

NEXUS
INNOVATION CENTRE
UNIVERSITY OF LIMERICK

NEXUS

INNOVATION

CENTRE

ANNUAL REPORT 2016/17



UNIVERSITY of LIMERICK
OLLSCOIL LUIMNIGH



#NexusLife

MAKING CONNECTIONS

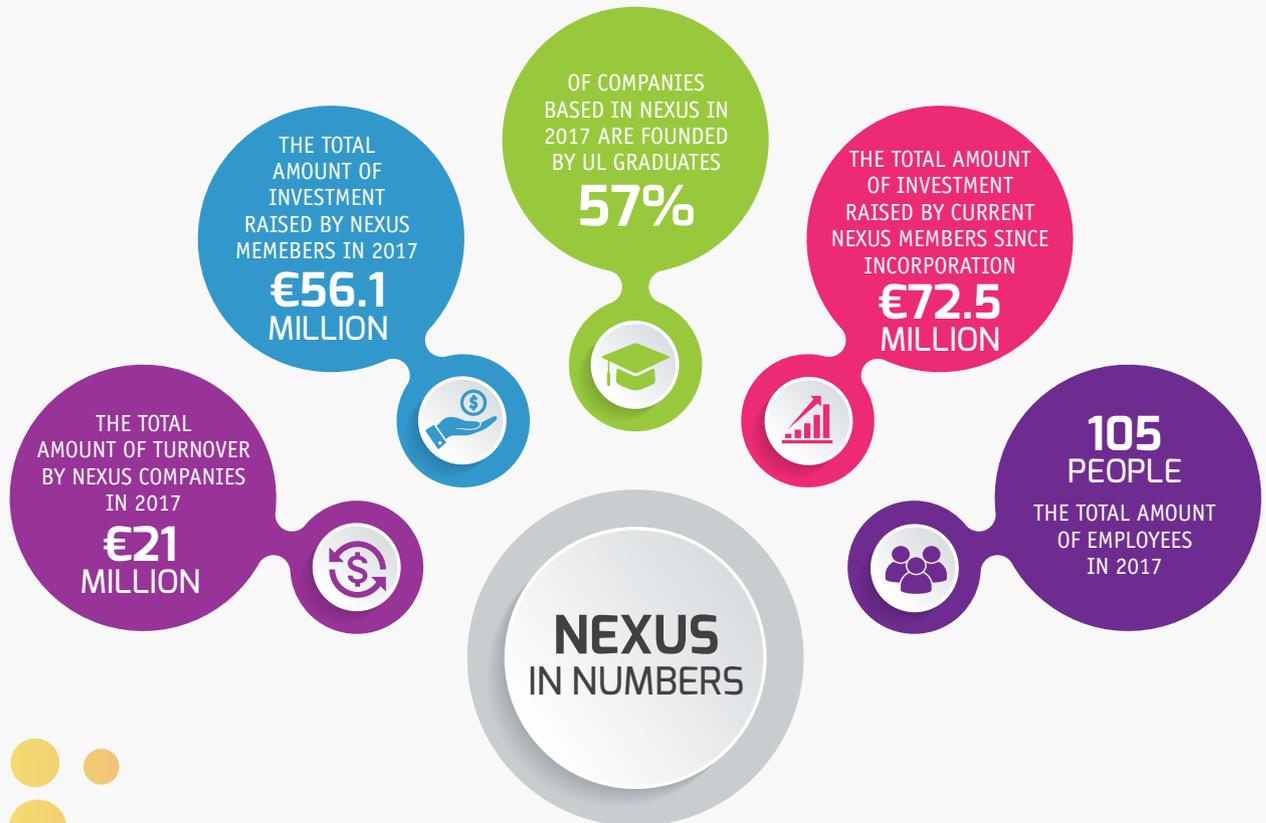
THE NAME **NEXUS** IS DRAWN FROM THE LATIN NECTERE, MEANING A **CONNECTION** BETWEEN MEMBERS OF A GROUP OR THINGS.



WELCOME TO NEXUS

Nexus is a purpose-built Innovation Centre at the heart of the University of Limerick. Nexus enables the accelerated development of national and international start-ups with a global reach and the commercialisation of academic research, resulting in the creation of new businesses and jobs.

