GRAHAM CIRCLE EXAMPLE WRITEUP: HIGHLY SPECULATIVE (24.06.2025)

Hardide PLC (AIM:HDD) is a £6.5m nanocap where revenue stagnation and persistent cash burn led to an 80% decline over five years. But a February 2024 equity raise, a new CEO and a successful restructuring all signal an inflection point. Despite the stock rebounding over 80% from 52-week lows, the market appears overly pessimistic.

Business Overview

Hardide Coatings is a provider of advanced tungsten carbide/tungsten metal matrix composite coatings that increase the life of metal parts operating in abrasive, erosive, corrosive and chemically aggressive environments. They are applied by low temperature chemical vapour deposition (CVD) which enables a more flexible coating which can coat internal surfaces and complex shapes. Hardide operate in the UK (5 coating reactors) and USA (4 coating reactors).

There are several other hard coatings that have traditionally been used to protect against wear such as hard chrome plating and HVOF spray (up to 24x more wear resistant than Hard Chrome and 6x more than HVOF).

Furthermore, while PVD (Physical Vapour Deposition) is effective for precision and lightweight needs, the advantages of CVD are unmatched. CVD's ability to uniformly coat complex geometries, including non-line-of-sight areas, makes it indispensable for applications demanding precision and durability. Compared to PVD, CVD offers thicker and pore-free coatings, ensuring superior wear resistance, corrosion protection and long-lasting performance even in the most challenging environments.

Hardide have a genuine competitive advantage, but so far they've failed to profit from it. This can be shown more tangibly from this article, written by Yuri Zhuk (Hardide's "own"):

"After a lengthy and extensive test programme, Hardide Coatings, was selected by Airbus to provide its Hardide-A coating as a replacement for HCP (Hard Chrome)... One of the parts made from thin steel plate had HVOF coating specified, but in production most parts buckled ... The Hardide CVD coating proved to be a better alternative with no distortion of the parts. A European helicopter manufacturer approved the Hardide CVD coating on a gearbox shaft …as the smooth Hardide coating was shown to be far less abrasive for seals... A major US-based producer of positive displacement pumps is increasingly using the CVD coating … and has reported 3x increase in pump life when handling abrasive fluids."

Something that isn't discussed by any analysts is pricing and the reason for that is that pricing is done on a component basis and because Hardide offer a premium service, likely to be significantly more expensive than other coating processes.

Business Model

Hardide's business model is to coat component parts owned by its customers. They sell on an ex-works pricing basis and are not exposed directly to the financial risks of transporting products internationally.

1. Service: Represents over 90% of sales revenues. Typically, work is driven by larger OEMs - although orders are placed on Hardide by their tier 1 or tier 2 suppliers. There is no order book. Strategy is to work more closely with OEM customers to generate "pull through" demand.

Also developing ancillary service offerings. Examples include providing pre-coating services using nickel strike facilities and offering specialist laboratory inspection services.

2. Enhanced products (launched 04/2024): objective is to accelerate revenue growth and generate more predictable repeat business by coating high volume consumable spares to end users where the payback offered by the durability of the coating provides a compelling value proposition.

   The initial focus has been to provide coatings for copper nozzles and associated components used in thermal spraying equipment where the existing life of the component is only a few hours and the downtime costs of replacement are high. Hardide's coatings are proven to increase the life of these components between 3-20x. To date they have provided nozzles to 22 customers - both own products as well as providing a service to customers of a coating on their existing stock to extend life.

3. Bespoke Solutions: currently under development and focused on solving unique customer problems with a bespoke Hardide specification in both traditional markets and new markets.

   In traditional markets of Energy and Aerospace development lead times and customer approvals are long. As part of this initiative, they will seek to target customers + applications with shorter approval cycles. In doing this they will work with customers to provide a solution that has a bespoke Hardide specification, creating a high barrier to entry for other surface treatment providers.

   As an example, their first customer funded development project was recently completed for a customer operating in the semiconductor sector. If successful, this will lead to a wider portfolio of applications that could benefit from Hardide's coating capabilities.

Business Sectors Overview

Turnover figures from H1 2023 to H1 2025 paints a clear picture. Energy and industrial revenues are volatile. Aerospace is growing.

Energy: £1.9m, £1.5m, £0.8m, £1.1m, £1.2m

Industrial: £0.9m, £0.8ml, £0.8m, £1.1m, £0.6m

Aerospace: £0.1m, £0.3m £0.5m, £0.4m, £1m

Clearly, the current driver of revenue growth was demand from the aerospace sector, which included initial development revenues from a new contract won in December 2024 to coat cargo door components for freight aircraft. Additional production readiness revenues and initial production revenues from this contract are expected in the second half year according to management.

