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Putting a spotlight on Irish medtech

Medtech on the rise!

"In the past 25 years, the medtech sector has gone from a burgeoning industry to a global powerhouse," says Irish Medtech Association Chair and FIRE1 CEO Conor Hanley. "In that time, the number of companies has increased from 50 to 450+, and exports have quadrupled to €12.6 billion," he adds.

"This success has been accelerated in the past couple of years with more than €316 million in investments and 2,300 jobs publicly announced in the sector, and €178 million finance raised by startups."

KPMG Tax Director Mary McGinley says, "Having been involved in the medtech sector since the late 70s, KPMG advises start-ups to multinationals, and supports third-level innovation programmes, fundraising, international expansion and M&A activity. The medtech landscape will look different in 2030 as the digital, medtech engineering and communications functions blend – all areas where Ireland already excels. With a relatively small but very open business environment, we are well positioned to be leaders in this new medtech industry environment."

Irish Medtech Association Director Sinead Keogh says that there is already major disruption, both in terms of innovation and the business model.

"Smart factories are improving processes and products, while reducing time to market for new innovations by medtech companies, and patients are becoming empowered by innovations from the cross-sector collaboration between medtech, biopharma, and ICT. Additionally, value-based care is putting the focus on medtech solutions rather than products with an estimated 60pc of payments to be tied to patient outcomes by 2020. Lastly, new business models and financing is seeing the volume of M&As (mergers and acquisitions) decreasing while the value is increasing steadily."

Keogh adds, "Irish companies are well placed to make the most of new opportunities. Today, we're calling on medtech organisations to share their success stories with us by entering the 2019 Irish Medtech Awards. There are some fantastic examples from past winners like Bausch + Lomb, which won following a major $200 million investment by its parent company to expand the Waterford site. Medtronic's Galway facility with a proud 30+ year history with a vision for the future and a state-of-the-art Customer Innovation Centre. And, Abbott Diagnostics Longford won for its 'Becoming World Class' programme driving continuous improvement."

According to Enterprise Ireland Head of Lifesciences Sector Deirdre Glenn, homegrown companies are now playing a bigger role driving growth and creating jobs, "with start-ups standing out by developing life transforming technologies that are reaching international markets".

Glenn says, "We're delighted to be a part of Medtech Rising and the Irish Medtech Awards to help bring these companies together to share their stories."

IDA Ireland's MedTech Division Manager Rachel Shelly says: "The Irish Medtech Awards are a great way to recognise companies both big and small, that collaborate and innovate every day to grow this thriving industry. Medtech in Ireland is worldclass, not just because of the strong business environment, but also because of breadth, depth, ambition and relationships across the entire Medtech ecosystem."

Medtech Rising: The CEO Conference and Awards, which is hosted by the Irish Medtech Association, Enterprise Ireland and IDA Ireland, will bring global leaders to Galway, 4th-5th December.

The hosts are now calling on medtech organisations to enter the Irish Medtech Awards 2019 across the six categories: Medtech Company of the Year; Emerging Medtech Company of the Year; Academic Contribution to Medtech Award; eHealth Innovation of the Year; Medtech Partner/Supplier of the Year; and Best Value of Medtech Campaign. You can find out more on **www.medtechrising.ie**

KPMG Ireland Tax Director Mary McGinley; IDA Ireland MedTech Division Manager Rachel Shelly; Merit Medical Senior Director Accounting EMEA Niamh Divilly; Irish Medtech Association Director Sinead Keogh; and Enterprise Ireland Head of Lifesciences Sector Deirdre Glenn

Irish Medtech Awards 2018

The Irish Medtech Association, Enterprise Ireland and IDA Ireland would also like to thank Platinum Sponsors KPMG; Gold Sponsors, Bemis Healthcare Packaging Europe, Teleflex, VistaMed Freudenberg Medical, Kuehne + Nagel, and SteriPack Contract Manufacturing; as well as Silver Sponsors, Creganna Medical part of TE Connectivity, Hanna Moore + Curley, and the Irish Medtech Skillnet.

Making a difference

We interview John Power of Aerogen about making an impact in the medtech sector with their innovative product, and what it means to win the Outstanding Contribution to Medtech Award at the Irish Medtech Awards 2018

From setting up shop above a butcher's in Galway in the late 90s to becoming a global business selling products to more than 75 countries around the world and treating over seven million patients, Aerogen's evolution is what most other companies dream of. John Power, CEO of Aerogen, leads the business which has revolutionised the delivery of liquid drugs into aerosols.

"I was trying to think of a gap in the medtech market," says John Power. "I realised that the means of aerosolising drugs for patients on ventilators had not been updated for about 50 years. When ventilated, a patient is still most commonly treated with intravenous drugs, but one-in-three people on ventilators have lung-related conditions.

"The big discovery was developing a technology that allowed drugs in liquid to be changed into an aerosol form, with greater repeatability and accuracy of delivery than had ever previously been achieved and therefore facilitating much more effective drug delivery to the lung. Targeted drug delivery is all about delivering specific medication to the site of action, or absorption in a controlled manner. If you can accurately and repeatedly deliver drugs to the specific body part which requires it, this means using far less drugs and there are far less side-effects."

