

Immersion Technologies International plc



Immersion's technology covers both electrostatic (ESL) and conventional cone loudspeakers (CCL). It is able to manufacture ESLs – widely acknowledged as the superior speaker technology – at prices and in volumes never achieved before. It can also produce CCLs with lower distortion levels and in smaller enclosures than hitherto possible. As a result Immersion has the ability to take market share from other manufacturers.

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Contents

Executive Summary

Key Points	3
Overview	4
Valuation	6
Key Risks	8
Corporate Overview	9
Markets	13
Operations	22
Financials	23
Appendix: Management	24

I certify that this report represents my own opinions.

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Overview

The prevalent medium in the loudspeaker marketplace today is the box speaker or conventional cone loudspeaker (CCL) which accounts for approximately 98% of all speakers currently manufactured. However, it is well recognised by industry experts that the electrostatic loudspeaker (ESL) is by far the better transducer by virtue of its lighter mass giving it lower distortion or improved clarity – ‘cleaner’ and ‘clearer’ sound.

So why is CCL the dominant medium? Historically, the ESL has been plagued by labour intensive building processes and other physical constraints resulting in high production costs. This has placed the ESL in a niche market, overlooked by mainstream manufacturers, retailers and consumers.

Advantages of Immersion’s technology

CCL

- lower distortion (than other CCL),
- smaller size,
- unconventional placement (unlike most CCL),
- lower cost.

ESL

- historical problems eliminated,
- lower distortion (than all CCL),
- large volume manufacturing,
- significantly lower cost than other ESL.

Immersion was incorporated in March 2006, to acquire and commercialise IP rights related to ESL technology, developed by Winovate Pty Ltd, an Australian technology incubator. This technology includes advances in design, materials and crucially manufacturing processes, which management believes have not only resulted in improved sonic performance but more importantly will significantly reduce the cost per unit and allow greater volume production than has hitherto been possible. With the acquisition of Whise Acoustics Ltd in October 2006, Immersion also now owns the rights to unique IP in CCL technology and in particular to award winning subwoofer designs.

The global loudspeaker market extends far beyond the domestic hi-fi or music system, encompassing home entertainment and movie systems with multiple (that is 5.1 and 7.1) speakers, televisions, computer systems and automotive systems. Global Industries Analysts Inc. (“GIA”) has estimated the global loudspeaker market as worth about US\$3.5bn in 2005, reaching US\$3.6bn in 2006 and growing at about 3% p.a. At present, ESLs account for 2% of this market offering significant scope for growth for the company even within the market as defined by GIA.

However, the GIA analysis of the market is confined to what could broadly be described as separate or discrete speakers for domestic music systems, home theatre systems etc as opposed to built in speakers. The addressable market is almost certainly far larger and can be further extended by looking to the automotive market, where in excess of 65m cars, virtually all with some form of music system are sold annually and even more importantly the television market, currently undergoing disruptive change with the reduction in costs of LCD and plasma technology, the shift to digital TV and the advent of HDTV propelling sales of flat screen displays. Although the flat panel TV market is a US\$50bn plus market, products have become commoditised and TV manufacturers’ margins are under huge pressure. Immersion sees the quality of its speakers as a differentiating factor for these manufacturers in a market that has traditionally had poor sounding speakers.

Immersion believes that the low market share achieved by ESL speakers is due in large part to their price premium over CCL or box loudspeakers. We see this as one of several limiting factors. A cursory look over the history of ESL reveals that more than 80 companies have tried to produce ESLs. Fewer than ten have ever produced more than one thousand speakers, which prove difficult to build to a consistent quality in commercial volumes, giving rise to a price premium.

Currently, only a handful of companies make such speakers, which are virtually without exception large, expensive and demanding by way of the load on the associated amplifiers. As a consequence of these difficulties and despite the advantages of ESL in several areas, the market remains dominated by CCL. In consequence, most speakers are boxes.

Management believes Immersion's new technology addresses most of the disadvantages that have hitherto prevented ESLs from making much of an impact. The new process allows ESLs to be manufactured in commercial volumes, in a range of sizes and at prices competitive with CCL. This represents a major breakthrough in speaker design and manufacture and offers attractive potential. Moreover, the technology also purports to offer equivalent performance to ESL speakers currently on sale at higher prices. Management has commissioned a competent third party report, which tested prototypes against existing competition and verified these claims.

A more palpable endorsement comes in the form of a contract. On 22 December 2006, Immersion signed an agreement to supply Nakamichi Corporation with hybrid speakers incorporating both its CCL and ESL technology. Nakamichi is a long established name in home entertainment and audio-visual products, with a well-recognised commitment to engineering excellence. Its order is a strong endorsement of the engineering principles of the technology. The first contract is for a single range of product named the "Phoenix" which is for three years, on a schedule obliging Nakamichi to order up US\$5.5m in the first 2 years, with scope to expand to US\$12.1m over the period. Should demand for the product exceed the budgeted expectation, this is likely to increase.

Immersion's strategy is to concentrate on design and manufacturing its products in the initial stages of its development. Its chosen route to market is through supplying to Consumer Electronics companies (CEs). This avoids the need for a large sales force to build up relationships with distributors, independent retail dealers and a large promotional budget. Immersion hopes to establish its presence through the supply to CEs but with acknowledgement of the technology used in similar fashion to THX or Dolby. To this end, Immersion has applied to register its trademark to represent its technology internationally, HD-A[®] or High Definition – Acoustics[®] (already registered in Australia).

Immersion's manufacturing and final assembly is to take place in China, in common with a large proportion of the companies in this industry. While design and development are commonly in Europe, Japan or the US, it has become common practice to manufacture in China to take advantage of its lower labour rates and growing expertise in volume production. Immersion has identified a facility in Nanjing and the lease on a 4,100m² facility with an option on a further 8,200m² is due to be signed shortly.

Immersion is to retain control of final assembly, key processes and manufacture of key components at its Nanjing facility, to utilise its already established relationships to take advantage of local manufacturing expertise by subcontracting the manufacture of other components and sub assemblies.

Valuation

The global market for discrete loudspeakers is neither vast at around US\$3.6bn nor particularly high growth at around 3% p.a. However, it is densely populated with companies both large and small operating both across a broad market segment and or in specialised niches such as ESL. It is not necessarily, an environment in which you might expect to find a high growth company and there are not many quoted comparables, making the task of valuing such an animal more complex. However the overall loudspeaker market is a far larger entity when it encompasses speakers for in-car entertainment, TV sets and computer monitors.

We have valued Immersion on a discounted cashflow basis, modelling the cash flow expected to be generated by its operations in these areas. We have assumed that Immersion is able to use the technology and IP that it has acquired to successfully manufacture CCL's and ESLs in commercial volumes and the valuations that we have arrived at are wholly dependent on this precondition. One caveat is that as yet Immersion has not begun to manufacture and there is therefore the possibility however remote that it is not able to implement its processes. We would rate the probability of this outcome at no more than 10%.

We have prepared three valuations on core, high and low assumptions. Our free cash flow forecasts result in a central valuation of £48.6m. The central case assumes the initial strategy to supply CEs remains constant and to this end we have included sales to TV manufacturers, but have not included retail sales until 2010. We have also taken into account the fact that this is a business in which output and sales will take time to ramp up. For instance, the lead time on being awarded a contract to design and supply an OEM car system is in the order of 18 months and for a TV set it might be up to 12 months.