Note this statement from the 2021 annual report “The aerospace industry is notoriously cautious and slow to accept new products, but once it has, sales can be relatively predictable, consistent and likely to be sustained.”

Industrial revenues were a little low, in part relating to short term inventory management by some customers around their financial year ends. Once again, though, management are suggesting that customers are now showing improved demand schedules for our second half year. Management have also said that their enhanced product range continues to build steady traction and is contributing to overall sales.

Demand from the energy sector improved on a year ago (recovery from a weak H1 2024 when customers were de-stocking), but also from a variety of new application development projects with existing customers as well as new customers.

Management & Employees

This wouldn’t be a complete piece without discussing Matt Hamblin, current CEO, appointed mid last year. He was previously CEO of Keronite which he sold for $35m on revenues of $9m. This move should reassure shareholders even if a parallel move seems unlikely at this point.

The CEO holds bi-monthly staff briefings, incorporating a Q&A session and improvement proposals from staff. In December 2024, an incentive scheme was put in place for all employees to earn a bonus, contingent upon the Group achieving certain financial performance targets. Further, a personal development review process was introduced in 2024 to help enable staff to reach their potential and to continue to learn + grow with the business. Hardide's reward framework was also refreshed in 2024 such that all employees now participate in a bonus scheme aligned with the profitable growth of the business. Pay rises were awarded in January 2025.

We have to mention Yuri Zhuk, co-founder + Technical Director - managed the Company's CVD coating technology development from early laboratory stage to the aerospace-approved manufacturing technology now used by blue chip customers. The partnership between businessman (Hamblin) and scientist (Zhuk) could be powerful and a parting would turn me off.

We also know from the annual report that cash bonuses for management (20% of salary or £50k for CEO, Matt Hamblin) are based on "challenging" EBITDA targets set by the Board (disclosed next year).

In addition, Mr. Hamblin was awarded restricted share options over 1,000,000 new ordinary Hardide plc shares under the Group's EMI share option scheme with an exercise price of 5.71p per share.

Finally, the EDs participated in a performance-based EMI share option scheme where they could earn percentages of base salary should Hardide achieve EBITDA targets to September 2027.

TL;DR- Corporate governance at Hardide has always been weak, but it's not completely dreadful.

Strategy

New commercial-led strategy aims to double revenue ("to £10-12m over the next few years") without new capital by driving coatings-as-a-service and product sales into new markets.

At its essence, this is a pivot from an engineering led to a commercially led business. Some investors will cringe at this. There have been many case studies showing that these pivots towards cost cuts, profit maximisation and efficiencies ends up destroying value as talent leaves, innovation dies etc. The truth is that their focus in the past was developing niche products with small end markets, such that they weren't financially viable.

Firstly, management has emphasised the expansion of Hardide's existing business of supplying coatings as a service. Traditionally, this has been Hardide's business model. This includes:

1. Selling developed and approved CVD coatings to our customers on existing and new applications within traditional markets. Several new application trials underway with historical customers. Business development activity has also been more focused for coating as a service opportunity.

   A new oil and gas OEM located in the Middle East is extensively testing our existing CVD coatings on specific applications operating in similar operating environments where we have existing success.

2. Development of enhanced products range which involves coating consumable spare parts sold direct to end use customers.

3. Developing ancillary sales, such as offering a wider variety of pre and post treatment services, an example being low phosphorus electroless nickel plating and laboratory analysis services to external customers in order to better utilise Hardide's asset base.

4. A project to fully harmonise US plant's operational capabilities with those in the UK, giving customers choice in sourcing. Last year c.5% of Hardide's sales were processed in the UK but sold in the USA - no longer necessary. Gives customers choice on sourcing and potentially lowering their delivered costs.

5. Broaden the capability of our wet treatment line in the UK to enable this service to be offered directly to customers.

Secondly, on the Bespoke Solutions business:

1. A sales-led digital marketing programme designed to expand our network of key specifying engineers in search of solutions, with focus on areas where Hardide coatings are truly differentiated from the competition.

2. An increase in engineering, testing and tooling sales as these solutions are developed, building another income stream to support production sales;

3. A sector agnostic approach to grow and diversify revenue streams. For example, Hardide achieved our first sales to the semiconductor sector.

It's important to note that "commercialisation" doesn't mean "cut off R&D spending." In this case, it means be more "financially savvy" as shown below:

1. The commencement of a project with a team of PG students from Cranfield University to evaluate the potential for Hardide Coatings in carbon capture applications.

