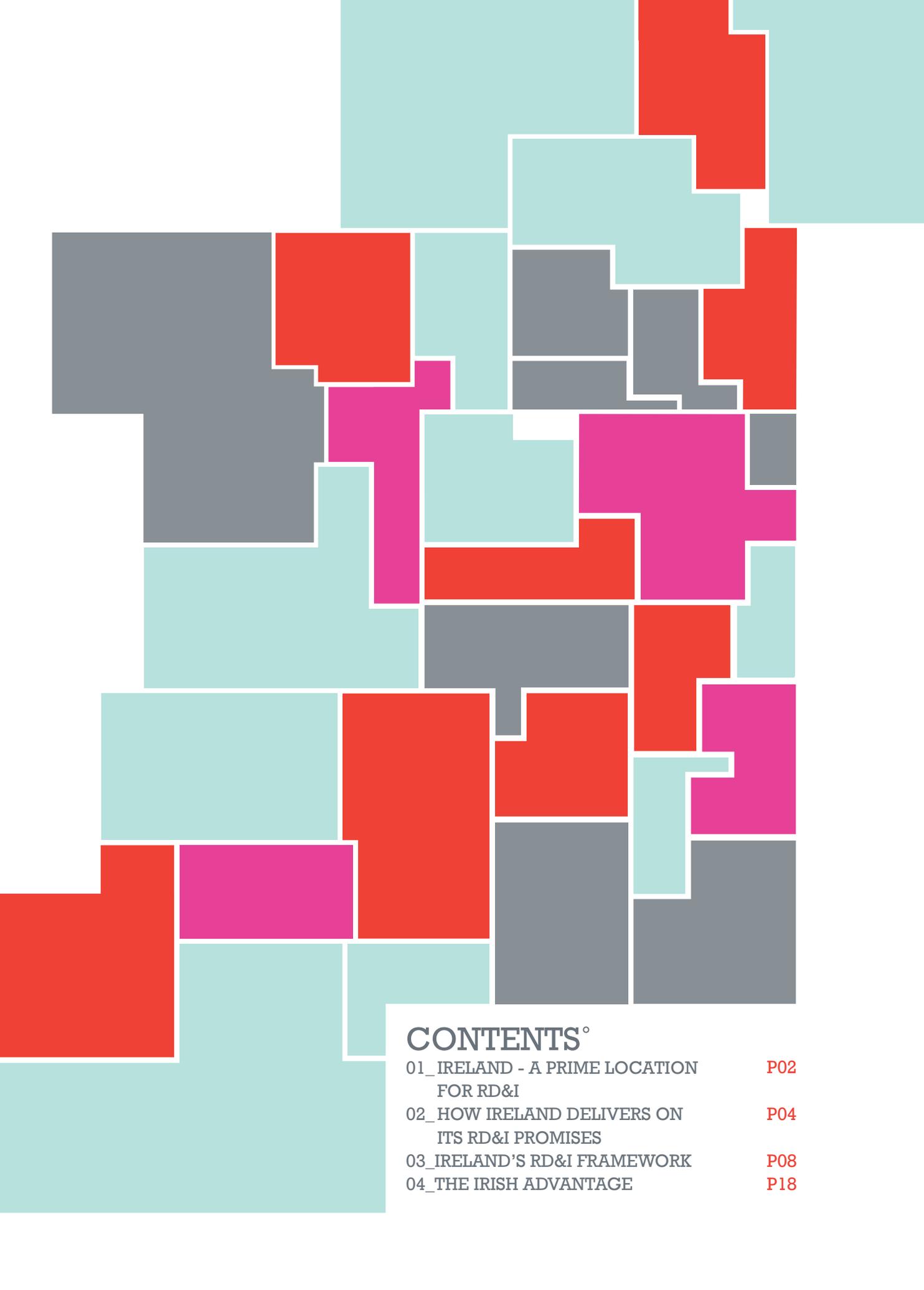




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IRELAND°

A WINNING PROPOSITION FOR
RESEARCH, DEVELOPMENT &
INNOVATION



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01_IRELAND – A PRIME LOCATION FOR RD&I

In every area of the contemporary business world, progressive companies face an ever-increasing demand to innovate. This drive for advancement is one of the main catalysts for the internationalisation of Research, Development and Innovation (RD&I).

