
Operating profit		22 904	19 509	23 076	29 456	29 316
Finance cost		(15 111)	(13 768)	(12 927)	(11 691)	(11 043)
Finance income	3	321	432	375	401	424
Profit before tax		8 114	6 173	10 524	18 166	18 697
Income tax expense		(1 597)	(1 682)	(2 887)	(4 841)	(4 983)
Profit for the year		6 517	4 491	7 637	13 325	13 714

Arctic Cold Logistics: Management report						
Balance sheet as at 31 December						
	Notes	Actual		Forecast		
		2022	2023	2024	2025	2026
		R'000	R'000	R'000	R'000	R'000
ASSETS						
Non-current assets		182 519	141 563	139 914	135 695	127 606
Right-of-use assets	4	37 650	33 137	26 922	23 358	18 689
Property, plant and equipment		139 349	103 670	109 490	108 463	104 926
Deferred tax asset		2 801	1 384	0	0	0
Investments and other financial assets		2 719	3 372	3 502	3 874	3 991
Current assets		136 415	163 458	171 587	176 967	198 471
Inventories		26 761	29 731	32 532	35 521	38 263
Taxation receivable		1 114	893	0	0	0
Trade and other receivables		73 696	78 533	84 365	92 650	99 502
Cash and cash equivalents	5	34 844	54 301	54 690	48 796	60 706
Total assets		318 934	305 021	311 501	312 662	326 077
EQUITY AND LIABILITIES						
Shareholders' equity		64 123	67 806	74 068	84 995	96 240
Ordinary share capital		7 300	7 300	7 300	7 300	7 300
Retained earnings	6	56 823	60 506	66 768	77 695	88 940
Non-current liabilities		149 649	129 758	109 428	89 445	76 978
Long-term borrowings		109 529	92 553	87 287	61 917	53 348
Lease liability		40 120	37 205	20 789	25 445	19 987
Deferred tax liabilities		0	0	1 352	2 083	3 643
Current liabilities		105 162	107 457	128 005	138 222	152 859
Provisions and other liabilities		9 039	7 032	7 000	6 235	6 521
Trade and other payables		70 682	75 624	82 025	88 650	98 210
Current tax liabilities		3 759	1 168	582	1 231	1 952
Current portion of long-term borrowings		21 682	23 633	38 398	42 106	46 176
Total equity and liabilities		318 934	305 021	311 501	312 662	326 077

Notes

- Revenue for the financial year ended 31 December 2023 (FY2023) includes revenue of R5 million (FY2022: R10 million) received by ACL from a contract with Phisor (Pty) Ltd for cold storage of vaccines. This contract was not renewed due to the decrease in demand for the vaccines and thus not included in the forecast revenue. The profit before tax on the contract amounted to R3,2 million in FY2023 (FY2022: R4 million).

ACL is in the process of signing a contract with a well-known food manufacturing company, Brand Tiger (Pty) Ltd, for four years. The contract will commence in FY2024 and the revenue from the contract for FY2024 is forecast to be R12 million. The annual revenue is expected to increase by 5% per annum and the net profit margin from the contract is expected to be 18%. The contract has not been incorporated in the forecast figures.

- 2 The operating expenses include the following item:

	2022	2023	2024	2025	2026
	R'000	R'000	R'000	R'000	R'000
Depreciation	(26 392)	(24 942)	(25 759)	(25 699)	(27 697)

ACL's cash flow position was negatively affected during the periods of lockdown caused by the Covid-19 pandemic. As a result, it decided to suspend the payment of bonuses to management as from FY2020. The management team of ACL is however confident that business has returned to normal and will even surpass expectations in future and the decision was therefore taken to resume bonus payments from FY2024. Annual bonus payments of R3 million for the investment team will be paid in FY2024 and will not be increased in the foreseeable future.

At a recent Board meeting, at which all the directors were present, the directors unanimously agreed to reinstate the executive management share option scheme. In terms of this scheme the CEO, CFO and chief operating officer of ACL will receive share options as incentives amounting to 20% of the profit after tax, if the profit grows year on year by the Consumer Price Index plus three percentage points (3%). This decision has not yet been incorporated into the forecast figures.