2. Continuing to work with a key customer in the power generation industry to further improve the performance of Hardide coatings when used to mitigate the effects of water droplet erosion on turbine blades. This follows the outcome of field trials of the components initially supplied in 2022 which, if successful, could lead to further sales in 2026.

3. Finalising the work, supported by grant funding, to assess the potential for use of Hardide Coatings in the production of green Hydrogen. Initial results have been encouraging and we are now seeking and engaging with commercial partners to take development to the next stage.

4. CVD process optimisation focused on masking material usage to enable the wider adoption of CVD in aerospace applications. Success would enable more cost effective CVD coatings solutions to be applied to the critical component area requiring protection. Grant funding is also being sought with an application submitted.

<u>Financial Situation</u>

The financials are interesting because management are quite bad at explaining them.

They highlight gross margins that are around 50%. But cost of sales (according to annual reports) is mainly made up of production salaries – management will highlight that this means that Hardide is highly operationally geared. Gross margin is flattered by the fact that most of Hardide's production salaries are semi-fixed costs. In fact, we can roughly figure out the cost structure. In 2024 there were 22 (of 38) people working in production and total wages and salaries totalled £2.3m, so we can approximate £1.3m of cost of sales equalled production salaries. That means raw material inputs (e.g. tungsten, process gases), production overheads (utilities) accounted for about £1.1m. The key driver of profitability is revenue volume relative to fixed production costs.

Operating income means far more and makes more sense, given the services Hardide offers. However, D&A overstate capital spending needs. This is not accounting fiction. It's a fact. Currently, Hardide's coating reactors are underutilised are there is too much spare capacity in the business meaning that Hardide don't need to invest heavily for growth right now. Each coating reactor has an economic life of 15 years – this was increased from 10 years a couple of years ago. Of course, the result is a lower depreciation charge on earnings, but management also equally use EBITDA in their investor presentations meaning that I don't think the intention was to swindle investors.

Anyway, the metric I think investors should track most closely is OIBDA, since D&A is noncash and capex is unlikely to match it. In the first half of 2025, OIBDA totalled £390k. However, it is important to note that UK accounting depreciates ROU assets. Therefore, we must deduct the cash costs associated with leases - £117k. From there, to be ultra-safe, we can deduct net interest costs of £70k (£203k net "cash flow" before working capital).

Free cash for the first half of 2025 was £354k – management were able to pay down £141k in loans and a working capital inflow of £151k (that is expected to reverse in the second half) and tax benefits of £49k meant that cash increased by about £290k in the period.

However, estimating working capital movements going forwards is too tricky since visibility is so constrained. What I would say is that £200k cash flow in one half is a good indicator. Annualised, that's £400k (or 15x cash flow) with plenty of room to grow.

It is important to note that annual lease costs are about £200k, with debt maturities being £200k for this year (but decreasing significantly each year after). Analysts should also note that the most critical 'bought-in' supplies for production are electricity and the gases used in the coating process. Together, these account for most variable production costs.

The way I currently think about this situation is say that Hardide's only fixed assets are really their machinery (coating reactors etc) and at realisable value, Hardide's tangible equity is running negative. Liquidation won't save investors. Only profits will.

<u>Future – Turnover, Profitability etc</u>

Given everything discussed, let's turn to the future which ought to be directly thought about.

We know cash conversion cycles have improved (annually) from consistently over 65 days between 2020 and 2022 to under 25 days in 2024. It is too early to make a judgement on 2025, but I expect improvements/steadiness at the minimum.

With new revenue lines and management's goal to double revenues, what is the profitability to look like? Well, growth is cheap from here – Hardide don't need to double headcount or spend on new reactors. There is clearly high operational gearing meaning that small revenue increases will have large cash flow impacts. This is highlighted in the Interims:

We expect to be able to fund revenue growth using internally generated cash, as the Group's ratio of profit and cash generation from incremental sales is significantly higher than its ratio of working capital to sales.

Furthermore, there are secular drivers in the works despite Hardide's investor presentations having "neutral" outlooks (I think they're underselling reality).

For example, demand from aerospace customers for advanced coating and surface engineering services is set to increase over the next 5–10 years. The global aircraft fleet is projected to grow slowly and (simultaneously) the average fleet age is increasing, creating a cycle for maintenance, repair and overhaul (MRO) services. Older and more heavily used aircraft require more frequent and advanced surface treatments to extend life and maintain performance.