Ireland is now considered one of the leading RD&I locations in the world. Ireland has the capacity to meet the needs of RD&I investors and offers the ideal commercial, political and social environment in which to carry out successful and profitable RD&I activities.

The Irish Government is focused on driving economic growth by encouraging further RD&I activities. Its strategic objectives are backed with positive action through an unprecedented investment of €8.2 billion under the Government's strategy for Science Technology and Innovation. This funding is already building a world class research system. The science strategy is also ensuring that all elements are working in unison for the benefit of industry. It is the "Smart Economy" made real.

Today's Ireland offers a strong, growing RD&I environment - complemented by a robust Intellectual Property (IP) regime; a young skilled and well-educated workforce with strong technological and business skills; and a low corporation tax.

The Drivers of Global RD&I

- › Access to the best talent, research and technology
- › Convergence between previously separate industries
- › The rate of continuous innovation required to keep pace with new business models
- › Research "hotspots" and "networks" that support and encourage RD&I

+ IRELAND: YOU ARE IN GOOD COMPANY



What Ireland Offers

- › A pro-business environment with a 12.5% corporate tax rate
- › A long-established track record of working with multinational corporations (MNCs)
- › Strong Intellectual Property protection
- › Well-established collaboration between a world-class academic sector and industry
- › A highly-skilled workforce with strong managerial and communication abilities
- › Support and access to Government funding and RD&I networks through IDA Ireland and Science Foundation Ireland
- › Excellent business infrastructure and Information and Communications Technology (ICT)

02_HOW IRELAND DELIVERS ON ITS RD&I PROMISES

Collaborative Research Environment

A unique feature of the Irish business environment is the productive collaboration between industry, academia and government agencies. All stakeholders work together, building a national team to consolidate Ireland’s position as a knowledge-based economy and as a primary location for RD&I.

Ireland’s RD&I Landscape



+ _WORKING WITH YOU AND OTHERS

IDA Ireland plays a leading role in RD&I development by providing funding support to suitable projects, and by identifying other supports available from partner organisations such as Enterprise Ireland, Science Foundation Ireland, and Sustainable Energy Ireland.

In addition to RD&I funding, IDA Ireland has a number of direct support mechanisms, including employment and training grants. Through its property portfolio, IDA also has a suite of property offerings for companies.

IDA Ireland works closely with companies to ensure they have the facilities, resources and support they need to establish and expand their RD&I operations. IDA helps ensure these progressive companies continue to flourish here as key drivers of Ireland's future economic success.

A Comprehensive Range of RD&I Programmes

- › IDA Ireland's RD&I Programme, and Feasibility and Training Support
- › Enterprise Ireland's Innovation Partnerships Initiative
- › IDA Ireland/Enterprise Ireland Competence Centres
- › SFI Centres for Science, Engineering and Technology (CSET) Programme
- › EU 7th Framework Programme for Research and Technological Development (FP7)

+ _EXAMPLES OF RD&I PROGRAMMES

> **Centres for Science, Engineering and Technology (CSET's)**

These centres are funded by Science Foundation Ireland and are formed by clusters of internationally competitive researchers from the third-level sector and industry. Their purpose is to exploit and develop opportunities in science, engineering and technology; in particular research that underpins developments in Biotechnology, ICT and Renewable Energy sectors.