After teaming with a Silicon Valley-based company in 1997, Aerogen became the first company in the world to develop an aerosol system that could deliver drugs effectively to those on life support ventilators. Since then, the company has grown rapidly with a compound annual growth rate of 28pc over the past decade. The company now employs 230 people out of its Headquarters in Galway where the company is soon to open an additional 30,000 sq ft of research labs. Approximately 70 full-time commercial staff are in overseas offices at any time, the largest office being in US Chicago and California, but other offices in Germany, England, France, Hong Kong, Dubai and most recently New Delhi.

Clearly Aerogen's innovation has had a massive global effect. "I would say our aerosol products have been one of the most impactful products in intensive care in the last 20 years for respiratory impaired patients," says Power. "We were also the first company in the world to develop an effective aerosol treatment for neonatal care.

"Babies have tiny lungs and airways which makes it an even greater challenge to create an aerosol to travel through their respiratory system. But we were the first company to develop the tech to do that. We have branched out into the emergency room too, as the first point of care for patients with severe respiratory conditions where our Aerogen Ultra is used to open up airways to reduce inflammation and clear lungs. Clinical trials have demonstrated that this fast-effective treatment in the emergency room can reduce hospital admissions of such patients by up to a third, freeing up hospital space and reducing the cost of care. For a little company from Galway, we have had a global impact in healthcare."

Helping people

Power says knowing that they are making such a positive difference in people's lives is what keeps him and the company going through good and bad times. One of the programmes which has sparked a passion for him is a clinical trial for surfactant for premature babies.

Power says, "Premature babies are born without a surfactant coating in their lungs, which helps to expand and contract and allow blood oxygen transfer. The only way to deliver surfactant currently is to intubate the baby, a highly invasive and traumatic procedure for such an immature respiratory system. Aerogen has developed a means to be able to aerosolise it through nasal delivery. This means there will be a much-reduced need for intubation and could result in the greatest improvement in treatment and care of premature babies in the past 30 years.

"This is really dear to my heart and we're working hard to get it across the line. We have consistently utilised all our device business profits to fund these critical trials, and whilst there is no guarantee of success until concluded, the potential to deliver aerosolised surfactant in preterm infants would be one of the most significant advances in neonatology in recent history. Such a challenge certainly helps to get you up in the morning"

Getting involved

Having previously won The European Entrepreneur of The Year Award, Power was presented with the Outstanding Contribution to MedTech Industry Award at the 2018 Irish Medtech Awards. He says this is very special as this is a recognition from his industry sector peers.

"We never set out to win any award. We just tried to do the right thing and build a company the right way. My ambition is to keep building a great Irish company in Galway and being the very best at what we do."

Power knows how beneficial the Association can be as he was a long-time board member. He says he's proud of the work they do for individual companies and for the wider medtech sector.

"The Irish Medtech Association has always recognised indigenous companies like us, which shows tremendous support to the local community and is a boost to the Irish medtech environment. Ireland is currently number four in terms of medtech exports globally and the number one location for medtech companies. There is such a large involvement of great people from both the multinational and indigenous sector who have pushed Ireland to this achievement."

Power says the Association advocates for companies in Europe and provides help to those who ask. They are very beneficial to the industry as a whole.

"I have been with the Association for many years, working along with other leaders in our business community. Getting involved with them has been an immensely enjoyable and rewarding experience. The current president and vice-president are, for the first time, both from indigenous companies. This, I believe, reflects the growth of businesses native to Ireland and the difference they are making at a national and international level within the medtech sector."

Ciara Power, Aine Power, Bernadette Power, John Power, Mairead Power, and Fiona Power

Changing it up

Merit Medical were announced Medtech Company of the Year at the Irish Medtech Awards 2018. Here Mark Butler, Vice President of European Operations at Merit Medical, speaks about the achievement and how the multinational business is taking a different approach to medical device manufacturing

Merit Medical VP of European Operations Mark Butler

"Merit Medical started from very humble beginnings," says Mark Butler. "Founded by Fred Lampropoulos in Utah, in 1987, the Merit story began with a single idea: build a stronger and safer disposable syringe. From that single idea, the next great healthcare company was born.

"Merit Medical Ireland, a subsidiary of Merit Medial Systems Inc (MMSI), started as a 22-person single-site building in Castlerea, Co Roscommon specialising in the manufacture of single-use inflation devices and Hemostasis devices.

25 years later in 2018, Merit European Operations is now headquartered in two facilities in Galway in Ireland with an additional two sites in France and the Netherlands. Merit Galway grew in reputation within the corporate domain regarding skilled competencies and knowledge on the design and manufacture of cardiology and peripheral based access devices, navigation systems and procedural kits.

"We have grown rapidly over the last five years and now employ almost 1,000 employees," says Butler.

"Our R&D division currently has an Advanced Technologies and Development Engineering Departments, with many active programs some of which are in collaboration with research bodies based in Irish universities."

"We are seeing a year-on-year growth of about 25pc," says Butler. "We have expanded from a medium-small sized company to one of the largest in the region. Merit Medical has a loyal customer following, primarily from the reputation that Merit are willing to satisfy customer requests. Merit are willing to make the extra tweak or redesign to a standard product to suit individual customer needs and customers appreciate that."