Our lower case assumes more challenging markets and after the initial start up years we have assumed a more rapid reversion to the overall market growth rate of 3%. This results in a valuation of £21.1m.

Our high case valuation includes a move into retail by the company after the initial build up with the CEs. This gives a valuation of £115.4m but is something of a blue-sky scenario.

As we have already said these valuations depend on Immersion being able to start up and maintain manufacturing capability as the volumes ramp up significantly in future years. The constraining factor in ESLs has not been the sound or demand for the product but primarily the inability of companies to produce them in volume.

Benchmarks

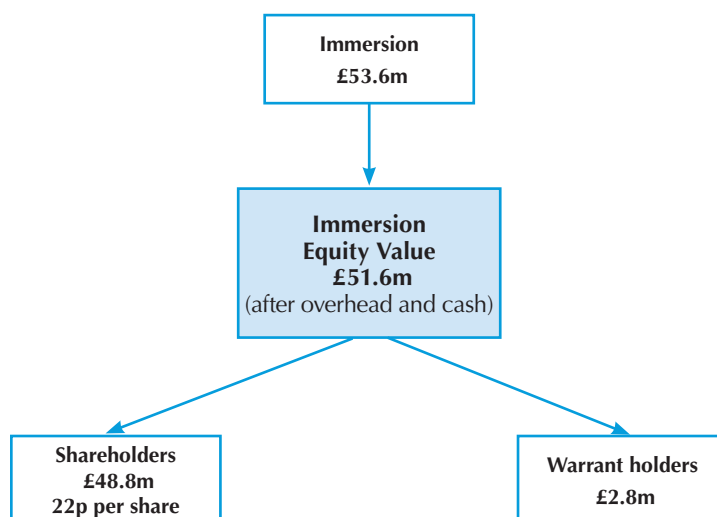
The most immediately obvious comparator is NXT, because it appears to use flat panel technology but this turns out to be an unfortunate choice. The technology is different and although NXT has licensed others to produce its product it has not itself implemented a successful manufacturing operation nor has it ever turned a profit. Despite coming from the same stable as Quad the most famous and longest established ESL manufacturer, under the ownership of Verity, it used different flat panel technology to Quad which has limited audio qualities and thus commercial success. It went with unproven technology and manufacturing processes and has subsequently licensed its technology to manufacturers aiming at the bottom of the market that is the price-sensitive audio and computer-peripherals segment. NXT also belongs to that unfortunate group of companies losing more than 90% of their value since the technology peak of 2000 to 2001. In this light we raise NXT only to dismiss it as a comparison.

Valuation Summary (£m)

Scenario	Core	Optimistic	Pessimistic
Value of Firm	53.6	128.1	22.8
Add: starting cash + new funds	3.7	3.7	3.7
Total current value for firm	57.3	131.8	26.5
Less: starting & new debt	0.0	0.0	0.0
Total value to equity claims	57.3	131.8	26.5
Prob of successful scaleup*	90%	90%	90%
Expected value of equity	51.6	118.6	23.9
Less: Options/Convertibility	2.8	2.8	2.8
Ordinary Equity Holders	48.8	115.9	21.1
Value per share (p ps)	0.22	0.51	0.09

* adjustment for the risk that the planned manufacturing process may not be successfully implemented

Components of Immersions' Entity Value



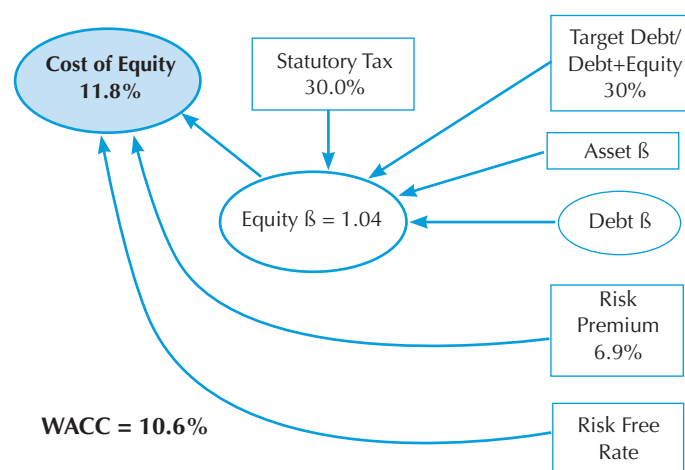
Scenario Assumptions

	Pessimistic				Core				Optimistic				
	2007F	2008F	2009F	2010F	2007F	2008F	2009F	2010F	2007F	2008F	2009F	2010F	
Operating assumptions													
Avg unit cost (£)		97	43	37	31	97	27	23	21	97	31	26	24
Avg unit price (£)		452	108	74	59	452	59	50	43	452	71	53	48
Avg unit gross profit (£)		355	65	37	28	355	32	27	22	355	40	26	24
Total units sold		752	51,302	195,162	427,822	752	168,802	545,100	918,333	752	173,132	609,286	934,046
Profit & Loss (£'000)													
Revenues		340	5,555	14,377	25,253	340	9,962	27,010	39,721	340	12,272	32,134	45,185
COGS		(73)	(2,203)	(7,150)	(13,214)	(73)	(4,583)	(12,542)	(19,587)	(73)	(5,402)	(16,099)	(22,630)
Gross profits		267	3,352	7,227	12,039	267	5,379	14,468	20,134	267	6,870	16,035	22,555
Selling costs		(2,026)	(2,971)	(4,105)	(5,337)	(2,026)	(3,742)	(7,157)	(9,510)	(2,026)	(4,042)	(8,907)	(7,907)
EBITDTA		(1,759)	228	2,940	6,521	(1,759)	1,637	7,311	10,625	(1,759)	2,828	7,128	14,647
Pro forma depreciation & amortisation		(87)	(186)	(235)	(228)	(87)	(186)	(262)	(314)	(87)	(186)	(262)	(298)
EBIT		(1,846)	42	2,705	6,293	(1,846)	1,451	7,049	10,311	(1,846)	2,642	6,866	14,350

Sensitivity to cost of capital assumptions

Interest rate (%)	4.50%	4.75%	5.00%	5.25%	5.50%
Value (p/share)	22.0	21.3	20.7	20.1	19.5
% change	+1.4%	-1.7%	-4.7%	-7.5%	-10.2%
Equity beta	0.98	1.04	1.11	1.17	1.24
Value (p/share)	22.6	21.7	20.9	20.1	19.4
% change	+4.1%	+0.0%	-3.8%	-7.4%	-10.7%
Target gearing	20%	25%	30%	35%	40%
Value (p/share)	21.4	21.6	21.7	21.8	22.0
% change	-1.2%	-0.6%	-0.0%	+0.6%	+1.2%

Weighted Cost of Capital



Key Risks

Manufacturing

To date, Immersion has built prototype speakers. It has yet to build in significant let alone commercial quantity. Whise Acoustics Limited has a history of licensing its product to other companies, but the order from Nakamichi is different. It is an order to manufacture and supply over 10,000 units, the first 250 of which are due at the end of May 2007. As yet, the company has no experience of such undertakings, albeit the management does have considerable experience in this area. Additionally, although Immersion has identified a manufacturing facility in Nanjing China, it has yet to sign a final lease, move in and order plant and equipment. The move to volume manufacture may reveal unforeseen problems, leading to delays, increased costs and damage to relationships with customers and suppliers. This problem however has been significantly reduced by the company's implementation of its strategy of outsourcing a large part of its component and sub assembly supply from experienced manufacturers.

