




THE CLYDE BLOWERS STORY





Please allow us to take this opportunity to introduce ourselves as a potential business partner...

Clyde Blowers rank among the world's most successful and innovative business development companies, creating wealth for all our partners.

Using our tried and tested business models, our people deploy their financial and strategic expertise to transform today's ideas into the market-leading companies of tomorrow.

We accomplish this by taking a leading role in the strategic development of each of our portfolio companies, which can include providing management for turnarounds and accelerated growth.



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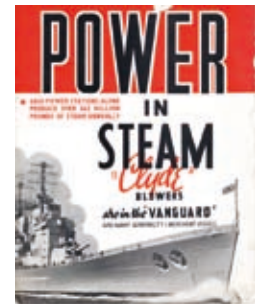
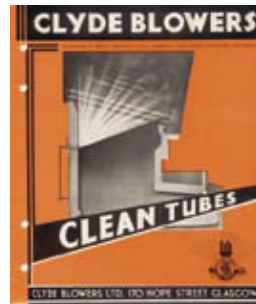
Executive Summary

This paper tells the story of the successful growth of Clyde Blowers, an entrepreneurial company based in the Glasgow area of Scotland. It is a remarkable story.

It begins with the learning experiences of its entrepreneur, Jim McColl, experiences that positioned him well when in 1992 he took a 30% stake in a small family-controlled company, Clyde Blowers, which was listed on the London Stock Exchange. The company was established in 1924. It was a response to the world-leading second industrial revolution that occurred in the late Nineteenth Century in the west of Scotland in the age of steam. Glasgow's global role was remarkable:

“By 1913, Glasgow and its satellite towns in the surrounding region of intensive industrialization produced one-half of British marine-engine horsepower, one-third of the railway locomotives and rolling stock, one-third of the shipping tonnage and about a fifth of the steel. On the eve of the First World War the Clyde not only built one-third of British output but almost a fifth of the world's tonnage, a record that was greater at the time by a considerable margin than all the German yards combined. At the heart of the heavy industrial complex with its world-wide markets was the huge range of engineering specialisms in engines, pumps, hydraulic equipment, railway rolling stock and a host of other products.

Three of the four greatest firms building locomotives were in Glasgow; in 1903 they came together to form the North British Locomotive Works, ‘the Titan of its trade’ with a capacity to produce no fewer than 800 locomotives every year. This made the city the biggest locomotive-manufacturing centre in Europe, with engines being produced in large numbers for the Empire, South America and continental countries.”¹



¹Devine (1999), pp.249–50.



Clyde Blowers initially specialised in the cleaning of railway locomotive boilers. However, the company went on from this beginning to develop equipment to clean marine boilers and then boilers used in coal-fired power plants. Essentially, Clyde Blowers was part of the process of the division of labour that Adam Smith had analysed more than a century earlier that had emerged in response to the second industrial revolution. However, by 1992 when Jim McColl bought his share Clyde Blowers was the smallest company in its market segment, had aged equipment, and moreover was not performing well financially. Yet only a little more than a decade later Jim and his team had managed to turn the company around, turning it into a portfolio of companies, many of which were world leaders in their markets.

In the last five years there have been three exits for Clyde Blowers investment partners.

The first in 2001, generated a **35% IRR** for our Investment Partner.

The second exit resulted from the sale of one of our portfolio businesses in 2002 and generated an **IRR of 346%** and a **multiple of 12.26 times the original investment** for our investment partner.

The third exit in early 2006 was the result of a listing of another of our portfolio businesses and generated an **IRR of 201%** and a **multiple of 8.6 times the original investment** for our investment partner.

Clyde Blowers' investment partners have been able to make outstanding returns from their involvement with Clyde Blowers.





Introduction

The Clyde Blowers story is a remarkable story of entrepreneurial transformation. The story begins in 1992 (although it does have a preface that goes back further than this) with the purchase of just under one-third of a small company in the Glasgow area. Not only was the company the smallest in its market segment, it had aged equipment and financially was performing poorly.

Slightly more than a decade later this company had been transformed into a portfolio of companies, several of which are now in the top three in the world in their specific markets. Even more significantly, out of the process of transformation over this period evolved a new business model that has now laid the foundation for a further period of change that will allow the companies to strike out in new directions.

The aim of this paper is to explain how this success story occurred. The explanation is provided in three sections. Section 1 describes Clyde Blowers in 2008. Section 2 explains how Clyde Blowers was able to reach the state described in the first section. Section 3 analyses the business model that has evolved and the promises that it holds for the future.