Sustaining growth

When asked how Merit Medical Ireland sustains growth in a competitive industry, Butler says it's about standing out in the medtech crowd.

"Along with heading up the European operations and R&D, I have a seat at the business development and mergers and acquisitions (M&A) decision-making table at a corporate level. We manage a large amount of incentivised start-up companies at various stages of their life cycle, which we feed back into the division that looks after all of Merit's corporate distribution deals.

"It's about creating opportunities for smaller businesses in medtech. As a very family orientated company, we are focused on people development and providing a platform on which to perform and be creative.

"This is a relatively new approach for us, but we are very active in that network of start-up companies and investing in those that may need help with commercialising a product. Recently, we acquired a women's health company called Cianna Medical, investing in technologies to help improve diagnosis of breast tumours."

Future is bright

Alongside start-up companies, Butler says they are also active with supporting colleges and young people who might one day have a career in the industry.

"Last year, Merit Medical gifted €250,000 to NUI Galway Youth Academy, an outreach programme for 9-12-year-olds, offering them a taste of STEM-related studies. This was in response to a community need, creating opportunities for children from disadvantaged backgrounds to attend university and increasing interest and enthusiasm in STEM subjects from an early age.

"It is terrific to be involved in something that is very helpful to the community, but also to the industry. Hopefully, some of the young people involved will go on to have an interest in medical devices and take on a career that we believe is a very noble one," says Butler.

Merit Medical has shown they go above and beyond in all aspects of the company. This is not just with providing support for their team and those up-and-coming innovators, but also in ensuring that their products are supporting their customers and their needs.

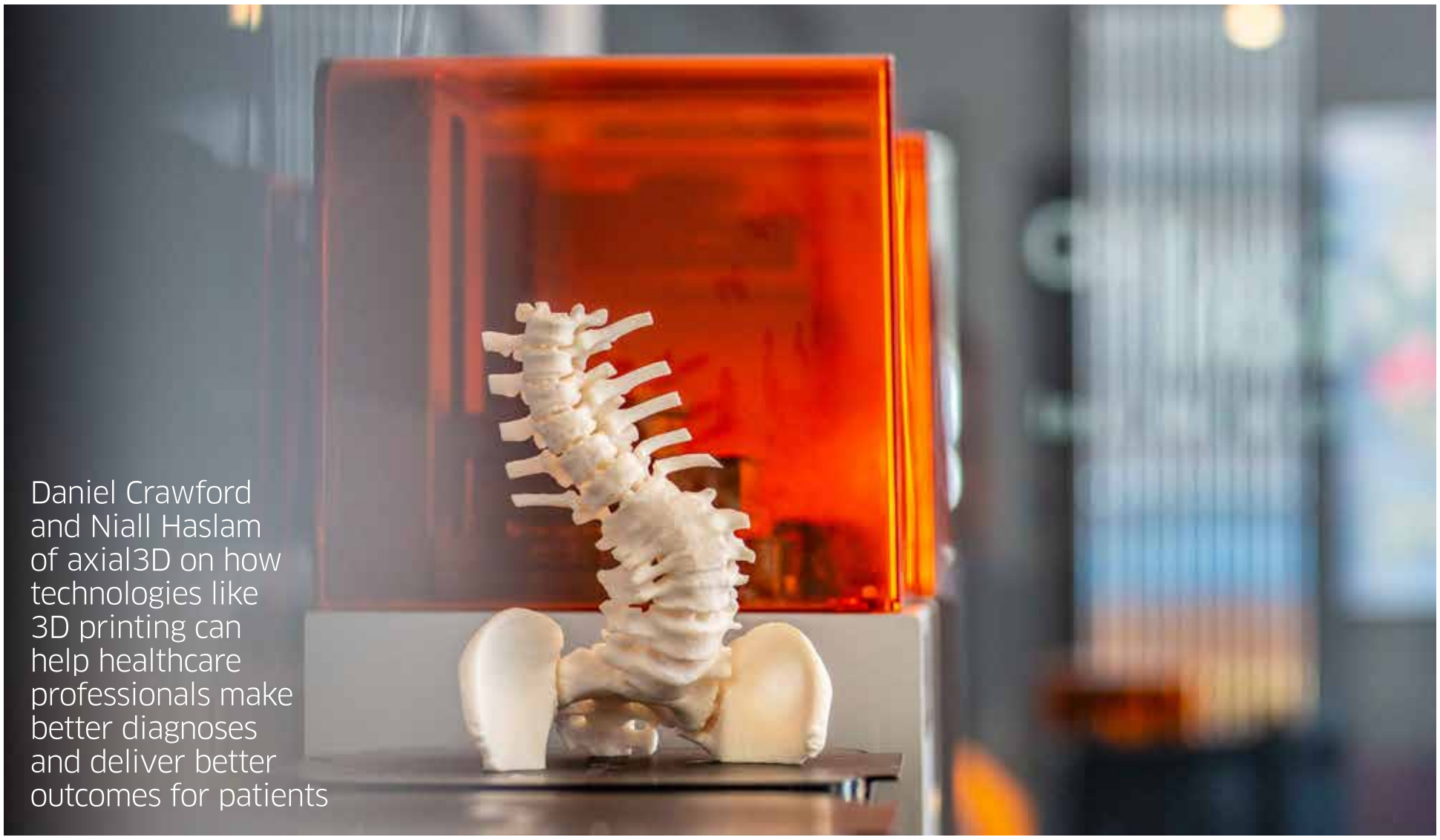
"For a company of our size, we punch well above our weight in terms of the breadth of sales force that we have internationally, whether that is direct salespeople working for Merit in the States, across Europe or Asia," says Butler. "We listen carefully to the clinician and can customise packs to meet particular hospital needs."

