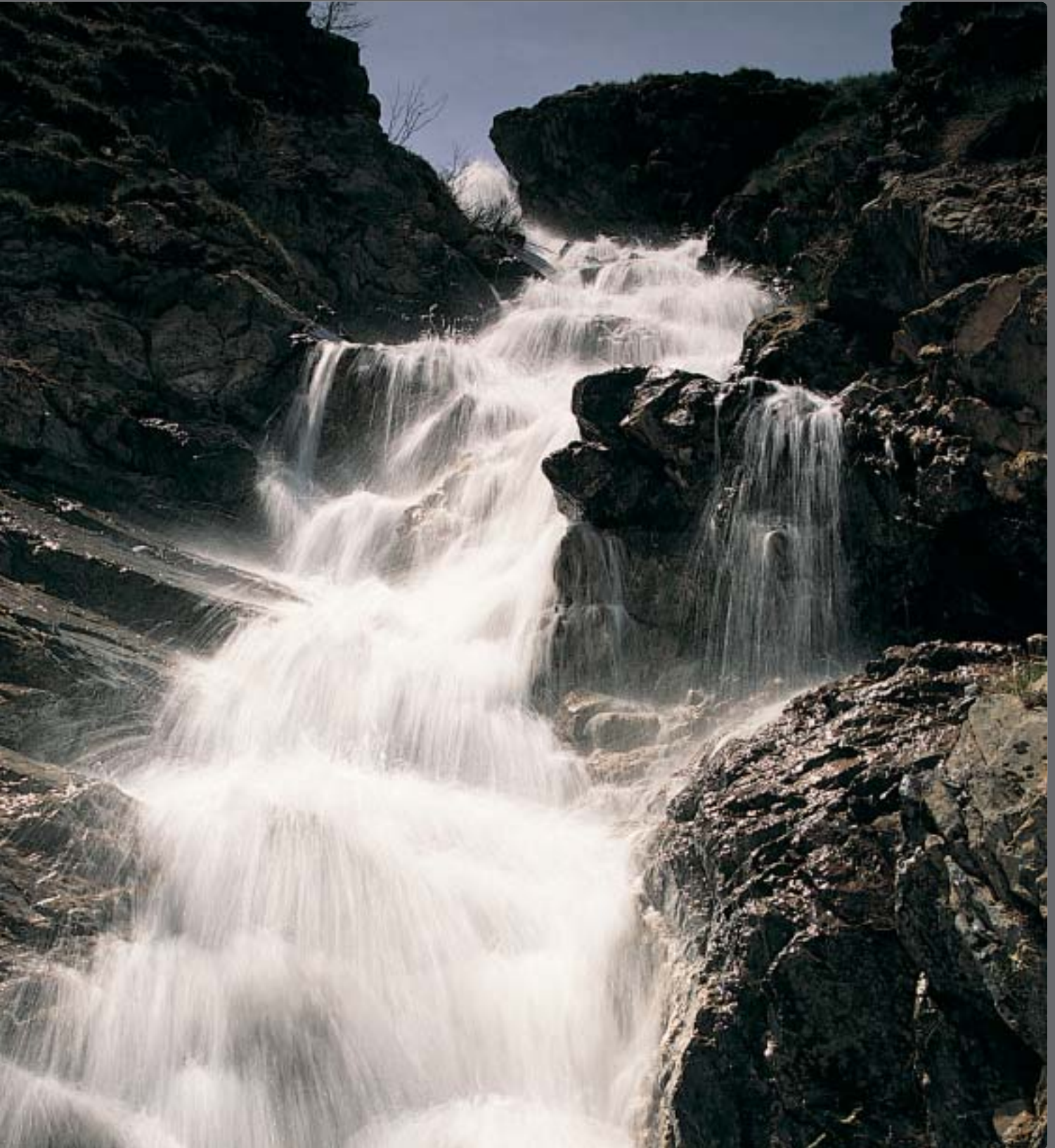


Forging Ahead

Annual Review 2004



National
Microelectronics
Institute



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Another action-packed year for NMI as we continue to support the microelectronics industry in the UK and Ireland in whatever way we can. Our ultimate aim: to provide bottom-line business benefits for our members.

Read on and you'll see what we mean...



NMI
National Microelectronics
Institute, the industry voice
for best practice, education,
training and management.