Protection of IP

The success of the business is dependant on certain IP rights. Immersion has acquired the right to new technology in respect of designs, materials and processes. It believes that these make a reality of ESL production in volume and at competitive cost, where before it was not. If proven, these IP rights are valuable and need to be protected. The company holds patents for some of its technology and has patents pending to protect other technology. However, there is no guarantee that patents applied for will be granted, that future technology developed will be capable of protection; nor that other parties will not challenge these applications, or existing patents or claim for infringement of existing patents. If such events were to occur, they could have a material adverse impact on the revenues and profits of the group.

Competition

Immersion is likely to face competition from other companies and from other audio technologies in both ESL and CCL. Management believes that with the combination of patent protected technology and know-how, there does not currently exist any other speaker company, whose combination of product performance and manufacturing cost is competitive. This is a bold claim for a company with no volume manufacturing experience, in a market with many participants. Furthermore, there can be no guarantee that such a competitive advantage will be maintained. The group is in a start up phase and is correspondingly small. On the other hand, many of its competitors are well-established, with manufacturing facilities, customer bases and financial resources likely to give them material competitive advantage.

Market risk

Raw material prices and/or manufacturing costs may rise; the speaker market may fail to grow; and/or customer spending patterns or tastes may change. Furthermore there is the risk that acceptance or adoption of Immersion's new technology may not happen within the time frame the directors expect.

What exactly is Immersion?

Immersion is a new company, incorporated in March 2006 to exploit and commercialise IP and technology relating to audio reproduction devices or loudspeakers, more specifically improvements to the design, materials and manufacture of these speakers. The technology is the product of over ten years of research and development acquired and funded by two Australian technology companies, Winovate Pty Ltd and Whise Acoustics Ltd (“WHISE”).

Immersion listed on AIM on 12th April 2007 via a reverse takeover of St James's Energy Plc. The name of the company was changed to Immersion Technologies International plc.

The ESLs made by Immersion are acknowledged to have superior performance to CCLs in terms of better response, especially at high frequencies; and lower distortion by virtue of being a low mass design. Even so, they have a share of just 2% of the estimated world market for domestic separate or discrete loudspeakers.

Their low share is explained by the difficulties of manufacturing existing designs to a consistent standard in commercial quantities. Although the materials used in their construction are generally cheaper than CCLs, manufacturing complexities have meant that the process has been labour-intensive and in consequence expensive. For this reason ESLs have always been expensive high-end products and have been considered somewhat exotic.

Immersion is introducing new designs, as well as improved manufacturing processes and materials. It believes that these should enable it to manufacture a range of ESLs in different sizes from large panels to small bookshelf designs in sufficient volume to allow them to be competitive to CCL on price, while retaining or even surpassing the traditionally superior sonic qualities of ESLs. Immersion is to couple this with its revolutionary CCL technology to compete in the markets for traditional stereo speakers, home theatres, automotive and television manufacturers. The latter seek high quality speakers to complement flat panel displays. This means not merely competing with other ESL or CCL manufacturers, but taking market share from both market segments.

What is different?

Winovate, the incubator for Immersion, has utilised a global strategic business report obtained from GIA. The report provides details of the major market participants, major markets and the key market segments and growth estimates for the market. The report points out that the speaker market is currently dominated by CCL technology, and that ESLs have a market share of about 2%, mostly confined to the high end of the market, either for complete speakers or specialised tweeters operating within conventional enclosures in conjunction with conventional magnetic coil or cone drivers. This is a market of some US\$80m with a handful of well-established players, including Quad and Martin Logan, whose speakers are expensive. Magnepan Inc. also makes planar design, low mass dipole speakers at prices similar to those aimed for by Immersion, but its speakers are not electrostatic but a magnetic equivalent.

Historical accident has confined ESLs to a rarefied segment of the market, but they are acknowledged to have superior sound characteristics. A typical hi-fi reviewer might say that they are more musical, transparent or open. This is difficult to quantify but is a subjective observation or description of the difference in the way sound is reproduced by a full range ESL which has no need of a crossover by comparison with a CCL, which uses a crossover to split the frequency between different drivers. Many buyers would choose the former, if they were not so expensive, bulky and so on. Similarly they would have attractions for CEs, once the price is competitive and bulk reduced. Immersion and GIA believe that if these issues are addressed, ESLs would no longer be confined to their current market niche.

Immersion will also apply its CCL technology to all types of CCL's including subwoofers, which handle low frequencies and are the fastest growing segment of the market. This will enable the company to provide complete 5.1 or 7.1 home theatre systems without having to subcontract the subwoofer or CCL component design and manufacture to a third party. The subwoofer technology should also allow it to produce hybrid designs incorporating both CCL and ESL elements and a subwoofer in the way Martin Logan does. The Nakamichi Phoenix is evidence of this.

Manufacturing—key to market penetration

We take the view that manufacturing is the most important logistical hurdle for any supplier of CCL or ESL. Management believes that the technology it has acquired holds out the hope of setting up manufacturing processes which avoid the pitfalls besetting other manufacturers. What does this mean in practice?

As with all manufacturing, the longer a process takes the higher the cost of the finished item and the lower the volumes produced. This is the problem that has faced traditional ESL makers. It must then be the goal of any advance in manufacturing process to reduce the time spent to produce an individual product and one way to do this is to simplify the process. Immersion believes that this is what its new process does. It has redesigned its ESLs to take advantage of both the superior mechanical properties of advanced composite materials and the flexibility they afford in modern manufacturing processes. This has reduced the number of processes involved and the time taken to execute them.

A large number of components are to be subcontracted to other manufacturers, leaving Immersion to carry out critical tasks such as applying the conductive coating to the diaphragm and final assembly at a factory in Nanjing. Much of the process thus becomes the management of subcontractors, to ensure that they maintain quality and deliver to timetable.

This is something of a leap of faith: while some Immersion personnel have experience of manufacturing operations, the company is new and has no experience of volume manufacturing. This should be put to the test soon, as the first batch of units is due for delivery to Nakamichi at the end of May 2007. To date, the company has successfully built prototypes, but the economics of these are different to volume manufacturing. While early orders for Nakamichi could be satisfied in small batches—as were the prototypes, this would not be sustainable.

Our forecasts are based on sales of several thousand units. If Immersion is to achieve its sales targets and the margins it seeks, it is crucial that the factory is up and running quickly and that the processes work as management anticipates.

IP—improved materials and processes

Design principles for ESL and CCL remain much the same as eighty years ago, although the work of Neville Thiele and Richard Small take the guesswork out of loudspeaker design with parameters (the Thiele-Small parameters), which enable computer simulations to calculate how a given loudspeaker driver will perform in a given enclosure. We take this slight digression because it illustrates the quality of the Immersion technology, Neville Thiele designed the NTM[®] filters for Whise Acoustics.

However, extensive advances in materials technology, particularly in relation to ESLs, have taken place since Quad marketed its first commercial ESLs in 1957. Mylar and PET film for the diaphragm is more readily available, more stable and finer; adhesives to bond the Mylar to its frame are more effective, less volatile and less environmentally demanding; so too are coatings and frame materials. All in all, these developments allow volume processes to replace hitherto labour intensive operations. The aim is to reduce the number of processes by rethinking the design, consider how much can be included or combined in each process and reduce the total time in manufacturing that each product spends.

The bull case for Immersion is that more advanced materials and the new manufacturing processes associated with them are the key to the profitable volume manufacture of a range of ESL and CCL speakers. If we subscribe to this thesis, we need to know how the company's IP is protected. Immersion has applied for patents to protect its key IP. Some have been granted and others are pending.