In fact, the Galway facility produced over 15 million devices last year, which have improved the lives of nine million patients around the world – it's no surprise that they were named Company of the Year at the Irish Medtech Awards 2018.

"It was our first-ever submission to the awards and we very nearly didn't enter, as we thought we weren't ready," says Butler. "But we charted out what we had achieved and decided, why not? We were surprised and delighted when we heard on the night that we had been successful!

"We are proud to be recognised by the industry, amongst so many great medtech companies throughout Ireland. It's a very competitive market at the moment. We are not trying to be the biggest, but we feel that the award has brought us a lot of traction on our business development side and people understand Merit's brand more.

"We strive to deliver cutting-edge medical devices, but we will also continue to empower our employees and those who will be the future of the industry."



Daniel Crawford and Niall Haslam of axial3D on how technologies like 3D printing can help healthcare professionals make better diagnoses and deliver better outcomes for patients

Putting an imprint on healthcare!

3D printing is revolutionising healthcare and Northern Ireland company, axial3D, is at the forefront of this innovation.

"My academic background is in biomedical engineering, specialising in medical visualisation, human anatomy and the use of 3D printing in medicine," says Founder and CEO Daniel Crawford.

"The use of 3D printing in medicine (creating physical objects from a digital file by adding multiple layers or materials to build a single structure) has been publicised since the early 1990s. However, the light bulb moment for starting the company happened when I took a CT scan of a patient who was in a motorcycle accident, and converted around 300 2D images into one physical 3D printed model.

"The surgeon looking after the patient discovered an additional pathology that he had not seen on 2D images. That was the moment I knew I had a viable innovation that could potentially be used in hospitals."

Seeing growth

Crawford started the company in 2015 with a group of engineers, received start-up funding, and has been growing the service ever since. Today, axial3D works with hundreds of surgeons across hospitals in the UK and Ireland, providing precise 3D printed models generated directly from patient CT and MRI scan data.

Niall Haslam, Chief Technology Officer of axial3D, leads in developing the software for augmenting and automating the production of 3D printable models of human anatomy using medical images.

He says, "To produce our models, we take 2D images of slices of the anatomy to build up a 3D model. This process involves annotating the images to denote bone versus muscle versus organ. For the business to scale, we have developed a machine-learning process to automate the process of producing the 3D models much quicker for surgeons."

axial3D Chief Technology Officer Niall Haslam

The technology engineered by axial3D has been shown to reduce time in theatre at hospitals and improve diagnosis.

"More often than not, patient diagnosis via 2D images on 2D screens can be very difficult for surgeons," says Haslam. "It's hard to get a conceptual understanding of what's happening in a patient's body because the surgeon is trying to envision hundreds of 2D images from one specific anatomy in their mind. Having one physical representation facilitates a better understanding of abnormalities."

Crawford adds, "But that's not all. We have found one of the most powerful things about the 3D printed models, is that they provide consensus in surgery teams. The 3D print solidifies everybody's understanding of what is specifically wrong with the patient.

"The medical 3D printed models are reducing time in theatres by improving diagnosis and improving the knowledge of what equipment surgeons are going to bring in to treat that patient. It's making huge cost savings for the healthcare provider, and also means the patients are less stressed because they know exactly what is going on."

Recognition

The state-of-the-art technology has seen axial3D achieve considerable success in its short history, and this was recognised at last year's Irish Medtech Awards.

"We're extremely proud to have won the prestigious award of Emerging Medtech Company of the Year," says Crawford. "There are some really world-class people working in medtech in Ireland, so having our work recognised at the Irish Medtech Awards 2018 is a real validation of the work that we have done in terms of developing the service and product.

"The award highlights the importance of our mission to improve the quality of care hospitals can provide, by enhancing existing practices and giving their clinicians easy access to patient-specific 3D printed models."

axial3D have a vision to make 3D printing a part of mainstream medical practice. However, Crawford says there is still a way to go before all hospitals adopt the technology.

"There is an element of education that needs to happen. There is evidence that shows that a physical representation of these traditional radiography images does provide benefits to patient care. I do think that it will still take a year or two to get public healthcare systems in particular to adopt the technology, but it is definitely on an upward trajectory."

Haslam adds, "It really is cutting edge in terms of the technology we are using. It's printing, but it's about using machine learning to drive the creation of the 3D printing. It is an exciting industry to be in at the moment, as the medtech space in Ireland is very strong. We are going to be growing rapidly and we will need access to talent. I think Ireland is the place to find that, because there is access to good talent and experience here, and an ambition to do things on a global level."