Nexus is the hub of innovation and start up activity where entrepreneurs can develop, collaborate and grow. We challenge start-ups to move past conventional ideas around business development and encourage them to become highly connected, agile, smart start-ups.



OUR VISION

BECOME A LEADER IN SUPPORTING
EARLY STAGE START-UP COMPANIES
AND THEIR INNOVATION.



#NexusLife

**NEXUS CELEBRATES FIVE YEARS
SUPPORTING START-UPS WITH ITS
CURRENT MEMBERS IN 2017**

EXECUTIVE SUMMARY

The University of Limerick's strategic plan aims to forge new ways to translate research innovations in order to advance the economic, educational and social development of the region. We seek to educate graduates who are prepared for pioneering roles in society as leaders, innovators and entrepreneurs. Nexus Innovation Centre is an important part of UL's knowledge transfer strategy and a symbol of UL's can do attitude. It aims to foster development through the Mid-West region and ensure the maximum economic benefit from state R&D investment. Having exceeded all its targets, Nexus supports the UL strategy to support innovation, entrepreneurship and creativity. The past 6 years saw Nexus expand its reach supporting member companies, students, industry collaborators, funding and knowledge providers. With a focus on start-up initiatives that support a pipeline of existing and future entrepreneurs and technologies, the centre contributes to a growing entrepreneurial capability and supportive environment to ensure the growth and survival of start-ups in the region.

“THE CENTRE OPERATES AS PART OF THE TECHNOLOGY TRANSFER OFFICE (TTO) WHOSE REMIT IS TO ENSURE THAT KNOWLEDGE IS CHANNELLED INTO THE PRODUCTIVE ECONOMY AT REGIONAL, NATIONAL AND INTERNATIONAL LEVEL”

PAUL DILLON
DIRECTOR,
TECHNOLOGY TRANSFER OFFICE

EXECUTIVE SUMMARY (continued)

Nexus is a serviced custom built facility designed to facilitate the development of a community of entrepreneurs and innovators. The building is a bright open space with high quality shared and private office, networking and meeting spaces that encourage the formal and informal interactions critical to the development of our community. Nexus has a proven track record in supporting entrepreneurs and start-up companies from the early feasibility pre-investment stage right through to business development, growth and investment. The Centre offers co-working space for 12 companies who are at the early stages of forming a company. Nexus also provides 18 dedicated incubation units ranging in size from 20m² to 52m². In addition two fully equipped laboratories are occupied by spin out companies from the University. Member companies participate in themed workshops, training programmes, boot camps, networking events, clinics and the centre is host to the pioneering Bnest Social Enterprise programme merging the best of Nexus commercial practices with the additional needs of social entrepreneurship. Engaging in networked activities is important to the strong, connected community where success is celebrated and lessons learned from fast fails.

To date current Nexus clients, which range from award winning technology and bio technology companies to others with a skincare and nutrition focus, have raised €72.5 million in investment since inception. The centre is open to applications from innovative start-ups which have potential to grow in international markets. In 2017 the Nexus Member companies created over 105 quality jobs with a combined annual of €21 million.

**“NEXUS IS VERY MUCH
OUTWARD FACING. IT
REACHES OUT TO START-UPS
AND SCALING COMPANIES...”**

DR. MARY SHIRE
VICE-PRESIDENT RESEARCH





€72.5
MILLION

THE TOTAL AMOUNT OF INVESTMENT
RAISED BY CURRENT NEXUS MEMBERS
SINCE INCORPORATION

€21
MILLION

THE TOTAL AMOUNT OF TURNOVER
BY NEXUS COMPANIES IN 2017

CASE STUDY

CALA MEDICAL CASE STUDY

BACKGROUND TO CALA MEDICAL

Cala Medical is a medical device company developing new therapies for sepsis, a severe life-threatening syndrome that kills more than 6 million people worldwide each year and was a causative factor in 60% of all in-hospital deaths in Ireland in 2013. Sepsis causes more deaths than breast cancer, prostate cancer, and AIDS combined and there are very few new therapies in the pipeline.

Cala Medical was co-founded by Brian Noonan, Todd Kagawa and Jakki Cooney. Todd and Jakki have collaborated for many years on the fundamental science that underpins Cala Medical's pipeline, while Brian has spent most of his career in the USA working on infectious disease therapies in the pharmaceutical industry.