Clyde Blowers Today

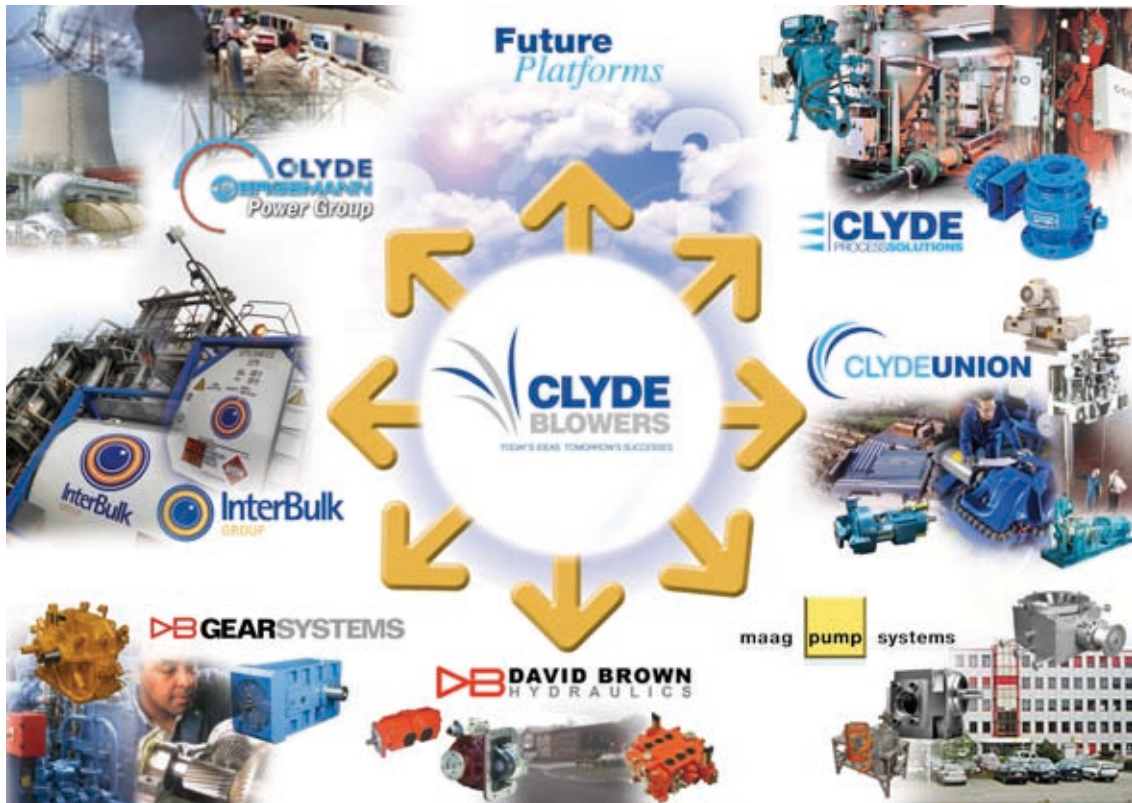
An overview of Clyde Blowers is demonstrated in *Figure 1* and *Figure 2*.



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Figure 1

Shows the Clyde Blowers that Jim McColl bought into in 1992, subsequently gave birth to many companies. Clean Cut, as we will see later, was sold in 2002. In 2006, InBulk reversed into InterBulk Group. In 2007, Weir Pumps was acquired and rebranded 'Clyde Pumps Incorporating Weir Pumps Glasgow'. In 2008, Clyde Blowers completed its largest transaction by acquiring the entire fluid & power division of Textron, adding Maag Pump Systems, DB Gear Systems and David Brown Hydraulics to the portfolio. Furthermore, the addition of Union Pumps has provided the opportunity to integrate this business with Clyde Pumps to create Clyde Union.



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Figure 2

Clyde Blowers is a portfolio of companies co-ordinated and controlled by a hub of investors under a lead-investor. Currently Clyde Blowers operates mainly in seven operational areas: clean energy technologies, oil & gas, mining & metals, intermodal transport & logistics, pump technologies, gear systems and hydraulics. *Table 1*, on the following page, shows the corporate groupings that correspond to these operational areas.



Table 1
Clyde Blowers' Operational Areas and Corporate Groupings.

OPERATIONAL AREA	CORPORATE GROUPINGS Organised around:
Clean Energy Technologies	 
Intermodal Transport & Logistics	
Pump Technologies	 
Gear Systems	
Hydraulics	



Clyde Blowers is essentially the Hub. The company's distinctive competencies involve the supply of complete process solutions, systems, equipment and services primarily for customers in the power and environmental engineering market. These competencies allow Clyde Blowers' customers to reduce their capital costs and improve their capital utilisation in areas such as thermal power plants, metal and mineral processing, and the processes that are related to these areas. These economic benefits arise from improved process efficiencies, energy savings, lower emissions, the extension of plant operation periods, and the reduction in maintenance costs.

Proof of the competencies that Clyde Blowers has accumulated over the years comes from its **leading global position** in a number of markets.

For example, Clyde Blowers is:

- Number one in the world in **fly-ash handling and boiler-cleaning/boiler efficiency in coal-fired power plants**.
- Number one in **process improvements in the handling of copper concentrate and other non-ferrous metals**.
- InterBulk Group is Europe's number one for **intermodal dry bulk transportation** and in the **hazardous liquid chemicals market**.
- One of the world's leading providers of **innovative pumping solutions**, with significant expertise in **hydraulic design & engineering across power, upstream oil & gas, downstream oil & gas, water & waste water and various industrial sectors**.
- Number one in **granularised coal injection for steel-making**.
- Number one in providing **pump solutions** to the **nuclear industry**.
- One of the world's leading providers of **gearing solutions**.
- One of the world's leading providers of **hydraulic systems** with industrial markets

Clyde Blowers currently has 83 companies operating in a total of 27 countries and employs approximately 5,000 staff.