Creating collaboration between health and business

Dr Tanya Mulcahy, National Manager at Health Innovation Hub Ireland, speaks about the benefits of driving innovation between the health service and enterprise

"Those within the medtech space, know the unique challenge of launching a product into the industry," says Dr Tanya Mulcahy. "The idea may be ground-breaking, but the growth and success of medtech devices lies in the hands of technologists, engineers and healthcare professionals to collaborate."

Health Innovation Hub Ireland (HIHI) – established in 2016 by the Department of Business, Enterprise and Innovation and the Department of Health, with the support of Enterprise Ireland and the Health Service Executive (HSE) – drives collaboration between the health service and enterprise. The hub, which has staff in Cork, Dublin and Galway, does this by linking clinicians to businesses who want to test-drive their products in Irish healthcare settings.

"The reasons HIHI was set up were: to help Irish companies that have innovative healthcare technologies and solutions, to access the Irish healthcare system; and to identify problems within the healthcare system which could be addressed by those solutions," explains Mulcahy.

"When a company sees a market need and develops a product in a lab, office or their garage, it can be hard to know who to contact in the health service. Once we review the product through a vetting process and decide it's worth pursuing, we will then contact clinicians, manage pilot projects and report on the future viability of the product.

"Based on clinical feedback, businesses can refine and optimise their products or services, to ensure they can offer the solutions which the healthcare system needs."

Embracing innovation

There are three main pillars of activity HIHI focuses on: 1. Helping companies access the healthcare system, by running pilot-testing of new devices; 2. Working with entrepreneurs in healthcare to bring their idea to production and; 3. Providing education programmes to those who work in the healthcare system, such as their recently launched Diploma in Healthcare Innovation at Trinity College Dublin.

"If we want to create change in the healthcare system, providing education to healthcare professionals so they embrace innovation within the Irish system, is vital," says Mulcahy.

"We also provide roadshows and workshops at hospitals. The overall aim of our education programmes is to empower problem-solvers and convert thinking into action."

It is this determination to facilitate innovation which saw HIHI receive the award for Academic Contribution to Medtech at the Irish Medtech Awards last year.

"What makes us unique is the fact that we are based in academic institutions which are tied into hospital groups within the country, so we bring together the ABC at once: academia, business and clinician.

"We were very proud to have won the Irish Medtech Award. It is recognition that we are providing benefits to the medtech industry in Ireland today.

"For companies, connecting them with the right opinion leaders and clinical location brings the benefits of increasing their chances of developing commercial ideas and creating jobs. Meanwhile, the healthcare service has access to innovative companies who can provide solutions to issues they are facing, making it cheaper and easier to deliver better healthcare to more patients."

Health Innovation Hub National Manager Tanya Mulcahy

Success stories

Tanya says there have been many successes involving HIHI's support with bringing Irish devices to market, both at home and abroad. These include:

> The overall aim of our education programmes is to empower problem-solvers and convert thinking into action

an online tool for GPs to monitor the physical activity of patients via a smartphone or wearable devices, scheduling services to improve patient flow, and infection control and hygiene management systems.

"One of the most recent start-up companies we are working with includes SymPhysis Medical. SymPhysis Medical are developing a new medical device for treating recurrent pleural effusions in late-stage cancer patients, and we have identified a number of professionals willing to engage with the company.

"There are also more and more female health devices being developed today. We are currently supporting a device which helps women, who have just had babies, to deal with the issues that they experience with postpartum health.

"Female medtech products is an area which hasn't been addressed previously, but there is more support for women innovators today and a lot more focus on issues that are related to women. That means more medtech products are coming out in that space, which is really great to see."

Outside of the hospital setting, HIHI are also supporting community care and innovative medtech devices that focus on allowing the care of older persons at home.

"For example, through HIHI, Independent Living Ireland Limited, Friendly Call Cork and Cork County Council are running a pilot, based in Mitchelstown, using technology to enable a community to provide care and support for older or vulnerable people in their community. Then, there's Carefolk, a platform allowing caring professionals and family caregivers to manage patients at home from their tablet. Everyone knows how the patient is doing at any one time and it saves time for staff involved in travelling to houses."