Chairman's Statement

“Quite simply, for the sake of our future, we must work together to maximise the benefits of collaboration on common areas and to ensure that our industry's needs are vocally represented...”

2004 has been an excellent year for the semiconductor industry and for NMI. We have at last seen a long-awaited upturn, resulting in significant capital investment and growth. Investments at Atmel, International Rectifier, Motorola, National Semiconductor and others will have totalled over £100m. As always, there will be significant business challenges ahead, but who says UK manufacturing is dead?

In Design, we know that the UK is the centre for independent design houses and that we must continue to capitalise on that strength. This year has seen the rise of a number of new chipless and fabless start-ups, together with significant venture capital funding for many early stage companies. In 2004, the industry has proven once again that we have the technology, skills, flair and drive to be successful. It's imperative for the future of this industry and the economy as a whole that we continue to invest in high-quality manufacturing and design jobs.

It's no longer about attracting thousands of new employees. It's about bringing the right skills out of our colleges and universities; up-skilling our current workforce; meeting productivity challenges and developing new technologies that will sustain and support continued growth in high value added products. We must also compete internationally for new investment. This must be on a level playing field, at the very least within the EU. We hope that the UK Government, on receipt of the reports from the UKpsc (UK Paradigm Shift Consortium) and EIGT (Electronics Innovation & Growth Team) will act to implement programmes that support the continued growth of UK microelectronics.

As Chairman of NMI, I'm proud of what it has achieved on behalf of the industry. Quite simply, for the sake of our future, we must work together to maximise the benefits of collaboration on common areas and to ensure that our industry's needs are vocally represented.

For those of you who aren't yet members, I would urge you to join. It's imperative that as a significant industry sector we have a Trade Body that's focussed specifically on our needs within the electronics industry. This, I believe, is exactly what NMI provides.

**GERRY EDWARDS
NMI CHAIRMAN
VICE PRESIDENT & MANAGING DIRECTOR
NATIONAL SEMICONDUCTOR (UK) LTD**

Chief Executive's Statement

Our four main areas of activity continue to be:

- representing the industry
- facilitating collaborative networks
- impacting productivity
- improving education, training and skills.

What a year! Since being formally appointed CEO in September 2003, I have thoroughly enjoyed building up a new team and being part of its continued growth. We set out a clear mission statement in our 2004 Business Plan to have a bottom-line impact on our members' operations. Our aim is to play an integral part, both in your success and in addressing your business needs.

As you'll see as you read this Review, we've made great strides in each of these areas. The representations we made on behalf of industry, for instance, will result in significant additional savings in R&D Tax Credits; a scheme that has really hit the mark for the industry and will no doubt encourage more R&D spend, a key Government priority. The associated dissemination process that we started, with the support of the DTI and KPMG, was a real eye-opener and something we now intend to use ourselves at NMI! Our Capability Maps, meanwhile, have provided a new insight into the strength and depth of UK microelectronics. And our Business Development networks, a totally new area of activity for NMI, are already leading to collaboration in key areas. They carry huge potential for a whole new way of working together to maximise common benefit.

Our continued focus on improving Design Productivity (through facilitating the UK Paradigm Shift Consortium) and Manufacturing Productivity (through our various collaborative forums) is extremely well supported by members. And with the support of our partners, British Energy and the Carbon Trust, we're investing in efficiencies to minimise the impact of recent rises in the cost of energy. Within skills, our ongoing work in supporting CEESI, IGDS, the Electronics Sector Skills Council and Insight Management Development Programme continues to benefit the industry. This year we'll be awarding our first Insight Diploma in Management – a significant step forward in an industry better known for its technical than leadership skills.

Recognising the challenges faced by the wider electronics industry, the DTI commissioned an Electronics Innovation & Growth Team (EIGT). Its role is to identify the key programmes and support industry needs. NMI has ensured that the EIGT has received key input on semiconductors and we're confident that our sector will figure strongly in the findings.

Read-on and you'll discover more of the ways in which NMI's work benefiting the industry, both individually and collectively. In a drive to extend our support to the entire community, for instance, NMI revised its membership structure to allow greater involvement from start-ups, SMEs and universities.

Change has been very positive at NMI; we're doing more great things than ever before. Thank you to all our current members for their continued support. For those who have still to experience the value NMI can bring, I'd invite you to join us. The larger our membership and the greater the collaboration, the bigger the benefits to you.