- 3 Finance income represents interest income on cash and investments.
- 4 Right-of-use assets as at 31 December 2023 were as follows:

	Land and buildings	Equipment and machinery	Vehicles	Total
	R'000	R'000	R'000	R'000
Carrying value at the beginning of the year	22 118	9 721	5 811	37 650
New leases entered into	5 173	1 076	853	7 102
Derecognition on lease termination	(2 057)	-	-	(2 057)
Depreciation	(3 042)	(1 981)	(1 171)	(6 194)
Impairment charge	(3 364)	-	-	(3 364)
Carrying value at end of year	18 828	8 816	5 493	33 137

At inception, ACL assesses whether a contract contains a lease. ACL recognises a right-of-use asset and a corresponding lease obligation with respect to all lease arrangements in which it is the lessee, except for short-term leases and leases of low-value assets (less than R100 000). The lease obligation is initially measured at the present value of the lease payments outstanding at the commencement date, discounted by using the rate implicit in the lease.

The right-of-use assets comprise the initial measurement of the corresponding lease obligation, lease payments made at or before the commencement date, any initial direct costs incurred by the lessee, less any lease incentives received. They are subsequently measured at cost less accumulated depreciation and impairment losses. All right-of-use assets are encumbered as security for the respective lease obligations.

The impairment charge was recognised on the land and buildings as the carrying amounts exceeded the recoverable amounts.


The right-of-use assets are located throughout South Africa.

- 5 The entire cash balance is considered to be excess cash.
- 6 ACL has a constant dividend pay-out ratio of 18% and this dividend policy is not expected to change in the foreseeable future.
- 7 Details of similar listed companies in the same industry as ACL are as follows:

Company	PE ratio	Description
FoodC	11,2	Leading South African food manufacturer, producing a wide range of branded and private-label food products.
VLogistics	7,5	African-focused provider of integrated market access and logistics solutions focusing on the healthcare, consumer, automotive, chemicals and food industries.
DittoT	9,8	International company that provides and manages supply chain solutions for companies across the globe.

The corporate tax rate in South Africa is 27%.

All the above information was loaded into ChatGPT. ChatGPT responded with a price/earnings (P/E) valuation of ACL. However, one of the members of the financial team noted that the AI did not take the non-recurring items as indicated in the information above into account. He reminded the AI of this and the following response with an adjusted valuation was provided by ChatGPT:



You're correct. The valuation should take into account significant changes in business contract and employee compensation.

First, let's adjust the 2023 net profit:

1. We subtract the non-renewed contract profit of R3.2 million.
2. The resumption of bonus payments will reduce the net profit starting 2024. However, since it does not affect the 2023 profits, we don't need to make adjustments for this in the current calculation.

Adjusted 2023 Net Profit = Actual 2023 net profit – profit from Phisor contract
 = R4 491 000 – R3 200 000
 = R1 291 000

Next, let's use the average P/E ratio of comparable companies to estimate ACL's value.

The P/E ratio for FoodC, VLogistics, and DittoT are 11,2, 7,5 and 9,8 respectively. The average of these gives us a P/E ratio of 9,5 $((11,2 + 7,5 + 9,5)/3)$.

Now we can estimate the company's value:

Company value: Adjusted net profit * average P/E ratio

Company value: R1 291 000 * 9,5 = R12 265 500

So, the estimated value of ACL as of 31 December 2023, based on an earnings-based valuation method and considering the non-renewed contracts and management bonuses, is approximately R12,27 million.

Keep in mind that this is a simplified calculation and actual valuation methods may consider various other factors and future prospects. Also, note that P/E ratios can vary widely between industries and companies, and an average of three companies may not be a comprehensive indicator. We would advise further in-depth analysis or consultation with a financial advisor.

As part of performing valuations of companies that are potential investment opportunities, Valuevest usually performs an analysis on the financial statements and the forecast financial information that is provided to it. As a further test of the AI's abilities, it requested ChatGPT to analyse the forecast income statement provided by ACL as part of its management reports.

ChatGPT gave the following response:



Certainly, I'll take a look at the forecast income statement of ACL provided. The goal of this analysis is to understand the predicted future performance of the company based on the provided financial forecasts.