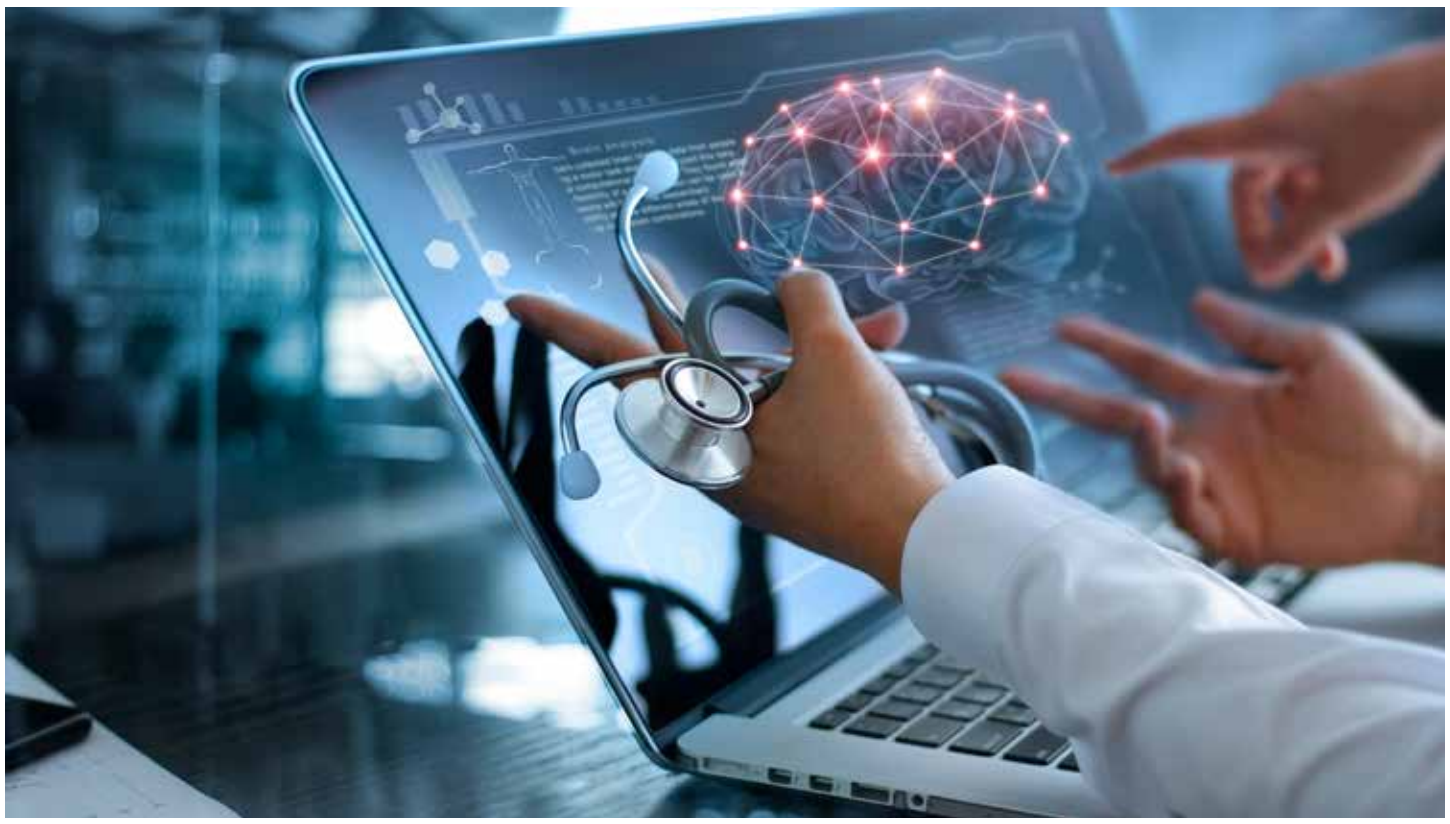
Mulcahy says that while each device serves a different purpose, one thing they have in common, is they are making processes more efficient.

"It's about providing that ease of mind. When clinicians are busy, with the proper device, they feel everything is being managed properly. As a result, they feel more empowered in their roles. Plus, the patient has a good handle on what's going on!

"Collaboration with enterprise can benefit patient care, patient pathways and outcomes."

Innovation in **medtech**

We speak to Kieran Daly from HealthBeacon about new groundbreaking treatment options and what it feels like to make an international impact



"It is just incredible to have won the eHealth Innovation of the Year Award at the Irish Medtech Awards 2018," says Kieran Daly, CTO and Co-Founder of HealthBeacon. "We are an Irish firm with Irish roots with an international outlook, so getting an award from this group, who are so focused on the industry, has been a big boost to us. The fact that it came from our peers has given us great confidence."

HealthBeacon, a leading medication adherence technology company, won the award for developing an injectable medication management system. Set up over five years ago by Daly and Co-Founder Jim Joyce, HealthBeacon integrates ICT into the world of healthcare.

"I have worked in technology and hardware in both the tech and healthcare sectors for over 20 years," says Daly. "Jim was running an organisation offering patients support. This involved nurses going to the homes of patients who needed injectable medication and trained them on how to use their injections. These types of patients have sharps bins where they can dispose of their syringes safely.

"Jim had an idea that the sharps bin could provide some insight and understanding of patients' medication adherence. So, in our HealthBeacon smart sharps bin, it captures the moment of disposal, time stamps it, gives the adherence score and date of next injection on the screen on the top of the bin. We are very proud of this innovation, as it is having a measurable impact on medication adherence of patients."

Medication adherence

The HealthBeacon smart sharps bin is digitally connected to the cloud via an integrated SIM card and can provide prompts for patients to stay on track with their injections. Daly says that, on average 50pc of patients are not adhering to their medication which is a huge problem for patients themselves, doctors and even drug companies. But HealthBeacon has brought up the numbers significantly.

"If a standard medication programme is running at 60pc adherence, HealthBeacon has demonstrated double digit improvement across a variety of conditions. With the HealthBeacon smart sharps bin, patients don't need to do anything different than they do with a normal sharps bin. It helps them do less, not more."