How was Clyde Blowers Able to Achieve this Success?

The Clyde Blowers story is a story of entrepreneurial success. The crux of the story begins in 1992. However, in order to understand what happened in 1992 it is necessary to understand something about the background of the entrepreneur that drove the story, Jim McColl. This is the preface to the story.

The Preface

Jim McColl left school at the age of 16. His first job was that of apprentice in one of Glasgow's leading engineering companies, Weir Pumps. After working for six years with Weir Pumps he left to study full time for a BSc degree in Technology and Business Studies at Strathclyde University. After this degree he returned to Weir Pumps for another three years during which he studied part-time for a Masters degree in Business Administration.

In 1981 Jim was appointed to a senior management position in Diamond Power Speciality Limited. This was an engineering company that supplied equipment to the power industry worldwide. At Diamond Power he was in charge of engineering, project management and manufacturing. At the same time he did a part-time Masters degree in International Accounting and Finance.

In 1985 Jim was head-hunted by Coopers & Lybrand as a senior consultant in corporate care. His job here was to work with companies that were experiencing financial difficulties and needed to be turned around. In 1986, realising that he could do similar work on his own account, he left Coopers & Lybrand and became a self-employed 'company doctor'. After several successful turn-arounds he bought in 1992 a 29.9% stake (the largest stake available) in a small Scottish engineering company, Clyde Blowers, which was listed on the London Stock Exchange.



From the point of view of an analysis of the evolution of Clyde Blowers this rather dry career history serves to illustrate a very important point. By the time he bought his stake in Clyde Blowers Jim had already accumulated the experience and knowledge that would allow him not only to see the potential in a company that the stock market had significantly undervalued, but also to implement the necessary steps that would result in its substantial revaluation and growth.

First and foremost Jim had learned a great deal about the engineering processes that were the life blood of firms in many industries. His knowledge also included specific details about the power industry and its operations. Just as importantly, his company doctor experience had taught him how to improve a firm's management performance and process technologies. Furthermore, his academic work had given him both a broader context within which to situate his hands-on experience as well as an appreciation of some of the other dimensions of the work he was doing, such as accounting, finance and corporate strategy. This knowledge base he would put to work in Clyde Blowers. In doing so, as we shall see, his learning would move in new directions that would provide more knowledge that would create further opportunities.

How was Clyde Blowers Able to Achieve this Success?



Turning Clyde Blowers Around

In 1992 Clyde Blowers had a turnover of around £4 million. However, its core business was making a loss. This loss was being subsidised by investment income that the company was also earning. In 1992 Jim led a management buy-in which ended Clyde Blowers' status as a family-run business.

The first job that Jim faced was to use his company doctor skills and his industrial process knowledge and experience in order to improve Clyde Blowers' processes, reduce its costs, and improve its profitability and competitiveness.

Strengthening the Team

In tackling these issues Jim was fortunate to attract several highly talented individuals to his team. One of these was Bill Thomson, an engineer who had worked with him both in Diamond Power and in subsequent company doctor assignments. Bill Thomson started work on the factory floor at the age of 16 and continued to study until he was promoted to a technical position, he then studied at Strathclyde University where he obtained an honours degree in Mechanical Engineering. Bill has worked for Diamond Power, Babcock and Hunting Oilfield Services in various roles including draughtsman, project engineer, project manager, manufacturing manager, operations director, commercial director and divisional director.

Bill has worked as an Executive Director within the Clyde Blowers portfolio of companies since 1992 holding many and varied posts in the UK and overseas. He has been responsible for the development of the Clyde Blowers portfolio in China, setting up four companies and has made more than 90 visits to China. Bill was the Chief Executive of CleanCut Technologies Limited, a subsidiary of Clyde Blowers, which developed solutions to environmental challenges in the offshore oil and gas industry.

Bill is currently the Chairman of InterBulk Group plc, having recently led the listing of InterBulk Group on the London Stock Exchange and he continues his interests in China.

Another of these talented individuals was Alex Stewart who Jim met when he (Alex) was pitching for the audit of Clyde Blowers for Ernst & Young. Impressed by his talents Jim took him on to join the team. Having achieved an outstanding performance in his accounting qualifications and with a fine understanding of financial matters Alex became a key player in the development of Clyde Blowers. He joined the group in 1995 from Ernst & Young, Chartered Accountants where he built up 18 years experience as a Senior Manager with Joint Responsibilities in Corporate Finance and Audit. This included extensive experience in deal structuring and mergers and acquisitions. Alex had a wide variety of clients operating in a number of industries including; oil and gas; engineering, petrochemicals; electronics and food. These clients took him round the globe and he spent periods of secondments overseas, particularly in his role as an upstream and downstream oil and gas expert.

Within a number of the Clyde Blowers portfolio of companies Alex has worked as an executive director. He has helped develop the group strategies both financially and otherwise and has helped lead a number of the acquisition and disposal projects within the portfolio.

These days he spends as much of his time on leadership and operational issues as he does on 'purely' financial matters and became CEO of Clyde Process Solutions in 2006.