Currently Immersion has a portfolio of patents and applications relating to seventeen inventions. Patents have been granted internationally with respect to three of these with applications pending for the remaining fourteen. The patents which have been granted do not relate to ESL, but to the improvements in CCL technology in various Whise products. The patents applied for in respect of ESL technology are still pending, though neither the directors nor their Patent Agents are aware of any challenges.

If Immersion's new processes are successful they are likely to be closely examined by rivals. In addition, their patents are likely to come under scrutiny, from companies seeking to prove prior art; from those seeking compensation for infringement; and from those alleging that Immersion's IP is not sufficiently differentiated from existing technology to warrant protection. Immersion needs to be prepared to defend its IP aggressively.

Route to market

There are a number of different routes to market: OEM supplier, sub-contract manufacture, licensing technology, retail and direct marketing. Immersion has chosen initially to reach the market through supply agreements with large established branded CEs. The first contracts are with Nakamichi, a well-known audio/visual products company and Alpine, an in car entertainment (ICE) business. The company is also in discussion with multi-national TV CEs to supply speakers for Flat Screen TV sets. As part of this approach Immersion aim to ensure that it is not simply a white label manufacturer but that its technology is acknowledged by the CE along the lines of "Intel inside", Dolby or THX.

As regards the retail market Immersion believes that it will be pulled towards the retail end of the market through its relationships with other companies in the industry and will eventually be able to sell its own branded products.

SWOT ANALYSIS	
Strengths	Weaknesses
Good award winning technology - NTM®, PAM™	Small company in a crowded market
Volume manufacturing process for ESLs	A start up
Focussed senior management with experience of manufacturing and outsourcing in China	Limited brand name recognition
Nakamichi Contract	No manufacturing track record
Relationship with Alpine	New manufacturing process unproven in real world situation
	Dependance on CEs
Opportunities	Threats
Low, 2% penetration of ESL in speaker market	New technology or advances in technology
High audiophile approval of ESL concept	Larger competitors undercutting prices to CEs
Huge flat panel TV market	Larger competitors may replicate processes and/or challenge patents
Poor quality of existing TV speakers	Competitors/predators may acquire the technology through a bid
Continued growth of subwoofer market	
Car audio market	

Source: Objective Capital

To appreciate whether Immersion's audio technology can challenge the broader market we need to know what they are, how they work, how they differ from other CCL and ESL manufacturers.

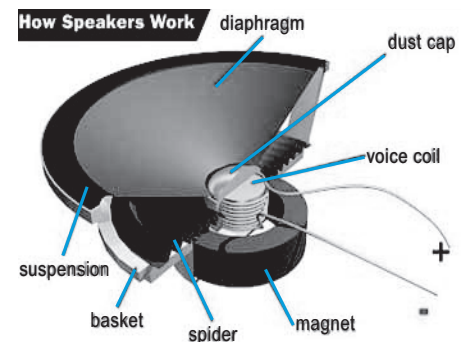
Speaker design is a complex process, involving maths, physics and engineering. CCL and ESL technology each present their own challenges to the designer. For the most part, consumers are uninterested or unaware of these issues which do not influence retail decisions.

The speaker market is diverse: different criteria influence the buying decision in different segments of the market. Sound quality is but one criterion and often not the most highly ranked. If it were, most music would still be played on vinyl and amplified with valve amplifiers. Aesthetics, lifestyle, convenience, space, budget, and manufacturers' offers play their part in decision making.

Interestingly the two technologies have been around for much the same time. In 1923, Bell Telephone Laboratories made the decision to develop a complete musical playback system consisting of an electronic phonograph and a loudspeaker. Bell Labs assigned the project to two young engineers, C.W. Rice and E.W. Kellogg, who narrowed the field of competing technologies to ESL and CCL but despite finding ESL sonically superior, concluded that it was easier to develop CCL because conditions at that time made them easier to build.

Most people are familiar with CCL speakers and the boxes in which they come, if less so with how they work and what their limitations might be. Although Kellogg and Rice chose them as the easier development option, they are still incredibly complex, blending advanced mathematics, physics and mechanical engineering to design even a basic speaker. A speaker is the final element in a music reproduction system before the sound reaches our ears. In effect the reverse of the microphone or the listener's ears, it takes an electrical signal and turns it back into sound waves. The accompanying diagram shows the basic components of a CCL. At its most basic level, an electrical signal is fed from an amplifier to the voice coil of the speaker. The voice coil is a basic electromagnet which is placed in a permanent magnetic field (the magnet in the diagram) and one end is attached to a cone or diaphragm. The amplifier constantly switches the electrical signal to the electromagnet from positive to negative thus reversing the polarity and causing the voice coil to move like a piston as one end of the coil is constantly attracted to or repelled by the permanent magnet's negative pole. This happens many times a second, causing the diaphragm to vibrate and create sound waves.

Diagram of a traditional cone (CCL) speaker



Source: *How stuff works*

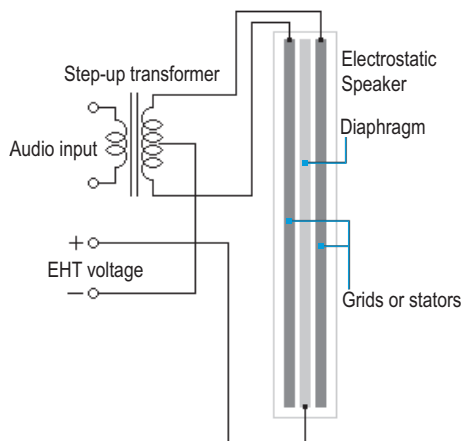
A sample dome tweeter



A typical crossover unit from a loudspeaker. The frequency is divided up by inductors and capacitors and then sent on to the woofer, tweeter and mid-range driver.

Electrostatic speaker diagram

A basic diagram of an electrostatic speaker's construction and its connections



The thickness of the diaphragm and grids has been exaggerated for the purpose of illustration.

Source: *How stuff works*

This process is quite simple in theory but in practice complicated. As the name suggests, low frequencies cause the cone to move slowly while high frequencies call for rapid movement, not always possible with a large cone. Most speakers overcome this problem by splitting the work between two or more cones or drivers, a large driver for lower frequencies and a small tweeter (often a dome rather than a cone) for the higher frequencies.

More advanced designs often use a third or fourth driver to divide the frequencies. These require circuitry to split the signal from the amplifier into the different frequencies before sending it to the drivers. These are called crossovers introducing another design challenge as well as a possible source of sound degradation.

Finally there is the enclosure, which houses the drivers and prevents unwanted vibration, calling for another set of calculations. CCL design is essentially a compromise leading to a device which fulfils a specific role and fit into a specified environment, e.g. home, car, etc. The fewer the compromises, the better (and more expensive) the end result.

Apart from these complexities, other drawbacks are inherent to CCL design. These include colouration from the enclosure, bulk caused by the magnets, which determine the depth of the cabinet; the mass of the cones which causes sonic distortion and lifts material costs. Large magnets are costly, as are the more expensive cone materials such as carbon fibre and Kevlar.