DEREK BOYD
NMI CHIEF EXECUTIVE

Playing on our strengths

Everything the industry needs to succeed is right here. Spread throughout the UK and Ireland we have all the supply chain links, experience and expertise anyone could ask for.

“The Equipment Forum offers differing perspectives on similar problems and helps generate and share best-known methods for our industry.”

**PAT O'DONNELL,
ANALOG**

“The Forums provide a pool of knowledge and experience that we can all tap into.”

**DAVE LOWMAN,
PHILIPS**

Through NMI's Industry Networks – our Best Practice Forums, Sector Specific Networks and Steering Groups – we're facilitating the collaborations that lead to success.

Our Best Practice Forums continue to do sterling work. Together, they're boosting productivity and improving the way our industry works. Individually, they're improving cycle times and yields (Production); saving R&D time and effort (EDA Tools); cutting utilities costs (Utilities) and reducing purchasing costs (Procurement). The work of the Equipment and Procurement Forums, in particular, has reached an especially exciting stage. Right now, we're exploring the possibilities for collaboration in the purchase and consolidation of equipment spare parts – with significant savings for members. Watch this space!

Thanks to the new Business Development role within NMI, this year has also seen the introduction of a new type of network – what we've called sector or business enabling networks. 'Enabling' because for the first time they've opened companies' eyes to the greater possibilities of working together – for the mutual benefit of everyone involved.

The most advanced of these is the Power Electronics network. To start the ball rolling, NMI mapped out the capabilities of all the organisations involved in the UK Power Electronics scene, from component suppliers and foundries to those involved in packaging and testing, supplies and support. We then held an inaugural networking event, the outputs from which have been extremely encouraging.



Lo Res

“It is clear that the companies represented on NMI’s Education & Training Board are keen to assist one another where possible and recognise both the value and influence of a cluster of like-minded companies.”

DARREN RACE, GROUP TRAINING & DEVELOPMENT MANAGER, FILTRONIC PLC

“ By joining the Low Power network, we’ve found out more about what other companies are doing and how we can best fit within the market. The meetings are also an excellent place to show our technology to potential customers.”

MATTHEW LAWRENSON, CEO, SPIRAL GATEWAY

There’s talk of a number of potential collaborations between fabs for long-term strategic research. Within the area of Design, meanwhile, NMI launched a Low Power network, which addresses a key limiting issue in next generation design. For the first time, NMI has identified and brought together key players from across the supply chain to share their ideas and act as a catalyst for new and innovative partnerships and solutions.

Apply the same technique to a specific business area, such as Failure Analysis, Characterisation & Reliability, as NMI is doing, and you can appreciate the potential benefits: shorter time to market and an improved bottom line.

It’s a success story NMI hopes to roll out across other sectors of the microelectronics industry, such as Analog and Mixed Signal, Integrated MEMS and Compound Semis, as well as other business areas, such as the design to manufacturing link.

For the latest on these networks, visit our website. Or if you’d like to propose another area that would benefit from NMI’s involvement, get in touch.

As for the Bristol Silicon Network (BSN), which NMI helped to inaugurate in 2003, it’s fast growing up. Membership increased during the year and this regional network now has its own website too (www.bristolsilicon.net). We’ll be putting the experience gleaned from its creation to good use as we continue to grow the wider microelectronics community within the UK.

Preparing for success

Without the requisite skills, how can Britain possibly hope to maintain its position within the increasingly competitive global microelectronics marketplace?

“As well as giving me a more in-depth understanding of silicon processing in general, the modules have given me some particularly valuable ‘nuggets’ that have helped me with very specific issues in my job.”

**DAVID CLARK,
RAYTHEON**

“A particular strength of the programme is the interaction between academia and industry experts. It was noticeable that both benefited greatly from the networking opportunities.”

**NEIL HARPER,
ZARLINK SEMICONDUCTOR**

Building upon the success of previous years' initiatives, NMI continues to influence national education policy to cater for industry's current and future demands.