Alex holds a Bachelor of Accountancy from Glasgow University and is a Qualified Chartered Accountant. He received the Scottish Finance Director of the Year award in 2003.

How was Clyde Blowers Able to Achieve this Success?



A third key member of the team is Graham Lees. Graham joined Clyde Blowers at the beginning of 1996. He also joined from Ernst & Young where he had been a Senior Audit Manager with over 12 years experience in a wide variety of industries including banking, manufacturing, transportation, electronics and healthcare. Graham is a Chartered Accountant with a Bachelor of Accountancy degree from Glasgow University.

During his time with Ernst & Young, Graham spent one year on secondment to a multi-disciplinary team that advised on the privatisation of the water industry in England & Wales. This team included accountants, lawyers, economists and engineers and gave Graham a great opportunity to develop his experience in such an environment. Graham was also a member of the national training team, instructing on a number of training courses during that time.

Graham joined Clyde Blowers as Company Secretary & Group Financial Controller and has helped develop and deliver the financial strategies of the portfolio companies, playing a significant part in the acquisition projects to date. Graham is an Executive Director of Clyde Blowers and is Chief Financial Officer of Clyde Bergemann Power Group.

Bill, Alex and Graham have become the backbone of the team over the past ten years and during this time have built a highly competent support team in corporate finance, corporate law, contract law, marketing, IT and administration.

The Proof of the Pudding...

The proof of the pudding was in the eating. By the end of 1996 the annual turnover of Clyde Blowers had grown from around £4 million in 1992 to approximately £80 million. The company's market value over this time increased from £2 million in 1992 to £45 million in 1996. In January 1999 a group of investors led by Jim took the company private in a management buy-out.



Bill Thomson



Alex Stewart



Graham Lees

How was Clyde Blowers Able to Achieve this Success?



Using Clyde Blowers as a Platform

A Learning Platform

At the time of Jim's buy-in Clyde Blowers was one of the smallest and weakest of the suppliers in its market segment. But with the improvements made in the company it moved to being one of the most dynamic. This put the company in a leading position financially, creating new opportunities.

One such opportunity was the chance to acquire some of its competitors. With Clyde Blowers re-invigorated, the funding was forthcoming. Seizing this opportunity Clyde Blowers was eventually able to acquire 6 of the remaining 7 companies in this market segment. This left one major competitor.

Two major consequences followed from this set of acquisitions. The consequences would have important implications, both for the growth of Clyde Blowers and for the development of its business model.

The first consequence was that the acquired companies created further opportunities for learning and knowledge accumulation. The reason is that each of the acquired companies had its own specific set of knowledge and skills. Different companies, even in the same market segment, evolve in different ways, developing different sets of skills and knowledge. The reason for these differences is that to some extent the background of each company is different, it has different human and technological resources, it is able to take advantage of different opportunities, and faces different threats. Furthermore, these companies were based in different countries, further accentuating their differences. The resulting variation in the knowledge of each company created the possibility of important gains from inter-company learning. Through such learning best-practice could be established, bringing significant benefits for all of the companies.

Having acquired the companies Jim and his colleagues set about bringing engineers and management from Clyde Blowers and the acquired companies together in order to learn from one another. In this way, knowledge that previously was largely confined within the boundaries of each company became shared knowledge.

The result was a two-fold knowledge gain. On the one hand, each company was able to improve its own processes, resulting in a reduction in cost, increase in efficiency and increase in profitability. On the other, each company was able to improve the processes, products and services that it provided to its customers, contributing in this way to the health of the user industries. In this way Clyde Blowers was able to become a 'Learning Company', harnessing the learning process and enjoying its fruits.

How was Clyde Blowers Able to Achieve this Success?



A Consolidation Platform

The second consequence was that the acquisition process was also the driver of consolidation in Clyde Blowers' market segment. But consolidation was to have significant further effects.

Most significantly, by reducing the intensity of competition that had existed between the 8 competing firms in the segment, consolidation allowed for an increase in efficiency, facilitating lower prices, better quality, and improved profit margins. This is a normal consequence of consolidation in an industry, unless barriers to entry into the industry are low. However, in Clyde Blowers' case high entry barriers resulted from the distinctive competencies needed to compete effectively in this segment. The accumulation of these competencies, as we have already seen, is a complex process involving a good deal of tacit knowledge². Many years of experience is needed to acquire this knowledge.

As a result this knowledge is 'sticky', that is it cannot easily be acquired by outside companies thinking of entering the industry. The result is relatively high barriers to entry.

In turn, improved profit margins have further beneficial consequences, fuelling a virtuous circle of emerging benefits. Improved profit margins have allowed greater investment in new technologies, that in turn have led to greater benefits for customers.

² Tacit knowledge exists when one knows more than one can tell. That is, when it is not possible to codify (eg put into writing or a blue-print) all the knowledge that it is necessary to know.



Using the Platform to Diversify

Into Materials Handling

Clyde Blowers and its acquired companies also created new opportunities for diversification, opportunities that were not foreseen at the time of the acquisitions. Furthermore, as we will see below, these opportunities also provided more seed that would contribute to the elaboration of Clyde Blowers' business model.