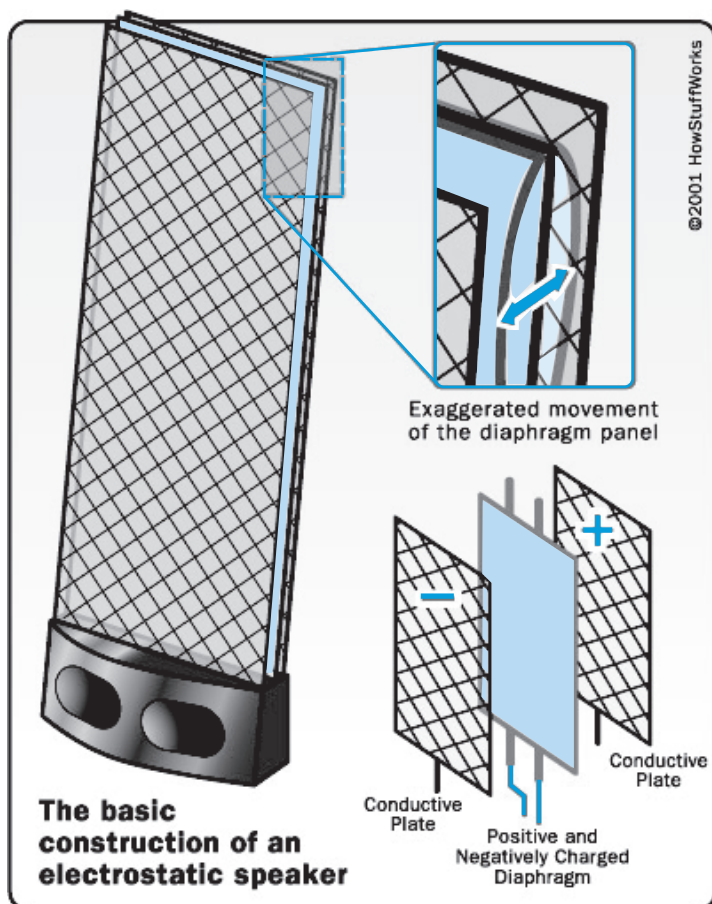
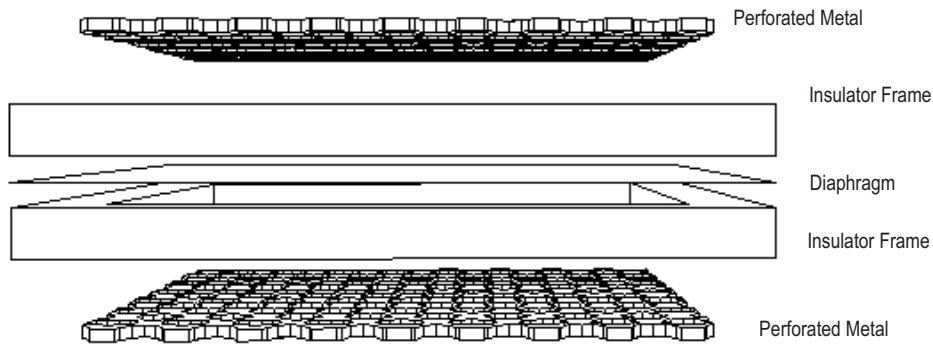
What is an ESL?

By historical accident, ESLs have been confined to the more exotic realms of hi-fi but in theory at least they are simpler. An ESL uses a thin ultra light plastic film diaphragm instead of a cone to move air and create sound waves.

The diaphragm, usually a sheet of Mylar or PET film stretched over a frame to keep a constant tension and coated with a conductive material, has a constant charge maintained by a 5kV polarising supply. The diaphragm is sandwiched between but isolated from two electrically conductive grids or stators (electrodes) with a small air gap between the grids and the diaphragm. The audio signal is fed to the grids and the electrical charges between the grids and the diaphragm cause the film to move thus creating sound waves, which move through the grids which are either wire frames or perforated metal plates.

As the diagrams show, this approach has no cabinet, no magnets and no crossover. As might be expected this design behaves differently to CCLs in a number of ways, with advantages and compensating disadvantages.

Construction of electrostatic speaker



Source: How stuff works

Advantages

- Low mass: the diaphragm is thinner than a human hair and almost lighter than the air in which it moves, allowing it to accelerate and decelerate faster than a relatively massive cone and allowing it to handle higher frequencies better and with less distortion.
- Less sonic colouration: the choice of materials for cone construction and cabinets affects the sound of a CCL. Generally speaking the more expensive the materials and more time consuming the construction the better the sound. ESLs don't really have a cabinet so there is less to affect the sound although the choice of materials for the stators can have an effect.
- Sound wave characteristics: these are more directional than those from a CCL, making for less volume degradation and less ambient sound pollution.
- Other points are that the tall thin dipole design gives better imaging; the thin planar design should take up less space; there is no need for a crossover; and overall a lower material cost.

Disadvantages

- There is a perceived lack of bass response.
- There is some sensitivity to humidity.
- The need for protection circuitry may damage some transistor amplifiers.
- The relative lack of sensitivity calls for powerful amplifiers.
- The design of the dipole (backward as well as forward sound projection) gives less flexibility in room placement.
- The equipment has historically been difficult to manufacture.

The perceived lack of bass response is something of a myth: ESLs produce bass of a higher quality and with more detail than the distortion of a cabinet which we normally associate with the lower registers. The panels have to be larger to reproduce bass effectively, as is the case with CCLs.

The pitfalls of ruthless transparency

The perfect sound reproduction device would neither add nor take away anything from the sound it was reproducing, and ESLs with their superior frequency response and lower distortion come closer to that ideal than CCLs.

The pitfall with such revealing speakers is that they expose a poor quality signal in as much detail as a good quality one. This is the garbage in garbage out principle: if you start with a poor recording environment or an inferior quality microphone that is what you are going to hear out of a high quality loudspeaker. If the recording is poor, or any component in the playback chain degrades the signal, the listener may be disappointed. This principle led the founder of Linn back in the 1970's to voice what was considered a heresy, namely that in a given music system budget preference should be given to the source, then to amplification and only then to speakers. In the days of vinyl replay the logic was hard to fault. CD has limitations designed in so makes less of a case for the budget; this applies all the more to MP3. Nonetheless, the principle holds good to the extent that whatever you spend on speakers, you should spend the same on amplification and a decent source.

Immersion believes it has solved most of the problems associated with ESLs, by way of manufacturing process, design and materials. These enable the company to build a range of ESLs in different sizes in commercially acceptable volumes and at lower costs than hitherto achievable. If Immersion is able to put this technology into practice and build ESLs in volume it should be able to take market share from CCLs in certain areas of the market.

Immersion's CCL technology comes closer to achieving the sound characteristics of an ESL than any other CCL on the market today. It does this in several ways but the key areas are with its proprietary PAM™, NTM® and Acoustic Equalisation technologies. In simple terms, PAM™ provides the acoustic modelling of the speaker box in which the CCL is placed. NTM® is a proprietary and unique digital crossover system. This coupled with Acoustic Equalisation or mechanical filtering of the CCL can reduce distortion to levels comparable to an ESL. The combination of these CCL technologies provides award winning CCL products as evidenced by the Sound & Image Award 2004 (Sydney) for the Whise 119a Profunder Subwoofer and the 2006 CES Honouree Award for the Alpine PLV-7 car subwoofer.

The company's CCL technology allows flexibility for subwoofers and full range speakers. The NTM® technology in particular allows individual drivers to be driven harder or closer to their tolerances without degrading the sound of the speaker as a whole, which means they can be made smaller and hence the attractions for car systems, or TV speakers where space is constrained.