"I met Jakki for the first time in the mid-90s when we overlapped as post-docs at the University of Victoria in B.C.,

Canada. She then took an academic position in New Zealand, which was where her collaboration with Todd began. In 1996 I moved to Cambridge Massachusetts to work in the Biotech/Pharma industry."

"Fast forward about twenty years and Todd and Jakki are established at UL and I am commuting back and forth from Boston to complete an Enterprise Ireland commercialisation fund project that has convinced us that we had a much-needed sepsis therapy on our hands."

With the early preclinical data from the project showing such promise, Cala Medical was founded in February 2017 with funding secured from angel investors and the Enterprise Ireland HPSU program and in May 2017 the company moved into the Nexus Innovation Centre.



NAME

BRIAN NOONAN

BACKGROUND

INFECTIOUS DISEASE R&D

STARTUP

CALA MEDICAL

CONCEPTMEDICAL DEVICE FOR SEPSIS
THERAPY**STATUS**

PRODUCT DEVELOPMENT

**ONE YEAR LATER**

Now a year later, Cala Medical has recently expanded its footprint in the Nexus by moving into laboratory space there. "The company's research activities are now fully consolidated in the Nexus Centre and while a lot of our scale-up synthesis and manufacturing needs to be outsourced, it is great to have a dedicated space for in-house testing and quality control."

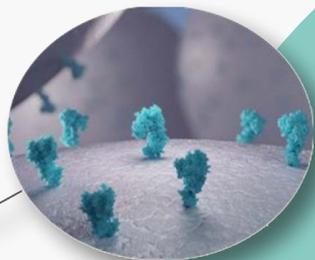
2018 will be an exciting year for Cala Medical. The team is working to secure a major industry partner to help develop its Cytoflow5 technology and bring it to market and the company plans to expand and recruit additional staff and strengthen its product portfolio.

Interactions with clinicians at critical care hospitals in Ireland, Europe and the USA are being strengthened as well.

ADVICE

"Fund-raising is a challenging and time-consuming process. The reality is that the majority of the potential investors you talk to will not be convinced. I believe it is very important to listen to their feedback and any challenges they have raised. Have they identified an important flaw that you need to address (hopefully not), or have they just not heard the message correctly? Your pitch needs to evolve and improve all the time."

"If you want to start your own business, the most important personal trait needed is resilience. This allows you to be knocked down repeatedly and keep coming back stronger than ever. To be resilient you need optimism, a positive attitude, and the ability to learn from each mistake. Don't hide from the setbacks, profit from them."



"THE COMPANY'S RESEARCH ACTIVITIES ARE NOW FULLY CONSOLIDATED IN THE NEXUS CENTRE AND WHILE A LOT OF OUR SCALE-UP SYNTHESIS AND MANUFACTURING NEEDS TO BE OUTSOURCED, IT IS GREAT TO HAVE A DEDICATED SPACE FOR IN-HOUSE TESTING AND QUALITY CONTROL."

BRIAN NOONAN
CO-FOUNDER CALA MEDICAL



BUILDING ENTREPRENEURS OF THE FUTURE

More than 25 second-level students from schools across Limerick took to Nexus this year to take part in the inaugural Entrepreneurship, Creativity and Innovation Camp. The Nexus Innovation Centre and Kemmy Business School jointly delivered the camp, which aimed to create a student mindset that is solution focused, providing knowledge and skills to design innovative solutions that result in new business opportunities.

The five-day programme, was delivered in an engaging and creative way through workshops, role playing, company visits and entrepreneur guest speakers developing skills in team work, communication, project management and design thinking. As well as this, students got the chance to practice their knowledge in purpose-built studios, workshops and computer labs and receive feedback from experienced mentors. The camp was also an opportunity for second-level students to experience life on a higher-education campus.



Speaking at the camp Briga Hynes, Lecturer in Entrepreneurship at KBS, UL said: "KBS was delighted to partner with Nexus on this exciting initiative which very much aligns with the entrepreneurial ethos of the school. Briga added that there is a wealth of innovative thinking among our bright student population and programmes such as this bootcamp are central in unleashing the entrepreneurial potential and capability of students at an early age to cultivate the next generation of entrepreneurs. We hope this programme has played a part in instilling that entrepreneurial mindset in students and their start-up journey".