As we have seen, the original core business of Clyde Blowers was the cleaning of boilers. However, by using the company as a 'platform' Jim and his colleagues were able to diversify into other neighbouring fields. The first such field was in the area of materials handling.

In 1994, two years after Jim bought his stake in Clyde Blowers, the company acquired another company called Simon Macawber Limited. This company was established in 1974 as a supplier of dense-phase pneumatic conveying equipment and systems to general industry. Over the years a significant part of its business came to be in the Power Generation Industry, the same industry that was important for Clyde Blowers. Simon Macawber supplied its equipment and systems for some of the largest coal-fired power generation utility boilers in the world. Simon Macawber was later renamed. First it became Clyde Pneumatic Conveying Limited (the name indicating the company's competencies) and then Clyde Materials Handling Limited. In 2006, Clyde Materials Handling Limited reversed into an AIM shell company and was re-named Clyde Process Solutions plc (shown in [Figures 1 & 2](#) and [Table 1](#) above). In April 2007, Clyde Process Solutions acquired MAC Equipment Inc., North America's leading provider of pneumatic conveying systems. This acquisition has provided Clyde Process Solutions with a solid base to grow and diversify into other areas of industry and has seen its market value increase by a factor of 4 as a result.



In this way Clyde Blowers also served as a platform which was used as a springboard to enter into the new (but related) field of materials handling. Once entered, this field was to establish its own trajectory, leading to a new diversified area of activity with its own learning processes and opportunities. As is shown in [Figure 1](#), materials handling became Clyde Blowers' second operations area.

Into Oil & Gas Waste Disposal

A major problem facing companies drilling for oil and gas in the North Sea and elsewhere arose from the need to dispose of the waste that emerges from drilling operations. Increasingly concerned about environmental problems, regulators had begun to insist that companies act to reduce pollution. Shell and BP approached Clyde Blowers regarding the problem. This was precisely the kind of problem to which they could apply their distinctive competencies in search of an appropriate solution.

The solution was a pneumatic (*ie* air-based) system to safely and cleanly remove the drilling waste and dispose of it. In order to exploit this solution commercially, a new company was established, Clean Cut Technologies. Clean Cut Technologies rapidly became the world leader in this field.

In 2002 the decision was made to sell Clean Cut Technologies to a buyer which had a number of complementary products and could therefore make better use of the company accelerating its growth and development. Proceeds from the sale allowed Clyde Blowers' investors to earn a very healthy return on their investment.

How was Clyde Blowers Able to Achieve this Success?



Into Intermodal Transportation Systems

InterBulk Group is one of the worlds most successful and innovative logistics companies for intermodal transportation of bulk commodities.

The logistics business began with Clyde's involvement in the construction of London's Heathrow Airport, where a new terminal was being constructed. This required delivery to the site of a huge amount of fly ash. The fly ash had to be delivered within two miles of Heathrow by rail and then transferred to trucks for the remaining two mile journey. The problem was how could this be done efficiently, with minimal waste, and without environmental damage? As in the case of Clean Cut Technologies, this problem gave Clyde Materials Handling the opportunity to apply its competencies in developing an intermodal solution.

An immediate difficulty was that existing intermodal transport and storage solutions tended to be confined to the transportation of liquids. However, the transport of powders such as fly ash presented different kinds of problems. It was in solving these problems that their competencies in pneumatic conveying (using blown air) proved indispensable.

In order to develop the solution commercially, a new company was spun-off from Clyde Materials Handling, namely InBulk Technologies – which has rapidly become a world leader. The reason behind this success is that its processes have enabled its customers to significantly cut their project costs, thus adding substantially to profitability, whilst at the same time significantly reducing CO₂ emissions and traffic congestion. In the case of the Heathrow Airport T5 Project, the customer has been able to save to date over 1 million miles of road transport, the equivalent of 43 times around the world.

However, InBulk Technologies has also been used as a platform to create a strong presence within global intermodal logistics services, for a wide range of bulk materials.

Today, InBulk Technologies is part of a substantial group of companies involved in intermodal transportation and logistics called InterBulk Group, which trades on the AIM market. Clyde Blowers established InterBulk and has used this business as a vehicle to develop market share in the transportation and movement of bulk commodities. Firstly, InterBulk acquired UTT (United Transport Tankcontainers) in February 2006, the third-largest tank container operating company in the world. UTT specialises in the bulk transport of mainly liquid chemicals and has an impressive fleet of 6,500 tankcontainers.

UBC was the next company to be acquired by InterBulk in April 2007. UBC are Europe's largest dry bulk container operating company in Europe by fleet size and have 14,500 specialist containers at their disposal. UTT and UBC have added a significant logistics infrastructure as well as access to complementary customers. At the present time, the international tankcontainer markets are fragmented, providing an opportunity to drive consolidation.

InterBulk's strategy is to create one integrated group offering four forms of intermodal container technology: ISO-Veyors, ISO-Tanks for liquid chemicals, Flexi-Tanks and Flexi Liners. The combination of UBC, UTT and InBulk, creates a global platform capable of providing a range of intermodal solutions for any liquid, powder or granular material, anywhere in the world. The combination of these intermodal capabilities enables us to deliver excellence in customer service and shared benefits for all stakeholders.