Here is a high-level analysis:

1. **Revenue growth:** ACL's revenue is forecast to consistently grow each year from 2023 to 2026. This is a positive sign as it indicates the company anticipates increasing its sales. However, one needs to understand the source of this growth – is it due to increasing market share, expansion into new markets, or process increases?
2. **Operating expenses:** The company's operating expenses are also expected to increase in the forecast period. This is not surprising considering the revenue growth. However, it's crucial to assess whether these costs are scaling proportionally with revenues or whether there might be inefficiencies.
3. **Profit before finance cost:** Profit before finance cost is also expected to increase over the forecast period, suggesting improvements in operational efficiency or perhaps benefits from economies of scale.
4. **Finance costs:** Finance costs are projected to decrease. This could mean the company plans to pay down its debt or has refinanced to a lower interest rate. However, if finance costs are decreasing and the company still has a considerable debt burden, this could indicate an optimistic assumption about interest rates or repayments that might not be realistic.
5. **Net profit:** The net profit is projected to grow significantly, almost tripling from 2023 to 2026. This is a positive indication of the company's future profitability but should be assessed in conjunction with other financial statements to check for balance and consistency.

The financial team was happy with the valuation and proposed that Valuevest go ahead with making a bid for the shares of ACL, based on the valuation provided by ChatGPT. Some members of the management team were however hesitant and requested that a free cash flow valuation be performed as a reasonability test. It was decided that a risk premium of 3% should be added to the normal required rate of return of Valuevest, which is currently at 14%. The continuous annual growth rate of ACL after 2026 is expected to be 6%.

INITIAL TEST OF COMPETENCE, JUNE 2024

PROFESSIONAL PAPER 3

This paper consists of two parts. Answer each part in a separate answer book.

PAPER 3 PART I – REQUIRED		Marks	
		Sub-total	Total
(a)	Critically evaluate the tasks performed by ChatGPT as part of Valuevest’s process of identifying and evaluating the suitability of the potential investment in ACL, based on –	8	
	(i) the earnings-based valuation of ACL performed by ChatGPT; and		
	(ii) the additional work required to assess the reasonability of the forecast income statements (apart from the work already performed by ChatGPT).	4	
	<ul style="list-style-type: none"> Do not perform any calculations or re-perform any of the calculations provided by ChatGPT. 		
	<i>Communication skills – clarity of expression</i>	1	13
(b)	Perform a valuation of ACL using the free cash flow valuation methodology.	20	
	<ul style="list-style-type: none"> Start with the movement in cash. 		20
(c)	Discuss the risks and other relevant strategic factors that Valuevest should consider regarding the decision to make use of an AI such as ChatGPT in performing the valuation of companies that are potential investment opportunities.	13	
	<i>Communication skills – logical argument</i>	1	14
Total for part I			47

INITIAL TEST OF COMPETENCE, JUNE 2024

PROFESSIONAL PAPER 3

This paper consists of two parts. Answer each part in a separate answer book.

PAPER 3 PART II – REQUIRED		Marks	
		Sub-total	Total
(d)	Discuss and conclude on the ethical considerations surrounding the proposal by Valuevest executives to use ChatGPT to replace the team of financial analysts and investment specialists.	4	4
(e)	Describe the controls that Valuevest’s management should have implemented with regard to – (i) the investment process as described in section 1, excluding the payment process and human resources department controls, in addition to those already described in the scenario. • Limit your answer to four additional controls; and (ii) protecting the company against cyber attacks. <i>Communication skills – appropriate style</i>	8 6 1	15
(f)	Discuss the governance concerns surrounding the bonus and share option schemes in note 2 of section 3. • Include appropriate and applicable considerations in terms of the SAICA Code of Professional Conduct. • Do not include aspects to be considered in evaluating or addressing the threats identified. <i>Communication skills – layout and structure</i>	8 1	9
(g)	Describe the procedures that Valuevest’s consultants should perform as part of their due diligence to identify possible unrecorded liabilities and contingent liabilities not accounted for in the financial statements of target companies.	6	6
(h)	Describe, with reference to the external audit of ACL for FY2023 – (i) the risk of material misstatement related to the right-of-use assets; and (ii) the substantive procedures to verify the right-of-use assets that JGL should perform. • Do not address presentation and disclosure in your answer. <i>Communication skills – appropriate style</i>	8 10 1	19
Total for part II			53
TOTAL FOR THE QUESTION			100