The bootcamp was supported by the Higher Education Authority (HEA), on behalf of the Department of Education and Skills as part of investment of €250,000 to provide nearly 1,000 students initiatives that stimulate creativity, innovation and design skills among students.



NEXUS MEDICAL ENTREPRENEUR LANDS KEYS TO NEW CAR AS NISSAN GENERATION NEXT AMBASSADOR

Nexus based medical entrepreneur Chris Kelly had plenty of cause for celebration this year when he landed the keys to a brand new, taxed and insured car after becoming a Nissan Generation Next ambassador.

Chris fended off competition from over 1,000 applicants to secure one of eleven places that were up for grabs on the prestigious ambassador programme which helps people to get ahead with the backing and support of Nissan.

His success followed a three week public vote where over 100,000 votes were cast online for 20 finalists. The Limerick man ran an energetic campaign, receiving huge support from family, friends and supporters across the county.

Each ambassador was given the choice of a brand new, taxed and insured car from Nissan's award winning fleet to drive for a year and Chris selected the Nissan Pulsar as the car best suited to helping him to take his business to the next level of success.

Chris is on a mission to improve patient care in hospitals worldwide. His company, Pinpoint Innovations, has developed a patient tracking system that monitors the flow, efficiency and utilisation rates of operating theatres in hospitals.

Pinpoint has partnered with the Perioperative Care team in the

University Hospital Limerick and is piloting its first product, Xsonor, over the next six months. It plans to move to five other hospital locations across Ireland and to close out a round of seed investment before the end of the year and to scale the company into the U.K. late next year.

Pinpoint currently employs six people and is hoping to double that number over the coming year.

"I am delighted to become a Nissan Generation Next ambassador and to drive away with a new Nissan Pulsar. The car will make a massive difference to my business, helping me to attend meetings around the country as we work to expand our operations and to overcome the challenge of delivering and installing tracking devices," said Chris.

"The equipment we need to transport ranges from wearable devices, charging cabinets, laptops and mapping devices. Our Nissan Pulsar means that we no longer have to rely on couriers and it puts us within easy reach of any new hospital location. I would like to thank everyone who voted for me and I'm really looking forward to developing my business with Nissan's support," he added.



Chris's passion for delivering better, more efficient care to patients, not just in Ireland but around the world was recognised by Nissan when he applied to the Nissan Generation Next ambassador programme.

"Chris is an exceptional entrepreneur who shares Nissan's commitment to excellence and innovation. We are delighted

to welcome him to the Nissan Generation Next ambassador programme and to supply him with an award winning Nissan Pulsar so that he can drive his business to the next level," said local Nissan dealer, Pat Tiernan, Dealer Principal, Pat Tiernan Motors, Limerick.



BNEST LAUNCH SECOND SOCIAL ENTREPRENEURSHIP PROGRAMME

BNest, the only dedicated social enterprise start-up programme within the Mid-West has once again partnered with Nexus to deliver this unique programme, aimed at supporting those driving social enterprise activities in the region. The BNest Programme is specifically aimed at emerging social enterprises. This year's programme sees 11 participants joining Nexus for a six month programme designed to merge the best of Nexus commercial practices with the additional needs of social entrepreneurship.

Last year nine local enterprises set out and are now actively out there making a real difference to society - in areas as diverse as equine therapy for children, fighting rural isolation, enabling people to deal with difficult personal challenges, enabling access to education, as well as helping give real voice and presence in society to those we too often ignore.

THE 2017/18 PARTICIPANTS WERE:

BiaBox: A smart and cost-effective way of delivering locally produced fresh food straight to your door – helping build stronger community bonds between local food producers and consumers.

Isidore Furniture Scheme (3Rs): “Re-use, Recycle & Reduce” – a furniture recycling scheme that creates a dual impact: helping people in need while reducing waste going to landfill.

Ododo.ie: Strengthening mental resilience of parents and guardians of children with special needs through a learning programme designed specifically to their needs.

A.C.M.: A community-driven initiative that will put Castleconnell on the map as a food, health and wellbeing destination. A unique social enterprise tourism initiative which also addresses social issues to create a more resilient community.

L.A.G.: Limerick Autism Group provides support for autistic children, their parents and siblings. Camps run by LAG facilitate fun, joy and laughter through sensory games, music therapy, art and crafts, soccer, basketball and much more.