The CEESI (Continuing Education in Electronics Systems Integration) programme, which we helped to introduce three years ago, continues to go from strength to strength. This year saw the introduction of a number of new MSc modules that can either be studied on their own, as short courses for Continuing Professional Development (CPD), or as part of a programme leading to an MSc. The fact that they can be studied on a distance learning basis makes them particularly attractive to existing, busy engineers, of course. What's more, there are more modules in the pipeline. For more on this, visit www.ceesi.ac.uk

The Integrated Graduate Development Scheme (IGDS) programme in Advanced Silicon Processing and Manufacturing Technologies continues to develop and adapt to meet the needs of our industry engineers and specialists. The latest module in Production Management, for example, explores cutting-edge techniques and influences on the manufacturing process, such as line balance and the design to manufacture supply chain. IGDS also reached something of a milestone this year. In December, the first delegate to complete the programme qualified with a Distinction. Congratulations to Paul Sermanni of Motorola.

NMI's Management and Leadership Development Programme, Insight, was designed specifically for the industry by the industry. In 2002, the Programme received accreditation from the Chartered Management Institute; this year it's about to award its first Diploma – to Sam Jenkins of Infineon Technologies – with many more candidates in the pipeline for 2005. Looking to the future, we'll shortly be running a module that will allow anyone who's interested to assess the Programme's value for their own particular organisation. Another course has been suggested – with participants from different companies – that would allow debate on best practice in management, leadership and culture development.

At a grass roots level, NMI continues to work with SEMTA (the Sector Skills Council for Science Engineering and Manufacturing). We're currently collaborating with industry to produce a White Paper on skills requirements for business, called The Sector Skills Agreement. Its outcome will influence Government policy and investment in education and workforce development to improve productivity, competitiveness and business performance.

Representing our industry

The secret to influencing Government is making yourself heard with a collective voice: one of NMI's key roles.

“The NMI R&D tax seminar gave a useful update on the current position within the industry, the DTI and the Inland Revenue. It also provided opportunities to hear others' experiences and ask questions of the speakers.”

**DAVID BURROWS, DIRECTOR,
MICRON EUROPE**

NMI has made an extremely valuable contribution to progressing the debate on the future of the silicon design industry. Without NMI's contribution of time and their knowledge of the industry, I don't think the UKpsc project would have been as thorough, timely or as well validated.

**STEVEN BEAUMONT, DIRECTOR,
INSTITUTE FOR SYSTEM LEVEL INTEGRATION**

During the year, NMI has continued to build and strengthen its links with Government, with some impressive results.

One of our greatest successes has been in the area of research and development. NMI successfully lobbied the Government to change the R&D Tax Credit rules so that advanced 'bought in' development software tools used in New Product Development would qualify for tax relief. To ensure that our members were able to benefit to the full, we organised an industry event, in conjunction with KPMG, to clarify the application process. It proved to be a real eye-opener with many companies discovering they were entitled to a lot more than they had originally thought.

Last year, we reported that NMI had spearheaded the formation of the UK Paradigm Shift Consortium (UKpsc) – a collaboration between industry, academia, Government and the EPSRC aimed at building world class collaborative research activity and maintaining the UK's position in IC systems design. This year, we're delighted to report that the first stage of the project – developing a plan for building the community – is complete. Next we have to attract the all-important funding and, once again, industry can rely on NMI's full support. For the latest on this exciting initiative, visit www.microelectronics.uk.com

Specific successes aside, NMI continues to work with the DTI and other Government bodies on an ongoing basis – always in the service of our industry. At a local level, for example, we continue to support the work of regional development agencies (RDAs) wherever it touches upon our industry. Turning to energy, together with DEFRA, we continue to encourage our members to take full advantage of the opportunities presented by Climate Change Levy agreements, the UK Emissions Trading Scheme and lately, the EU Emissions Trading Scheme. And at both a regional and national level, we continue to partner the Carbon Trust, ensuring that members capitalise on the support mechanisms available. Already, this is having a real impact on energy efficiency at member sites, with more to come through our Energy Benchmarking activity.

Looking to the future, NMI continues to feed into the EIGT (Electronics Innovation & Growth Team). We've lobbied strongly, along with the National Advisory Committee on Electronic Materials & Devices, for the need to retain semiconductor manufacturing infrastructure. Other specific inputs include the challenges for SME design houses in dealing with a complex supply chain. With the support of the DTI, The Environment Agency and SEPA, NMI also runs the UK Manufacturing Environmental Advisory Committee. Its job is to identify legislation that will impact upon our industry at an early stage and take a pro-active role towards its implementation.

And in yet another capacity, NMI works closely with the Health and Safety Executive (HSE) to share best practice and communications through a Joint Working Group.

NMI: many hats, one cause – yours.