A notable example is the Centre for Research on Adaptive Nanostructures & Nanodevices (CRANN), located at Trinity College Dublin. The aim of CRANN is to deliver world class research and innovation in nanoscience and nanotechnology which will address key industry challenges. CRANN is a critical component of an integrated national strategy to transition Ireland to a knowledge economy. CRANN's industrial partners include Intel and H.P, with both companies having researchers-in-residence in the CRANN facility.

> **RD&I Competence Centres**

These are collaborative entities established and led by industry. They are resourced by highly-qualified researchers associated with research institutions who undertake market focused strategic RD&I for the benefit of industry.

An RD&I Competence Centre is formed when a group of companies come together to define their common research interest. The group then submits an expression of interest to IDA Ireland or Enterprise Ireland outlining areas of common interest, market presence and the strategic impact of a competence centre on their business model. Expressions of interest that show highest potential impact will be selected to progress for government funding. Participating companies must be open to working with likeminded companies and prepared to collaborate with research performers. Multinational companies that have participated to date include Medtronic, Intel, Xilinx, Seagate, Analog Devices, DePuy and Bombardier Aerospace.

> **The National Institute for Biotechnology Research and Training (NIBRT)**

NIBRT is an IDA-supported collaboration between four leading Irish academic institutions. Its purpose is to deliver state-of-the-art training/learning facilities and research solutions for the advancement of the BioPharma sector in Ireland.

+_OTHER ELEMENTS INFLUENCING RD&I IN IRELAND

Irish enterprise policy is focused on creating a smart economy for Ireland; an economy which has at its core an exemplary research, innovation and commercialisation ecosystem.

Key Elements of IDA Ireland's RD&I Strategy

- › Leveraging recent investment by the Irish Government in RD&I to support, develop and encourage multinational corporations (MNCs) to undertake RD&I in Ireland
- › Fostering an environment of collaboration between government, academia and MNCs
- › Ensuring RD&I policies are business friendly and attractive to MNCs
- › Promoting Ireland as a location for carrying out world-class RD&I

03_IRELAND'S RD&I FRAMEWORK

Ireland offers a world-class research development and innovation (RD&I) model that delivers success for global companies like AON, Intel, PayPal and Boston Scientific. The following sections explain how Ireland recognises the optimum conditions needed for these companies to flourish in the global RD&I environment.

Key Elements of Ireland's RD&I Success

- › A strong commitment and focus by the Irish Government to RD&I
- › Irish legislation provides MNCs with incentives to generate qualifying patents – up to €5 million annual qualifying income can be exempt from Irish tax
- › R&D tax credit – designed to encourage companies to undertake new or additional R&D activity in Ireland. The tax credit covers wages, plant/machinery, buildings and related overheads of establishing an RD&I activity in Ireland
- › A tax rate of 12.5% applies to all corporate trading profits
- › Clusters of global leaders in key high tech industries including Pharmaceuticals, Medical Devices, Biotechnology, ICT and Financial Services

+_FOUR MODELS FOR RD&I

THE STANDALONE MODEL

In this model, a company establishes a dedicated centre to support either corporate research or an innovation agenda through a standalone facility in Ireland.



THE COLLABORATIVE MODEL

The Collaborative Model describes an RD&I investment that is co-dependent on a substantial collaborative engagement with an Irish or international academic institution – and/or with a MNC or indigenous Irish company. You could call it a meeting of minds and cross-discipline brainpower.



DEVELOPMENT & MANUFACTURING/ SERVICE DELIVERY MODEL

This refers to RD&I done at a manufacturing or service delivery site that improves the manufacturing or service delivery process to achieve greater productivity, efficiency and quality of the operation or service.

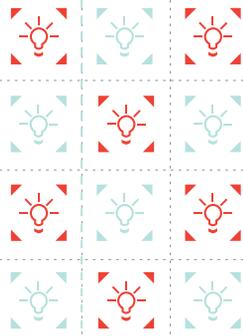


THE DEVELOPMENT & COMMERCIALISATION MODEL

The Development & Commercialisation Model relates to instances of RD&I investments where the outputs will be developed and produced in Ireland for export markets.