Visual Limerick: Visual Limerick showcases the positive attributes of Limerick. Utilising shop windows and other public spaces to promote Limerick's educational, literary, artistic, design and innovation works, concepts and ideas – it is a simple yet powerful way to build on the positive image of Limerick.

Back2New: Back2New is a community upcycling service with a difference. Combining creative talents with upcycling skills while providing a retail outlet for the talents that emerge to broaden the work choices for participants.

ICJDN: Irish Criminal Civil Justice & Disability Network is an initiative concentrating on the Gardai, Legal, Probation and Prison Services. It helps them improve the experience of those with an intellectual, learning or physical disability who engage with them as a victim, witness, suspect or offender.

The co-location of commercial and social entrepreneurial programmes is a unique approach and this year's cohort are embarking on a similar journey covering once again a wide range of endeavours from disadvantaged access to the justice system, a new food cooperative, programmes aimed at binding disconnected communities together and much more.





CALA MEDICAL is a spin out from the University of Limerick, funded by angel investment and Enterprise Ireland. Their patented immune modulation technology is being developed to treat sepsis, a huge unmet medical need that affects over 26 million people worldwide each year.



SMARTFACTORY

EFFICIENCY THROUGH INNOVATION

SMARTFACTORY captures, analyses and visualises key performance indicators from the manufacturing, logistics and utility sectors using Industrie 4.0 technology. With their Digital Workflows, they guide technicians with clear, step-by-step, interactive instructions and help to reduce the amount of resources required to gather and communicate critical information across an organisation and dynamically translate this data into actionable intelligence. SmartFactory solutions are built on the industry proven technology of their hardware partners Siemens, TurkBanner and ThingWorx.



CELIGNIS provides services for the laboratory analysis of biomass. In particular, they focus on analysing samples for properties relevant to the production of biofuels and bioenergy. Celignis are a spin-out from an FP7 project co-ordinated at the University of Limerick, based on IP developed by founder Dr Daniel Hayes for rapid analysis biomass. Currently they focus on five core analysis areas: (1) Feedstocks for the production of advanced biofuels. (2) Liquid Outputs of Bio-Conversion Processes. (3) Feedstocks for combustion or use in other thermal processes. (4) Physical Properties of Biomass. (5) Aquatic Biomass (e.g. seaweed). Celignis have developed a series of models that predict 13 lignocellulosic parameters relevant to the production of advanced biofuels by using the near infrared (NIR) spectra of biomass. While it takes approx 2 weeks to determine these parameters via standard (chemical) methods, it takes only 2 minutes using their NIR models. The cost is also significantly reduced. No other company provides such a rapid or low-cost service. Their method allows clients to analyse many more samples than would otherwise be possible.



NEUÚ
SEAWEED SKINCARE

SEAGREEN BIO LIMITED is a science-backed marine plant skincare company that has developed a unique seaweed oil extract for use in its premium seaweed-based natural skincare range. The company will commence sales in 2018 under its skincare brand NEUÚ. NEUÚ SEAWEED SKINCARE is a natural chemical-free skincare brand formulated with a scientifically developed seaweed oil extract combined with a range of terrestrial plant extracts to promote skin nourishment, elasticity and hydration. The seaweed oil extract produced by the company at its laboratory in UL is the key USP for the product range as it is extremely rich in polyphenols, vitamins, amino acids, anti-oxidants and minerals, all of which are scientifically proven to benefit the skin.



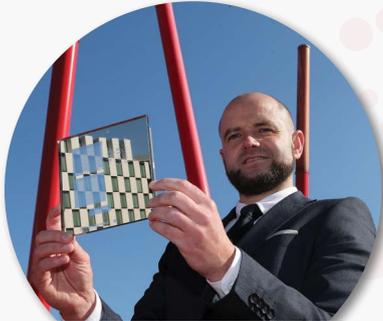
 **horizon**

HORIZON Globex has been commercially delivering optimized software since it was first incorporated in Switzerland in 1999. In December 2017, phase one of their Carbon Neutral Ethereum Mining service went live with a 10kWp Photovoltaic Solar Farm that they use to offset their Ether footprint for the “gas” that they consume to execute their Ethereum blockchain smart contracts. Horizon Globex already drive innovation in the smartphone space by licensing their optimized voice apps to the world’s largest telecommunications operators for use by those billions with only 2G, and 3G connectivity. By leveraging their telecommunications customers global reach, they are expanding their apps into the blockchain space to deliver unique blockchain solutions for those billions without access to banking.