There are a number of other considerations to be taken into account. At the upper end of the market, the price of ESLs is not an issue and other factors influence the buying decision, that is aesthetics, ease of use and installation, supplier reputation and only then sound quality. The high-end buyer is apt to be influenced by his dealer/supplier/installer just as much as by his own ears. Dealers are often loath to recommend speakers that are hard to set up or install; the speakers' visual effect may also be a consideration. Historically ESLs being dipoles, their sound has been dependent on placement in a room, i.e. not too close to walls.

Further down market, sound quality seems to play even less of a role, as lifestyle considerations and marketing are to the fore. The perfect illustration of this is Bose, a company that has achieved notable success and become the largest manufacturer of loudspeakers in the world through aggressive marketing which causes perceptions of premium quality, despite often inexpensive materials. Bose spends heavily on advertising in lifestyle publications, encourages direct sales and goes to great lengths to avoid situations where buyers can compare its speakers with others in a proper listening environment. Bang & Olufsen employs similar if less aggressive tactics and both rely heavily on dedicated retail outlets, as does Sony.

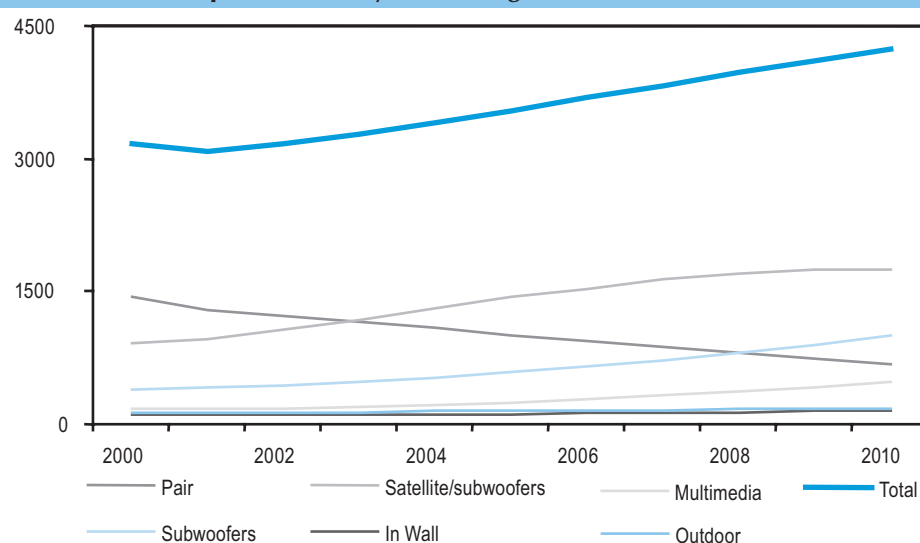
What is the addressable market for Immersion?

The GIA report analyses the hi-fi loudspeaker market by region, US, Canada, Europe, Asia Pacific, Japan and rest of the world. The report also breaks the market down into six segments or product categories; pair speakers, satellite & subwoofer speakers (subdivided into 3 and 6 speaker systems), subwoofers, in wall speakers, outdoor speakers and multi-media speakers. The report is confined to discrete loudspeakers and systems, and does not take into account speakers in TVs, cars, computers etc, all of which are areas targeted by Immersion.

GIA estimate that the global speaker market has a value of about US\$3.54bn and is growing at a compound rate of 4% between 2005 and 2010. The USA is the largest single currency market and is expected to grow slightly faster; Europe is the largest region, and is growing at the same rate as the market; and Asia-Pacific is growing at below the market rate. Although the regions are growing at broadly similar rates there are several interesting trends developing within the segments.

The market for traditional stereo pair speakers has been in steady decline since the start of the decade. Although the rate of decline is slowing, GIA still expect a compound rate of -6.75% between 2005 and 2010. This decline is worst in the US, where the trend has accelerated in the second half of the decade and least marked in Asia-Pacific. In contrast growth has been strongest in subwoofers and multimedia speakers, which are growing at 11.5% and 12.5% respectively, with the market for combined satellite and subwoofer systems now expected to grow at the market rate between 2005 and 2010.

Worldwide loudspeaker sales by market segment 2000-2010 in US\$m



Source: GIA

Forecast loudspeaker sales by segment

US\$m	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Pair	1447	1298	1229	1158	1083	1008	937	867	801	737	677
Satellite/subwoofers	908	959	1064	1187	1310	1433	1540	1628	1697	1738	1741
Subwoofers	398	416	442	479	527	583	648	722	805	898	1006
In Wall	101	102	104	108	112	118	124	131	138	146	154
Outdoor	137	138	137	140	144	148	154	159	165	172	180
Multimedia	167	172	181	198	221	248	280	319	363	416	477
Total	3158	3085	3157	3270	3397	3538	3683	3826	3969	4107	4235

Source: GIA

The growth in subwoofers and satellite/subwoofer systems puts into perspective Immersion's acquisition of Whise last year. Whise is a small company, with less than £100,000 of sales at present but it has CCL subwoofer technology that is interesting to Immersion both as stand alone products and in combination with Immersion's ESLs in a satellite/subwoofer system.

Although not covered by the GIA report, the flat panel TV market is experiencing a boom, at least in volume terms. The market for LCD TVs reached US\$25bn in 2005 and is expected to grow at a CAGR of 27%, to reach US\$84bn by 2010 according to iSuppli. Immersion sees this as an important market. For all its growth, the flat panel TV market is cut-throat: with LG-Phillips, Sony, Samsung and Sharp all fighting for the lead and with all manufacturers using panels from the few suppliers, there is a growing need for OEMs to differentiate their product. iSuppli drew attention to this, reporting that TVs up to 32in were already commoditised with buyers discerning no difference between the brands. As a result prices are falling sharply despite booming volumes.

TV speakers have traditionally been of poor quality due to the limitations of the enclosure. With the advent of flat panel sets the problems are exacerbated. If Immersion has managed to design and manufacture either its CCL or ESLs sufficiently small to be incorporated in a TV panel their product might well attract OEMs. Although speakers in a TV are small and their value low in comparison to a home theatre system, this remains an enormous potential market because of the huge volumes involved, the flat panel TV market is running at about US\$50bn and the largest manufacturer Samsung is currently estimating its production at in excess of 265m units.

Although LCD is the fastest growing segment of the TV market, plasma TVs are of a similar size but growth has now peaked. Traditional CRT TVs have been in decline for some time, and this has been accelerated by the switch to digital and HDTV. This is a potential market where the manufacturers are after an audio performance to allow product differentiation.

Automotive

The automotive market is another area identified by Immersion as attractive and the company already has a relationship with Alpine, a leading supplier of in-car entertainment (ICE) systems. At present this business is small but the company has budgeted about £1.4m in revenues for 2008. The global car market has sales of around 65m units and is growing at around 3% pa; in contrast to a decade ago even the most basic vehicle has a music system. This is not the easiest market to supply, as the industry is populated by a few huge companies, margins are generally low and the OEMs are tough customers, demanding annual price reductions and increased features. In all but the luxury segments, price plays an important role in securing a contract, which is then relatively sticky, lasting the length of a model cycle, i.e. 5 to 7 years.

Distribution

In the first instance, Immersion is to distribute through Nakamichi as an OEM. Nakamichi came to prominence with the compact cassette, by overcoming profound limitations as a medium. Nakamichi reengineered the hardware to produce tape decks capable of delivering near professional recording and playback quality, establishing them as a leader in the field.