Daly says the patient can see their own adherence score and this can empower them to take control of the management of their regiment. It makes the consultation with their physician much more honest with no overestimations, and they get the best treatment possible.

"An illness like rheumatoid arthritis could have put someone out of the workforce 15 years ago," says Daly. "But now, with new medication taken in the home, people can manage these conditions themselves and lead fuller lives. The primary person who benefits is the patient themselves, as smart-connected devices ensure better adherence to medication."

HealthBeacon Quality Manager Joyce Power with Chief Technology Officer and Co-Founder Kieran Daly

Cutting edge healthcare

Daly has worked in technology in the healthcare sector for many years. He says that innovation in medtech can help not only patients, but the healthcare professionals taking care of them.

"One of the big challenges for doctors is that they are in the dark about whether their patient is actually taking their medication. They must accept what they are told at face value by their patient.

Doctors can see if their patient is taking the right dose at the right time and if it's not working, they know they are making the right decision to move them onto another prescription.

"In many cases, changing treatments is made with incomplete information, so clinicians need real-world data to drive their interventions," says Daly.

Helping doctors in their diagnoses is incredibly important, but it can also help keep costs down for the health system. In the US, current estimated costs to manage medication non-adherence are estimated to be $290bn, and it is a similar costly practice in Ireland.

"Medications can only work if a patient takes them. Payors as well as drug companies want patients to have a good outcome which delivers value and cost savings. With better adherence in these new treatment options, there can be a reduction in unneeded medication switches and a reduction in the acute hospital population as patients are taking better care of themselves and sticking to their medication times. Anything that can stop a patient going to hospital will always save costs."

HealthBeacon has made an international impact, with their innovations operating across 13 markets and reaching patients across the world. They have also just closed their fundraising in January where they raised €12 million, which Daly says is a signal of their ambition and market endorsement.

"I feel like we're only getting started," says Daly. "There is so much more work to be done with expanding the team, the geography and having a strong R&D and development pipeline in place to bring next generation products to market. We think we will be around for a long time and will impact hundreds of thousands of more lives."

Driving innovation in medtech manufacturing

Sean Moran, VP of Operations for Sanmina Ireland, discusses how the company has become a technology leader and why the medtech sector is growing in Ireland

Sanmina Ireland is celebrating its 30th year of manufacturing operations in Fermoy, County Cork this year. Headquartered in Silicon Valley, California, Sanmina expanded its operations to Ireland in 1989 and has since become a technology leader and global supplier of complex medical systems in the region.

"Ireland is recognised as an established global hub in the medical technology space," said Sean Moran, VP of Operations and Plant Manager for Sanmina Ireland in Fermoy. "Most of the major players in the industry have a presence in Ireland, with nine out of the top 10 global medtech companies having operations in the region."

Sanmina Ireland has become such an established technology leader in Ireland that it won the Partner/Supplier of the Year, 2018 Award at the Irish Medtech Awards 2018, held last December in Cork.

"The Irish Medtech Association plays a key role in Ireland. They've built up an ecosystem in the country that supports a wide range of medtech companies, all the way from major brands, to those just starting up operations," said Moran. "We're delighted to have been recognised with an award that is so well-respected by our industry peers all over the world. It reflects the commitment that our team provides every day to our medical clients and their patients, using the highest level of quality standards."

Over the past 30 years that Sanmina has been based in Fermoy, Ireland has become a leader in medical device manufacturing, providing more than 38,000 jobs and annual exports of €12.6 billion to more than 100 countries worldwide.

"It was a simple decision to set up operations in Ireland," said Moran. "Sanmina serves customers across Europe, Ireland and the UK. Setting up a base in Ireland gave us easy access to the right skills and talent required for medical device manufacturing. In addition, our customers already had operations in Ireland, so it enabled us to become a valuable part of the local supply chain."

Moran says there is a well-established ecosystem in Ireland for the medtech industry that supports large scale manufacturing and the development of innovative medical products.

"The medtech industry has become a key pillar in Ireland's economy, with enormous investments in the development of staff and medical research. This is helping companies not only stay at the forefront of current technology, but also to develop innovative medtech solutions for the future."

Advanced automated medical technology manufacturing

Over the years, Sanmina has evolved to become a technology leader in the medtech space. Sanmina collaborates with major medical device and healthcare companies to produce some of the most advanced medical devices in the world on high-volume, automated production equipment.

The company designs and manufactures a broad range of medical technology and devices, ranging from blood and molecular diagnostics, to patient monitoring equipment.

"We've built up a highly experienced team and operations in Fermoy to successfully address and navigate the global medical regulatory environment," adds Moran. "We've also made major scientific investments and created ISO Class 8 clean room facilities. In addition, we leverage highly automated manufacturing and have also developed services such as an onsite microbiology lab. These types of capabilities weren't available here 20 years ago. We're constantly adapting and driving innovation."

After investing heavily in its Fermoy site and providing technical and professional development to staff, Moran says Sanmina continues to focus on providing customers with manufacturing solutions for highly complex medical products and systems.