How was Clyde Blowers Able to Achieve this Success?

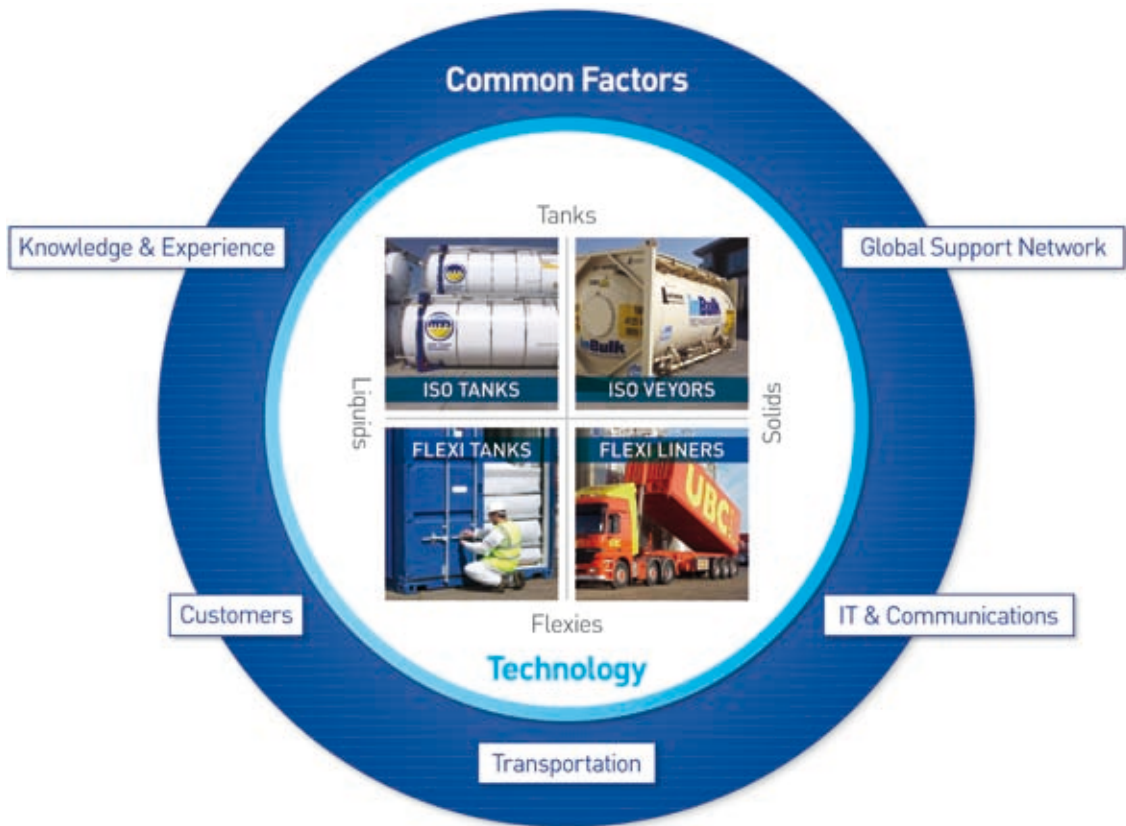


Figure 3

The Technology Matrix above demonstrates graphically the collective capabilities of InterBulk Group. InterBulk can offer a comprehensive range of bulk transportation and logistics services.

How was Clyde Blowers Able to Achieve this Success?



Into Pump Manufacturing, Hydraulic Design & Engineering

In 1871, two brothers, George and James Weir, founded the engineering firm of G & J Weir. From their Cathcart works on the south side of Glasgow, Weirs quickly established a reputation for inventing pump and valve technologies that were utilised successfully on ship engines, oil pipelines, desalination plants and power stations across the world.

On Tuesday 8 May 2007, over 135 years after the Weir brothers founded their business, Jim McColl announced the acquisition of Weir Pumps (Glasgow) from The Weir Group plc.

As a result of this transaction, the diverse portfolio of technologies, process knowledge and expertise generated by Weir Pumps will be incorporated into a newly created company, Clyde Pumps incorporating Weir Pumps Glasgow, which includes the heritage brands – Weir Pumps, Girdlestone, Mather & Platt, Harland, Drysdale, WH Allen, Allen Gwynnes, Eimar Weir and Weir Pacific.

Clyde Blowers is delighted to welcome Weir Pumps (Glasgow) into its portfolio of companies. Over two centuries the business has demonstrated that it has an outstanding track record of designing innovative pumping solutions for customers across a wide range of industries. Clyde Blowers believe that this heritage, complemented by a skilled workforce, will provide a strong platform to grow both market share and profitability significantly.

Weir Pumps (Glasgow) has an impressive reference list of customers and Clyde Blowers is working closely with its new colleagues to continue developing innovative solutions to their pumping requirements.

The strategy for the business going forward is to continue full scale pump manufacturing including both new equipment and spare parts. Initially this will be from the existing Cathcart plant. As a result of the current strong order book, the company has a healthy workload for the next two years. With a confident vision of the future, the group is working hard to build on this strong order book growing the business through organic growth and add-on acquisitions.