The power of knowledge

NMI represents a huge pool of knowledge – a pool members can tap into at any time. No one knows more about the industry. And that's a fact.

During the year, NMI's knowledge bank has grown considerably, not least on the web. The new, secure Members area of our website is brimming with information. Through it, members can access all the reports and other outputs from our Best Practice Forums; a comprehensive Equipment database listing tool sets and key contacts; for the Design community, an EDA Tool database; and a whole lot more besides.

Turning to industry knowledge, NMI has done a substantial amount of capability mapping over the last year, in areas such as Power Electronics; Low Power; Failure Analysis, Characterisation & Reliability. The Fabs section of our Company Directory and Database is now complete and the Design section is growing fast, making it the definitive listing for our industry. Our R&D Directory and Database too is under construction and will soon be helping members to find suitable academic R&D partners.

Funding is something that's close to all our hearts. The trick is in knowing what's out there. To bridge this knowledge gap, NMI pulled together a complete listing of all the public funding and support schemes available, from some of the better-known ones, like the Micro and Nanotechnology Fund, to large but under-utilised ones like MEDEA. To introduce the potential opportunities we arranged networking meetings, proactively seeking out those companies that we thought could benefit. Complementing this activity, we've kept members apprised of new and upcoming funding opportunities through dedicated Bulletins and Seminars. The next step is to incorporate all this information into a funding directory available exclusively to members.

2003-04 also saw a sharp rise in what we've called our business-brokering activity. Because NMI has taken the trouble to find out exactly who does what, we're in the best possible position to match one company's requirements with another's offering. You would be surprised how many members have found their ideal business partners as a result. What's more, we don't just point you in the right direction. NMI's Consultants will make all the necessary introductions. All you have to do is ask...

Expertise on tap

On top of all the other benefits it provides, NMI is able to offer members a range of consultancy and specialist services at a reduced rate.

Complementing the work of its Utilities Best Practice Forum, NMI continues to arrange Action Energy Assessments (supported by the Carbon Trust) for its members, together with specialist on-site implementation. Last year, members saved over £5m as a result.

Turning to Climate Change Levy Management, NMI has managed to save members in the semiconductor and CRT sectors over £4m a year since CCL was first introduced in 2001. That's equivalent to 8% of each company's energy costs – a significant saving!

For those buying or selling carbon allowances, meanwhile, NMI offers a completely out-sourced Carbon Trading service. Last year, this raised over £100,000 for members.

And that's just a selection of the consultancy services on offer. As well as Energy Management & Procurement, Climate Change Level Management and the UK & EU Emissions Trading Schemes, NMI can help with Inventory/Spares Management, Technology Transfer Management and Foundry Management. Remember all those funding opportunities? NMI can manage the application process on your behalf, leaving you to get on with the business in hand.

For a complete list, contact NMI now.



Extending our reach

That was this year, what about next?

In many areas, you can look forward to more of the same. Expect to see more industry networks, for example, be they highly productive Best Practice Forums or specifically targeted sector and business enabling networks. We've already laid the groundwork, for instance, for an Analog & Mixed Signal network, and others concentrating on Integrated MEMs, Compound Semis and high speed comms. We'll be adding to our CEESI and IGDS programmes too; welcoming more graduates through our Insight Programme; and continuing our work with SEMTA.

Continuing our role as the industry voice, we'll be lobbying Government to broaden the relief from CCL – so that even more of our members can benefit – and developing our links with UK trade and investment to generate trade missions, both to and from the UK.



Lo Res

Our website and the Members area in particular will continue to grow. We'll also be encouraging members to raise their own company profile. Post your press releases and advertise your vacancies at www.nmi.org.uk – it's what we're here for.

Next year will also see a greater focus on developing a wider community. NMI's membership already includes semiconductor manufacturers, design and systems houses, fabless and chipless semiconductor companies, vendors and suppliers to the industry, as well as regional development agencies. To make it more fully representative of the microelectronics sector, however, we'll be hoping to attract more start-ups and SMEs, as well as members from academia. Because the wider our membership, the bigger the benefits.

If you aren't already, isn't it time you became part of the NMI community?

The membership fees themselves represent excellent value for money and entitle you to a host of benefits you won't get from anyone else, together with a dedicated point of contact within our organisation.

To find out how you could benefit from joining, **call 01506 424890.**

NMI

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