*THE STANDALONE MODEL



Standalone Success in RD&I

Ireland has proven itself a successful location for companies wishing to establish standalone RD&I. As part of their overall RD&I strategy and complimented by the skillsets of Irish researchers, a wide range of global companies have successfully managed to capture first-mover advantage in innovation, product development and design by setting up RD&I Centres of Excellence in Ireland.



+ Cisco

A worldwide leader in networking and collaboration products and services, Cisco invested in a dedicated site for 250 research and development staff in Galway City. From the outset, the Galway initiative has established a global leadership mandate in Cisco's Unified Communications and Collaboration (UCC) portfolio. Research conducted here is at the very heart of Cisco's strategy in empowering 'The Human Network'. The project has established strong research partnerships and linkages with the Science Foundation Ireland (SFI) funded CSET at the Digital Enterprise Research Institute (DERI) in University College Galway, and with the Telecommunications Software & Systems Group (TSSG) in Waterford Institute of Technology (WIT). The Galway facility is also host to a European UCC customer briefing centre enabled by Cisco's TelePresence video technology.

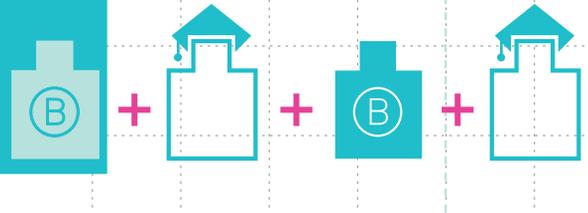
+ AON

In financial services, product and process innovation is now a core activity in driving the strategic importance of the Irish operations. AON - providers of risk management services, insurance and reinsurance brokerage - created an industry-first when choosing Dublin as the location for a Global Centre of Excellence. The Centre will systematically aggregate information from around the world using sophisticated mathematical and analytical techniques, which Aon will translate into real-time insights and innovative insurance products and risk solutions tailored to clients needs. This Centre of Excellence provides advanced research and development technology, enabling the firm to drive product, process and business model innovation across several disciplines.

+ Helsinn

Helsinn, a privately owned pharmaceutical company, has established a Centre of Excellence in Research and Development for Oral Solid Dosage (OSD) at its Dublin facility, Helsinn Birex Pharmaceuticals. Helsinn's core business is the in-licensing of late stage pharmaceutical compounds in therapeutic niche areas for development and subsequent commercial manufacture and distribution. The company is primarily active in oncology supportive care, anti-inflammatory and gastrointestinal treatments. The investment is part of Helsinn's strategic decision to strengthen its in-house development capabilities. The Helsinn investment will establish the Irish operation as the centre of knowledge and learning for OSD products in the Helsinn Group, and the launch site for new products within its portfolio. This investment puts the Irish operation at the core of Helsinn's R&D activities.

*THE COLLABORATIVE MODEL



Ireland's Collaborative Business Culture

Collaboration between industry and third level institutions has become an important component of the Irish RD&I landscape. More and more companies are forming industry /academic alliances to share costs and avail of the unique skills available in research-performing academic institutions in Ireland.

CASE STUDIES



+ GlaxoSmithKline

GlaxoSmithKline (GSK) is one of the largest pharmaceutical companies in the world. In its Irish RD&I operations, GSK is developing a ground-breaking research project into gastrointestinal diseases, in collaboration with the Alimentary Pharmabiotic Centre (APC) in University College Cork. This project is jointly supported by IDA Ireland and Science Foundation Ireland (SFI). The company is also investing in a unique collaboration with the Trinity College Institute of Neuroscience (TCIN) and the National University of Ireland (NUI) Galway on a major Research & Development programme for the discovery of new therapies to treat Alzheimer's Disease.