Clyde Blowers' vision for the acquired business is to be a centre of excellence in the fields of Pump Manufacturing, Hydraulic Design and Engineering. We aim to employ the best designers and engineers, re-establishing this business as a world leader in the markets in which it operates.

How was Clyde Blowers Able to Achieve this Success?



Building a Market Leading Presence in Pump Technologies, Gear Systems and Hydraulics

In September 2008, Clyde Blowers completed its largest transaction to date by acquiring the entire fluid & power division of Textron, an American Fortune 500 multi-industry company, in a deal worth over \$1 billion.

The Clyde Blowers Team, led by Jim McColl, recognised that this particular division of Textron offered a range of complementary technologies to Clyde Blowers existing portfolio of companies, as well as the opportunity to expand its presence in the global pumps market. The acquisition, which was uniquely structured including a debt package from a club of four major banks, comprised of four separate businesses, which are:

Maag Pump Systems

Based in Oberglatt, Switzerland, Maag Pump Systems are a global provider of highly engineered polymer and compounding pumps, extrusion pumps, screen changers, filtration systems and high end industrial pumps. Maag has approximately 275 employees at 8 locations in 7 countries.

David Brown Gear Systems

Based in Huddersfield, England, David Brown Gear Systems are a leading provider of gearing solutions to large and growing industries, including mining, metals and minerals, power, cement, oil & gas, food and beverage. It employs 1,113 employees at 18 locations in 11 countries.



David Brown Hydraulics

Based in Poole, England, David Brown Hydraulics are a leading manufacturer of gear pumps and motors, directional control valves, pilot controllers, and the components primarily for the mobile machinery market but also for applications within industrial markets. With 119 employees at 10 facilities located in 9 countries, David Brown Hydraulics has global design, services and supply chain capabilities.

Union Pumps

Based in Battle Creek, Michigan, US, Union Pumps are a global provider of highly engineered centrifugal and reciprocating pumps and associated aftermarket parts and services. The company supplies pump solutions to the nuclear power, petrochemical processing, desalination and industrial markets. Union Pumps has approximately 730 employees at 10 locations in 6 countries, including the US, Canada, France and the UK. Union Pumps has now integrated with Clyde Pumps, the company formed by Jim McColl following the purchase of the iconic Scottish engineering company, Weir Pumps, from Weir Group in May 2007. Together, this enlarged business will go to market as Clyde Union, and creates not only the market leader in pumps for the nuclear power market but also a powerful global provider of pumps for the conventional power, downstream oil & gas, upstream oil & gas, water and industrial markets, including desalination, as well as a comprehensive range of after market services.

How was Clyde Blowers Able to Achieve this Success?



The Future Using the Clyde Blowers Business Model

Using the Platform to Innovate

The platform is also used as a base for innovation across the portfolio's activities. Innovation in this context refers to the development of new processes, products and services, adding value to the companies' existing offerings. Examples include the development of heat-flux sensors which work in conjunction with analysing software and the development of advanced water canons, to establish Clyde Bergemann Power Group as the global technology leader in Intelligent Sootblowing, significantly improving boiler efficiency.

The development of Clyde Blowers as a portfolio of companies and the simultaneous development of its business model have been intertwined in a co-evolutionary process; changes in the former have resulted in changes in the latter; as the latter has changed so it has brought about changes in the former.

As rapidly becomes apparent from an understanding of the Clyde Blowers business model, this model facilitates future growth for the portfolio of companies as a whole. In short, emerging from the initial use of Clyde Blowers as a development platform, this model is scalable and may be replicated in numerous other industries. This becomes clear through an elaboration of this business model.

The Clyde Blowers Business Model

The Clyde Blowers Business model involves 6 stages, as shown in [Table 2](#) on the following page.





Table 2

The Clyde Blowers Business Model





The Role of the Hub and the Individual Portfolio Companies

The current organisation of Clyde Blowers was depicted in [Figure 1](#) on page 7. This figure also demonstrates the current operational areas as well as future areas still to be defined. In order to understand how the portfolio of companies as a whole is organised, it is necessary to say more about the role of the Hub and the individual portfolio companies.