In the industrials sector, it's a simple story. As industrial assets age and utilisation increases, there is a greater need for durable, wear-resistant coatings to extend equipment life and minimise downtime. Furthermore, economic pressures are forcing manufacturers to seek cost-effective solutions that improve asset longevity and reduce total cost of ownership. Advanced coatings and surface treatments play a key role in achieving these goals.

In the energy sector, applications of Hardide coatings remain promising for the medium / longer term and remain a key focus for R&D activities. Their Innovate UK grant project, which focuses on researching a new CVD coating variant supportive of green hydrogen, is expected to complete soon. Successes in initial testing has confirmed products as a promising coating solution for use and adoption in this area. As the project is expected to complete mid-way through FY25, they will be seeking customer engagement to help industrialise the solution.

I do not think it is useful to get bogged down into TAM because Hardide are such a small player (that'd it'd get distracting for the analyst) and every contract win going forward is material to the valuation.

Finally, it is true that the Group had unutilised trading tax losses of approximately £13.1m available to carry forward against future trading profits – at YE 2023. The number has increased between 2023 and present day – but has not been disclosed in more recent reports. I don't think this tax asset has been given any value.

Valuation

Of course, Hardide does not "screen" cheap nor do their historical figures look pretty. Therefore, it's tricky to work out exactly what levels of profitability Hardide will do even if revenues do double. And if we don't even know how much profitability is expected, slapping a multiple on top is even trickier. However, if we lazily annualise H1 earnings, we say that Hardide can throw off £0.78m of OIBDA and £0.64m after finance costs – on its current cost base.

And, from there, we can conservatively say employee costs total £2.5m/annum, COS ex-employee costs (utilities, raw materials) cost 25% of sales, cost of inventories total 25% of sales, R&D totals 10% of sales, finance costs (inc leases and interest) of £0.7m (which should decrease as Hardide purge the debt).

This means that on revenues of £10m Hardide generate profits (before tax, grants and depreciation) of £0.8m. Suddenly, that £6.5m valuation looks very cheap when you consider that grant income can range from £110k to £318k (last five years) and the tax losses Hardide will benefit from. However, we cannot assume capex to be negligible (even if it nowhere near D&A). I think anything between £100-200k can be expected over the next few years. Therefore, in essence, you're paying £6.5m for cash flow of c£1m/annum when the business reaches its maximum capacity (and you benefit from some cash flow in the interim).

If Hardide do successfully double revenues and achieve a sustainable level of profitability, I don't have any idea what the game plan is.

The main question is how long does it take for Hardide to scale – and will markets allow it to be "easy" enough to scale? Hopefully, I've already answered these questions.

Risks

1. Customer concentration is relatively high. In 2024, four customers in aggregate accounted for over 70% of sales and, prior to 2024, over 50% of sales were to the oil and gas sector where demand patterns have been volatile. Hardide has traditionally been a service business, with limited demand visibility and an order book duration of only around one month.

   However, once the Hardide coatings are proven as a differentiated customer solution, project business tends to be retained, provided service levels are strong, as switching costs can be high.

2. Obviously, it's true that in the past Hardide has not achieved the pace of revenue growth previously anticipated for various reasons including lack of market, lower cost coating alternatives for certain applications, long lead times to achieve technical accreditations and an overly engineering led as opposed to commercially led approach to sales and business development.

   However, Hardide is now addressing these issues, through measures such as a) a digital marketing strategy to raise brand and product awareness, targeting key specifying engineers, b) business development focus and prioritisation on niches where Hardide is differentiated relative to competitors and can provide a unique solution, c) new product and solutions business streams, including spares markets.

3. If Hardide want to invest in new reactors or more space or have to upgrade reactors, capex will increase from lower levels meaning that cash flows deteriorate. However, if that points does arise, hopefully (unlike history), Hardide have some real evidence to suggest that they'll get used.

4. Obsolescence of technology – new coating processes.

   However, new technology would face barriers: demonstrated, repeatable performance in critical applications is most difficult.

5. Cash returns to shareholders may be weak (dividends/share buybacks) in the shorter-term even if the business materially gets stronger as the company may have to use cash for working capital to support rapid topline growth.

6. Prolonged recession - aerospace newbuild activity or energy sector spends slow down.

__Catalysts__

1. New CEO / strategy begins to yield results
2. Aerospace production ramp-up leads to larger volumes for Hardide.
3. R&D yields new customers and verticals.
4. Positive OIBDA turning into free cash flow for multiple quarters.

__Conclusion:__

Inconclusion, at a £6.5m market cap, Hardide is stuck in no man's land with the market ambling, despite more going right for the company than wrong. With no need for material capex and significant operating leverage, the market is paying very little for the growth potential of Enhanced Products and Bespoke Solutions.

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