From the point of view of Immersion, the first advantage of supplying OEMs like Nakamichi is a lower marketing budget: the OEMs market their own products and have established distribution channels. Secondly, this route allows the company to concentrate on design and manufacturing. This is closer to home: in the early stages of the business's development it is likely to be less demanding on management bandwidth and cash.

There are also some disadvantages. Immersion may find itself unhealthily dependent on its OEM customers: future pricing may be more determined by the OEMs than Immersion and the marketing objectives of the OEMs may not best serve Immersion. In addition, this route to market makes it harder for Immersion to develop brand recognition: customers are primarily buying a Nakamichi stereo, an Alpine ICE system, or a CE TV; they are less interested in the underlying technology.

Similarly, licensing technology would leave the company dependent on third parties and would also involve losing control of manufacturing which could pose the risk of losing control of IP.

Immersion is also considering retail distribution. Industry leader Bose has achieved its success through retail and direct selling, but with a large marketing budget and tight control of distribution. For example, if the Immersion product is as good as the prototypes suggest, there is little chance of finding a Bose speaker where buyers could make a direct comparison.

The retail route offers its own choices: chain stores, independent retailers or owned/franchised stores. As a speaker manufacturer, Immersion could not justify its own network, as buyers want to hear whole systems in a single outlet. This route is only justifiable by big companies, for example Sony, Bose, and Bang & Olufsen. In this light, Immersion would have to decide where to concentrate. Multiples are unlikely to give shelf or floor space to a new brand. They stock brands that are backed by extensive advertising and promotion, from suppliers that give them the optimum mix of terms and rapid turnover.

For the time being, ESLs remain a specialist product and if a retail approach is chosen for Immersion's products it may initially have to be through specialist independent retailers. Even this route brings its own challenges, stretching a company of Immersion's size. An independent retailer usually stocks a limited range which it expects to meet the needs of its local customers; consideration is usually given to compatibility with other brands stocked, support offered, by way of demo equipment, brochures, and credit terms. There must be sufficient margin built in to allow the dealer to demonstrate the product effectively and to ensure it is correctly installed and set up. This requires resources on the manufacturer's part, sales reps for the regions chosen, demonstration stock, product launches, trade shows and dealer training. In the case of new products—in particular from a new

company—the dealer has to be convinced that they are suitable for its customers, that support and warranty back up are available and that the company is likely to survive. Making the case is a time consuming and expensive process.

The retail route has its own pitfalls: accordingly we attribute low importance to it in two of our three valuation scenarios, in our core and pessimistic scenarios we have not included any retail sales until 2010. In the optimistic scenario we project some 4,330 units in 2008. To put this into perspective, this is equivalent to ninety dealers selling two pairs of speakers a month. It doesn't sound a lot in the context of Nakamichi's minimum of 5,000 units over two years, but Nakamichi probably has more than ninety dealers in Japan alone, it operates in a major market for audio systems and has strong brand recognition. Selling 4330 units in 2008 through retail channels would be an impressive achievement for Immersion; more importantly it would lay important foundations for developing the retail channel.

Competition

At this stage of the company's development the question of competition may not be all that relevant. With a contract already signed to manufacture and supply a range of product for Nakamichi, the first stage of Immersion's development is likely to be determined by its ability to implement its manufacturing process and delivery rather than by competing head-to-head with other speaker manufacturers.

To the best of our knowledge, no other commercial speaker manufacturers supplying OEMs are currently using or proposing to use ESL technology. This is likely to change if Immersion's success leads such technology to be seen as a threat to existing players.

In the competent third-party report, Dr Cambrell compares the Immersion prototype with three other products: The Quad 989, formerly Quad's top of the range, the Martin Logan Summit, a hybrid ESL panel with Subwoofer and a Sound Science Electrosignature 2. These might be considered competitors if Immersion takes a retail route to market.

Quad. Founded in 1936 and now a subsidiary of IAG, Quad launched the ESL57 in 1957 and has manufactured ESLs ever since. Quad remains true to the belief that ESLs can produce both high and low frequencies from ESLs and doesn't make hybrids. Quad now produce four full range ESLs, at prices ranging between £4,000 and £6,000. It sells its products world-wide through a dealer network. Quad is a full range manufacturer, supplying amplifiers, CD players and CCL speakers.

Martin Logan was established in 1982 and manufactures a range of ESL hybrids. It targets both traditional hi-fi and the home theatre markets. The business has a world-wide dealer network.

Magnepan Incorporated was founded about 35 years ago. It doesn't manufacture ESLs but a magnetic equivalent. Magnepan's Magneplanar speakers are full range planar dipole speakers. The drivers are low mass Mylar ribbon, and the designs are planar, i.e. thin panels. Magnepan manufactures planar speakers for traditional music systems and home theatre systems. With Magnepan's cheapest speakers starting at some US\$600 a pair, the pricing points would be at competing levels with Immersion's product.

Immersion is a new company, set up to acquire what the directors believe to be exciting IP and technology related to the design and manufacture of ESL and CCL products.

If proven, the IP, especially that relating to new manufacturing processes and new advanced materials for ESL, may well revolutionise the production allowing Immersion to win market share and grow its revenues rapidly.

However, at this stage Immersion is merely the owner of certain rights and technology and a party to a contract to design and supply its product to a well known AV company, Nakamichi. It has built several working prototype speakers using its new technology and new materials and these have been the subject of a competent third party appraisal and report which found they compared favourably with the competition. Immersion is not currently a manufacturer and has no manufacturing track record. The manufacturing process and the application of new materials proposed by Immersion has not been tested at any meaningful level of volume. However, the CEO does have considerable experience with large contract manufacturers in China.

Immersion also has licensing contracts with Alpine and Harman.

The directors of Immersion have identified a facility in the Nanjing Jiangning Economic and Technological Development Zone and are currently negotiating final terms for this facility. The terms include an option to take more space within the unit as production expands.

Immersion's strategy for the time being is to focus primarily on the design, development and manufacture of products for sale to CE customers, such as Nakamichi. To do this Immersion intends to adopt a manufacturing strategy suitable for a small company at its stage of development. Immersion plans to retain control of the final assembly processes and intellectual know-how by keeping these in-house, on Immersion premises. The company is also to manufacture some components in-house to maintain an efficient supply chain. Even so, many individual components and sub-assemblies as well as certain finished products are to be outsourced to take advantage of the vast range of high quality, low cost manufacturing available in China.

Immersion intends to make the following investments in the manufacturing assembly facility, estimated to have a total capital cost of US\$250,000:

- Test equipment;
- Reaction Injection Moulding ("RIM") machine;
- Membrane coating and application machine;
- Packing, handling and storage equipment;
- Office equipment; and
- Assembly tools.

Initially Immersion plans to employ about 32 manufacturing staff.