 **indwell**

INDWELL offers a lean human resource management and data protection service to small and medium sized enterprises to support them in fulfilling their statutory obligations and company requirements. By operating as a business partner with the client, Indwell provides a customised, cost effective and efficient service that is tailored to the clients needs.



ARRALIS, a company founded in Ireland in 2013, provides world leading expertise in RF, micro and millimetre-wave technology. They have offices in Ireland, UK and Hong Kong. Their core focus is in W, Ka and E frequency bands. Arralis design and manufacture Monolithic Microwave Integrated Circuits (MMICs), modules and antennas for these bands and provide fully integrated systems for vision and communications applications. Their products, which are the ultimate in precision and innovation, are used in both global and space environments where accuracy and reliability are critical.



A global engineering and project delivery company with a focus on energy and natural resources. **SPML** delivery critical infrastructure while using the best technology and innovation. They are an outcome business and focus on the outcome their clients are looking for.



OPTIFLOW eCommerce is a specialist advisory business focused on helping business owners and Irish retailers grow online revenues. The business also advises on software Usability (UX) and Customer Experience (CX) from the end-user and business user perspective. OptiFlow eCommerce have worked with national and international companies including Smyth Toys, Glanbia, Musgraves, Cashs Mail Order, McSport.ie, Caulfield Industrial, Nourish, Salaso, Sisk Healthcare, McMahon's Building Providers and Asia Market. Their services include eCommerce performance audit, online conversion optimisation, online shopping journey evaluation & email marketing. They also work with Enterprise Ireland through the Innovation Vouchers Scheme assisting software start-ups.

“WHAT I MOST LIKE ABOUT BEING BASED IN THE NEXUS INNOVATION CENTRE IS THAT YOU ARE WORKING IN A COLLABORATIVE SPACE WITH LIKE-MINDED PEOPLE.”

PAUL MCGURRAN
OPTIFLOW ECOMMERCE



VISITORFLIX develop destination video guides showcasing things to do, places to go, stay, eat and shop for tour operators, transport and accommodation partners to use online, onboard and on social media. To date they have over 700 video produced that have been loaded over 6 million times in 151 countries. In 2018 their videos will be accessible to 2 Million Aer Lingus passengers inflight on transatlantic flights.



nüdest
food with nothing to hide

NÜDEST FOODS Ltd was founded in 2016 by Fiona Keane when she experienced a gap in the market for a truly user friendly and delicious, nutritious snack offering for busy folk on the go. NüDEST Snack Packs were launched in July 2016 onto the Irish market via BWG supplying to Spar, Londis and Mace. The UK market opened up in November 2017 through Ocado and Wholefoods. In January 2018 Musgrave's signed up. In Belgium the company supplies Deli Trateurs. NüDEST Snack pouches are filled blended whole fruit, grain and yoghurt. Only all natural ingredients are ever used and no refined sugar ever added. The two initial flavours are Banana, Honey and Oats and Apple, Pear and Cinnamon. The third delicious Triple Berry and coconut yoghurt flavour is coming in June 2018. This will be a vegan and gluten free option. The company is expanding its distribution capacity in the Irish and UK markets in 2018.



SALUTOPARTNERS uses a successful blend of skills, experience, and technology to deliver innovative services that generate prosperity such as Hatch My Fund. Hatch My Fund is an independent fund performance solution that may be applied to any pension or investment fund. The solution generates fund indicators of buy/hold or sell. It is used by financial advisors and their clients to avoid fund losses while providing the opportunity to exploit fund growth opportunities.



SHADOWMAN™
SPORTS

SHADOWMAN SPORTS design and distribute the only realistic tackling system for contact sports. Shadowman is a unique training tool that recreates a better tackle environment. Shadowman is used in the NFL, NCAA & and over 1800 high schools and youth programmes in the USA.

“IRELAND IN TERMS OF THE START-UP SUPPORTS AND NETWORKS IS ONE OF THE BEST RESOURCES GLOBALLY.”