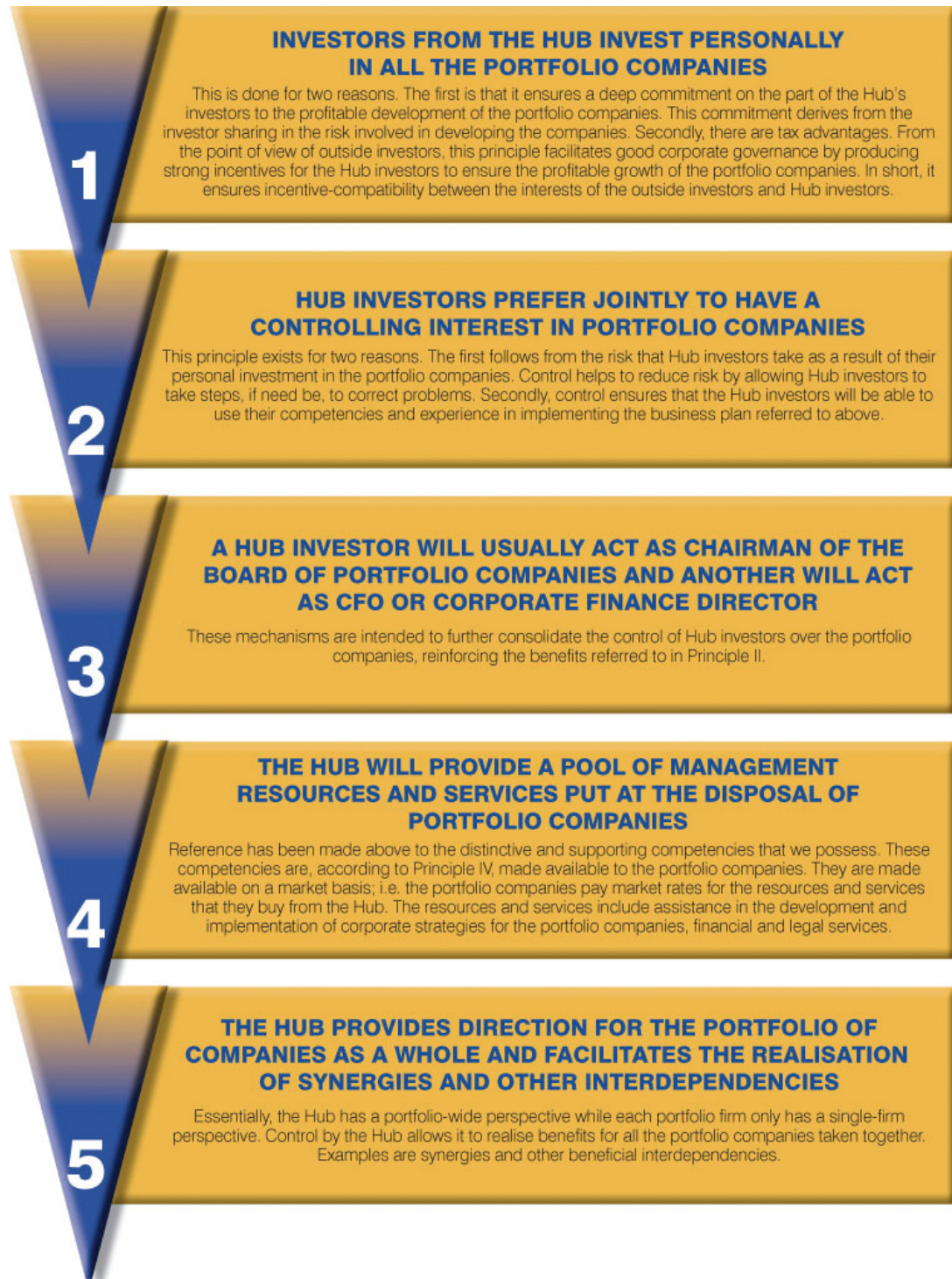
How does the Hub work?

The Hub consists of 8 Investors, under a Lead-Investor. The activities of the Hub are guided by a set of flexible principles, as shown in [Table 3](#), which is featured overleaf.



Table 3

Role of the Clyde Blowers 'Hub'





What Powers do the Individual Portfolio Companies Have?

While, as noted in the last subsection, the Hub exercises an important amount of control over the portfolio companies, the latter are nevertheless significantly empowered. This empowerment generates strong performance-related incentives at the level of individual portfolio companies.

In most cases an individual portfolio company will have its own CEO who is not one of the Hub's investors and will have its own Board of Directors including independent directors. The CEO provides an independent source of leadership and is appropriately incentivised in terms of performance-related pay. Key senior and middle managers are similarly incentivised.

In short, there is an appropriate division of labour between the Hub and the individual portfolio company. While the Hub provides important competencies and resources, and also carefully exercises the functions of monitoring and control, the portfolio company, facing its customers and deploying its technologies and skills, gets on with the business activities that ultimately generate profits and growth. High-powered incentives help to ensure that both parties efficiently do what is required of them.

New Areas into which to Diversify

As shown in *Figure 2*, presently Clyde Blowers has seven portfolio companies using its scalable business model, however, the future plan is to continue to expand within process industries. Possible target industries include the following:

- Conventional Power
- Nuclear Power
- Clean Energy Technologies
- Oil & Gas
- Water & Waste Water
- Pollution control
- Industrial processes in Metals & Minerals
- Intermodal Transport & Logistics



Conclusion

This paper has told the story of the evolution of a remarkable entrepreneurial company, Clyde Blowers, which began in 1992 with the shrewd acquisition of a minority shareholding in a small, under-performing company and ended in 2008 with the emergence of a global group of portfolio companies, many of which are world-leaders in their fields. As the paper shows, the evolution of Clyde Blowers has been accompanied by the co-evolution of its business model. It is this business model that now provides the platform, the basis for the Clyde Blowers group's future expansion and growth, a process that will create opportunities for partners (including outside investors, acquired companies, partner companies, suppliers, and customers) at the same time as it enriches the group itself.





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