Profit & Loss				
Year ending December (£000s)	2007	2008	2009	2010
Revenues	340	9,962	27,010	39,721
COGS	(73)	(4,583)	(12,542)	(19,587)
Gross profits	267	5,379	14,468	20,134
Selling costs	(2,026)	(3,742)	(7,157)	(9,510)
EBITDTA	(1,759)	1,637	7,311	10,625
Depreciation & amortisation	(87)	(186)	(262)	(314)
EBIT	(1,846)	1,451	7,049	10,311
Interest income	99	180	306	616
EBT	(1,747)	1,631	7,355	10,927
Prof forma tax	—	(504)	(2,206)	(3,278)
Earnings	(1,747)	1,127	5,148	7,649
Dividends	—	—	—	—
Retained earnings	(1,747)	1,127	5,148	7,649

Cashflow statement				
Year ending December (£000s)	2007	2008	2009	2010
EBIT	(1,846)	1,451	7,049	10,311
Depreciation	87	186	262	314
(Increase) decrease in debtors [receivables]	(62)	(1,733)	(1,004)	(2,302)
(Increase) decrease in inventory	—	(477)	(910)	(305)
Increase (decrease) in creditors [payables]	6	412	1,075	1,290
Net cash from Ops	(1,815)	(160)	6,472	9,308
Tax paid	—	—	(1,007)	(2,206)
Dividends	—	—	—	—
Interest recieved (paid)	99	180	306	616
New equity	—	—	—	—
New deposits (borrowings)	—	(5)	(0)	—
Capital expenditure	—	(325)	(425)	(511)
Net cash from financing	99	(150)	(1,127)	(2,102)
Net increase (decrease) in cash	(1,715)	(310)	5,345	7,206

Balance sheet				
Year ending December (£000s)	2007	2008	2009	2010
Net fixed assets	4,669	4,873	5,036	5,234
Cash	3,750	3,440	8,786	15,992
Debtors [Accounts receivable]	766	2,499	3,502	5,804
Prepayments, deposits & other	46	46	46	46
Inventory	190	667	1,578	1,883
Current Assets	4,752	6,652	13,912	23,725
Total Assets	9,487	11,525	18,948	28,958
Trade creditors [Accounts payable]	(147)	(1,064)	(3,338)	(5,700)
Net Current Assets	9,340	10,462	15,610	23,258
Financial (creditors) debtors	—	5	5	5
Net Assets	9,340	10,467	15,615	23,264
Capital and reserves (split TBD)	11,222	11,287	11,287	11,287
New issues	—	—	—	—
Retained earnings	(1,947)	(820)	4,328	11,977
Capital Employed	9,340	10,467	15,615	23,264

Source: Objective Capital

Appendix: Management

Christopher Lambert, aged 48 (Non Executive Chairman)

Mr Lambert has 22 years' experience in investment banking and commodity markets, holding positions including Director of Precious Metals Trading Europe for Prudential Bache Securities Inc. and head of precious metals trading (UK) for Barclays Bank plc. During this period he structured a number of major transactions for central banks, governments and mining companies. He has subsequently acted as a consultant to mining companies on financial strategies. Mr Lambert is also Chairman of two other AIM listed companies.

Craig Douglas Evans, aged 39 (Chief Executive Officer)

Mr Evans studied engineering at RMIT (Royal Melbourne Institute of Technology) and has a background of more than 15 years' experience as an executive for various private companies and has spent the past 5 years as a General Manager of a Tyco International company. He has a strong operational background in manufacturing, strategic development, operational excellence, program implementation, acquisition opportunities and plant rationalisation, development and expansion both in Australia and China. Prior to his appointment as CEO of Immersion, he acted as General Manager of Winovate Pty Ltd, being the private company that developed the ESL technology, and is a co-inventor of the manufacturing patents for the Immersion Technologies.

Vincent Fodera, aged 36 (Executive Director)

Mr Fodera holds a Bachelor of Laws degree from Bond University. He is a Barrister and Solicitor of the High Court of Australia and the Supreme Court of Victoria. He has over 10 years experience in Commercial and Intellectual Property Law, providing key strategic, contractual and corporate advice. He has developed key marketing strategies and overseen the industrial relations and financial management of several private companies, including the development and implementation of commercial operating plans. Mr Fodera has a genuine interest in and an understanding of Immersion's technology and developed Immersion's trade marks.

Blair Snowball, aged 33 (Finance Director)

Mr Snowball, based in London, has 13 years of international experience in finance and advisory roles. He is a qualified accountant and an Associate of the Institute of Chartered Accountants of Australia. After completing his Bachelor of Commerce at the University of Western Australia, Mr Snowball worked for four years at KPMG in Audit & Advisory. He then moved to Ireland where he helped establish Barclays Insurance (Dublin) Ltd for the Barclays Group. After a year with a private bank in London and the Channel Islands, he joined Cable & Wireless plc in 2000 and performed various finance management roles in both Europe and the Caribbean before joining Immersion in 2006.

Kiran Morzaria, aged 32 (Non-executive Director)

Mr Morzaria holds a Bachelor of Engineering (Industrial Geology) from the Camborne School of Mines and an MBA (Finance) from CASS Business School. He has five years exploration, mining and civil engineering experience. He was appointed Finance Director of River Diamonds plc in 2004 and since then has been overseeing the development of its mining and exploration projects in Sierra Leone and Brazil. In this role Kiran has been involved in acquisitions, joint ventures, valuations, independent experts' reports, due diligence, and capital raisings. Mr Morzaria is currently an executive director of St James's and following the acquisition of Immersion will become a non-executive director. Mr Morzaria is also a non – executive director of two other AIM listed companies.

Sandy Barblett, aged 39 (Non-executive Director)

Mr Barblett has extensive experience in sales and marketing having previously worked for the last ten years at Pace Micro Technology plc, where he was employed in senior executive management roles in the US, Asia Pacific and also Europe, Middle East and Africa. Mr Barblett holds a Bachelor of Laws from University of Queensland and a Bachelor of Business from Curtin University of Technology. Mr Barblett acts in various corporate advisory roles for start-up technology companies and is currently a non-executive director of Apogee Power, Inc and was previously a director of AIM traded company Microfuzze International plc.

Gregory Turnidge, aged 53 (Non-executive Director)

Mr Turnidge has had a diverse range of experience in his 30 year career. After working for the Reserve Bank of Australia, Mr Turnidge took up a senior policy advisory role for the Victorian Chamber of Manufactures. He was seconded to work in the Office of Management and Budget in the Victorian Government in 1982 and was subsequently appointed Managing Director of Aluvic Pty Ltd, a company he grew to an annual revenue base of A\$250 million before being sold in 1998 for A\$500 million. Mr Turnidge has undertaken capital raisings, public listings, major foreign exchange transactions and cross border financings. He has established and operated joint ventures in the USA, France and China and engaged extensively in international commercial and trade arrangements, especially in commodities. He has developed detailed experience in financial administration, human resource management systems and employee motivation programs and continues to act as a mentor to a number of senior executives.

Charles Van Dongen, aged 48 (Chief Technical Officer)

Mr Van Dongen holds a degree in electrical and electronic engineering from Swinburne University of Technology. He has 27 years experience in both the electrical and electronic industries and has been a director of several design/manufacturing companies. He is a specialist in areas of analogue, high frequency switchmode and audio electronics and has been developing the ESL technology for more than 15 years. He is dedicated to the improvement of audio reproduction and is the principal inventor of all the ESL patents of the Immersion Technologies.

Zeliko Velican, aged 44 (Senior Technical Advisor)

Mr Velican studied electrical engineering at Monash University and is a skilled acoustic designer with several patent applications to his credit. He is the principal inventor and designer of the low frequency technologies incorporated in the Immersion technology. Mr Velican was a technical sales manager for Philips Australia for approximately six years followed by Omron for a further six years. He has also had experience as an account manager with Tyco International. Prior to his employment with Immersion, he was the Chief Technical Officer of Whise. His experience in both engineering and sales, and his lifelong passion for audio perfection gives him particular insights into acoustic application engineering.

We are pleased to bring you this report on **Immersion Technologies International plc**.



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Simon Miller has over 25 years in finance. He was previous head of research for Bryan Garnier and managed funds for both Sagitta and Elysian. He is a former rated analyst.

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