"Irish medtech is the envy of many areas internationally. There is a cluster of complementary industries, supply chain activity and manufacturing companies that support each other. We should all be proud of this collaborative ecosystem and the positive impact it has on patients' lives every day. As our company tagline indicates, 'what we make, makes a difference'.

"Moving forward, we're planning to build on our growth over the past number of years and develop further opportunities with new and existing customers. Sanmina Fermoy is a critical player in the global Sanmina network, and we are committed to providing solutions that enhance life for millions of patients around the world."

> We've built up a highly experienced team and operations in Fermoy to successfully address and navigate the global medical regulatory environment

Sanmina Ireland Head of Engineering Damian Collins; Sanmina Ireland Business Development Manager Michael Murphy; Sanmina Ireland VP & Fermoy Plant Manager Seán Moran; Sanmina Ireland Head of HR Maria Quirke; Sanmina Ireland Director of Operation Michael Mulvihill; and Sanmina Ireland Technical Project Manager PJ Lonergan

Promoting the future

Bill Doherty, Managing Director for Cook Medical which won Best European Medtech Week Campaign, highlights the role medtech plays in society and why Ireland is the perfect base

"We were absolutely delighted to win the award for European Medtech Week Campaign," says Bill Doherty, Managing Director for Cook Medical. "We are fully committed to highlighting the medtech industry throughout Europe."

The award is based on the annual European Medtech Week, which aims to improve awareness and understanding of medtech across Europe. Doherty says the US-headquartered Cook Medical, specialising in developing hundreds of medical products, ranging from vascular to urology, endoscopy and other minimally invasive surgery, is dedicated to creating greater awareness of the sector.

"Showcasing innovative products can inspire future innovations and future generations," says Doherty. "When we take part in events like European Medtech Week or Engineers Week, we try to spread the message about what medtech is, the types of products we make and how they make a difference to patients all over the world.

"Last year, we had an event in Limerick where we invited local representatives to see our products. We showcased the impact of medical technology on patients and the economic impact of having Cook Medical and other similar companies in the community. We help save lives with our products, so I think that's important to promote."

Doherty says the medtech sector has transformed Limerick and the entire region's economic prospects. However, there's still a misunderstanding of what medtech is, as it covers everything from contact lenses to ECG machines. Bringing more understanding of the industry can create more appreciation and can inspire young people to get involved themselves.

"It is important to get younger kids involved and to help their parents understand the importance and scope of the industry," says Doherty. "Curiosity in science is created in primary school, so if children are not exposed to it at that time, they may not have an interest in it later on. We want to encourage children to continue their science education in school and stimulate that interest early. This is vital with girls in particular. We are seeing more and more female engineers qualifying, but definitely not enough. We want to let young boys and girls know that there are a lot of jobs in the sector and exciting career routes."

But promoting medtech is not just about getting people involved in the industry. It's also about promoting health and wellbeing to the general public. Cook Medical sponsors activities around Limerick to support health and exercise such as the annual Limerick Women's Mini Marathon.

"We see these types of sponsorships as a way of promoting a healthy lifestyle. Exercise can help people counteract problems with diabetes and other illnesses, as well as obesity. We have a great understanding of the impact of diseases, and while we want to continue to help in the treatment of these diseases, we would also like to promote the message of healthy living in order to avoid these kinds of problems. Prevention is always better than a cure."

Cook Medical Europe Corporate Communications Project Manager Grace O'Sullivan; Cook Medical Europe Corporate Communications and Content Specialist Deirdre Hussey; Cook Medical Europe Managing Director Bill Doherty; Cook Medical Europe Corporate Brand Marketing Senior Manager Clare Ellis; and Cook Medical Europe Visual Brand Specialist Tara Kelly

A global hub

Cook Medical sells products to 135 countries and employs over 12,000 people globally, with 850 of those in their Irish base in Limerick. They are indicative of a global trend of medtech companies investing in Ireland.

"Ireland is a great place for medtech," says Doherty. "The workforce here is incredible, as they are highly educated, have the skills required for the job and are willing to solve problems to make things happen. The medtech sector in Ireland has developed over the last 40 years from basic manufacturing, to become a fully integrated sector including complex manufacturing capabilities and significant R&D. It has earned a reputation as an international hub for medical devices."

The Irish Medtech Association has played an important role in the development of the sector in Ireland according to Doherty. He says it has helped to develop the industry in Ireland by acting as the catalyst whereby best practice is shared across the industry and companies are encouraged and supported to take on new opportunities. It also ensures that the industry's voice is heard at national and EU level.

"It is a very active association – it's very hands-on. One example of the association's support is when we had skill shortages in regulatory affairs, the association organised courses using Skillnet funding to develop RA specialists. They also organise training in product design, quality assurance and management development."

Ireland now has 38,000 people employed in the medtech industry, which has been valued at €12.6bn a year to the Irish economy in exports.

"There is a great ecosystem for the sector in Ireland, which is why so many companies invest here. There are R&D capabilities; we have a significant supplier base here and over the last 20 years, we have seen a significant number of Irish indigenous companies starting up alongside the global companies. We have an international footprint now and I see that continuing to get even stronger in the future."