JP HARTIGAN
SHADOWMAN SPORTS



VISTRATO
visual strategies

VISTRATO develop online products to improve efficiencies in the management and operations of worldwide ports and terminals involved in the shipment of dry bulk cargoes such as Iron Ore, Bauxite, Biomass, Alumina, Grain etc.



nualtra
making a difference in nutrition

NUALTRA is a dedicated supplier of Medical Nutrition with the goal of delivering great-tasting, affordable Oral Nutritional Supplements (ONS). Their purpose is to create better choices in medical nutrition and they are transforming the market by innovating the best-tasting and most cost effective products. Nualtra are currently the fastest growing Medical Nutrition Company in the UK and Ireland, working closely with Clinical Commissioning Groups (CCGs), Nursing Homes and Health Authorities to introduce a range of supplements and improve patient health through enabling a higher rate of compliance. Nualtra's supplements have been proven to achieve up to 96% patient compliance – a market leading rate that reflects our commitment to produce the best-tasting products.

Nualtra pride themselves on the ability to deliver great-tasting supplements at an affordable price whilst offering a more responsive level of service for their customers.

To date Nualtra have saved the HSE in the region of €12m per annum over the last 5 years and have also saved the NHS close to £24m.



FRAWLEY/NEVILLE
BRANDING CONSULTANTS

In 2014 Neville Design Group and Frawley Marketing merged their respective businesses to form Frawley/Neville. They are a branding consultancy that brings together two core disciplines of strategy and creative. Their name represents the collective experience of two successful entrepreneurs who have crafted a unique approach in helping companies differentiate themselves in the marketplace.



modig
CORPORATE SERVICES

MODIG CORPORATE SERVICES are a leading provider of innovative and pragmatic Safety, Health & Wellbeing services. Providing consultancy and training solutions to a wide range of clients across Ireland they specialise in areas such as Safety Management Systems, Ergonomics, Chemical Safety and Human Behavioural Factors. Their CEO Malin Kelly bring a unique international perspective to Modig's approach by bringing people and services together. In doing so she has time and time again shown an ability to think outside the box.

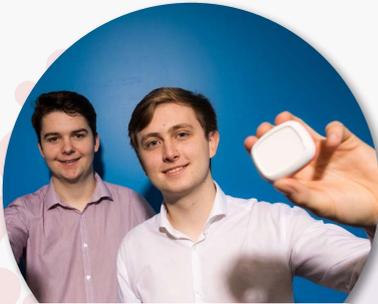


LYNK  **MECHANIC**

Car Maintenance is a €690 BN global market that is currently only 5% digitised. **LYNKMECHANIC** aims to digitally disrupt this vast market as Uber and AirBnB have done in their respective markets. By deploying our innovative management software solutions into independent garages, LYNKMechanic gives motorists the convenience of online booking directly to their local garage. Unlike the current phone and paper based system, motorists save time, garages gain efficiency, and the entire process is digitally managed.

“THE NEXUS CENTRE HAS AFFORDED MODIG THE OPPORTUNITY OF A SPACE WITHIN WHICH WE CAN CREATE, INNOVATE & FLOURISH AS A YOUNG COMPANY. IT HAS ALLOWED US THE PROFESSIONAL SPACE TO ENABLE GROWING RELATIONSHIPS, NETWORKS AND AN EXTENDED CUSTOMER BASE AND FOR THAT WE ARE THANKFUL.”

MALIN KELLY
MODIG



PINPOINT, in collaboration with the University Hospital Limerick, has developed a solution for perioperative care teams, focusing on providing better conditions.

“NEXUS HAS PROVIDED US WITH A COMMUNITY OF SUPPORT. THE CENTRE IS BUILT UPON THE CULTURE OF GIVING.”

CHRIS KELLY
PINPOINT INNOVATIONS



ALTRATECH brings biotechnology, semiconductors and genetics together, in a portable battery-operated 1-hour viral RNA detection kit, for HIV and other infectious diseases. This enables rapid diagnosis and decision-making, on-site, in-clinic, by nurses, clinicians, veterinarians, and eliminates the delays of days or weeks waiting for lab RT-PCR results.



TAMM (Technology Aided Marketing Management) is a cloud based Marketing Project Management System for the management of marketing resources across multiple site locations.





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