+ Intel

The Irish campus is home to Intel's IT Innovation Centre which is involved in far-reaching research & development of applications including peer-to-peer networks, digital health, mobility solutions, education deployment technologies (including wireless & satellite) and e-learning architectures and platforms. The Irish operations have responsibility for the direct management and governance of Intel's innovation labs across Europe. Intel also has an operation in Shannon, Co Clare designing advanced microprocessors for use in embedded computing communications and storage markets. Intel recently announced the expansion of this operation involving industrial research in silicon design and validation and the development of a content processor module. Intel is collaborating in this area with the Centre for Research on Adaptive Nanostructures & Nanodevices (located at Trinity College Dublin), the Tyndall National Institute in Cork and the National University of Ireland in Maynooth.

+ Smith & Nephew

Smith & Nephew, the global medical technology company, and REMEDI, the Regenerative Medicine Institute at NUI Galway, established a four year R&D collaborative programme for the development of treatments for bone and joint diseases. The Smith & Nephew Research Centre in York, United Kingdom, is working in partnership with REMEDI to develop new therapies using adult bone marrow stem cells to promote the re-growth of healthy cartilage and the repair of damaged joints. REMEDI, recognised as Ireland's primary centre for stem cell and gene therapy research, was established as a Centre for Science, Engineering and Technology (CSET) in 2004 by Science Foundation Ireland. It has a core expertise in arthritis research and a particular emphasis on the translation of its research findings to the delivery of new therapies in orthopaedics, cardiovascular and neural diseases.



+ Stryker Instruments

Stryker Instruments, part of the Stryker Corporation, is known for a wide range of innovative operating room products - from surgical power tools to advanced systems for waste management, irrigation, personal protection and pain management. Established in 1998, Stryker's Cork plant has successfully developed a state-of-the-art research and development and manufacturing facility for minimally invasive surgical instruments. These products are used for cutting, drilling, burring and shaping of bone and soft tissue during orthopaedic, spine, ear, nose and throat plastic surgery. The R&D team in Cork is involved in both product and process development with sole responsibility for the development, pilot manufacturing, regulatory approval and commercial manufacture of disposable bone and soft tissue cutting instruments.

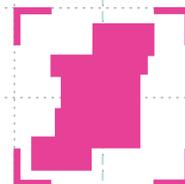
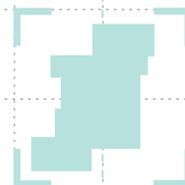
+ Merck

Merck established its first Irish operation in Co. Tipperary in 1976. The construction of a new 200,000 sq ft facility in Ireland when complete, will enable all the unit processes to manufacture final stage (Phase III) clinical trial solid dosage (tablets & capsules) for global clinical trials. The facility will be used to manufacture, market and launch quantities of newly approved drugs prior to their manufacture in long term supply sites. Significant parts of this operation will have a large R&D element involved in new process development including Process Analytical Technology and in-process measurement systems, tablet & capsule formulation development, and the development of new analytical methods for each new medicine.

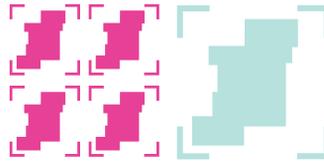
+ Paypal

Paypal, an eBay company, set up their European Operations Centre (EOC) in Dublin in 2003, serving markets in Italy, France, Germany, Spain, UK, Netherlands and Poland. Paypal Ireland now employs some 900 fulltime staff across its portfolio of activities such as European Customer Services, Risk & Fraud Management and Merchant Solutions. The company recently initiated a Customer Centre of Excellence which will see the EOC evolve into an operation with responsibility for developing Customer Service and Operational Excellence within the PayPal Group. The Centre of Excellence will be involved in re-engineering the end-to-end customer experience – working across European operations and with the company's European Business Units to define and implement innovative solutions in product, process, policy and technology; a significant upward move in relation to value added activities. PayPal's Centre of Excellence will be working with the Innovation Value Institute in the National University of Ireland at Maynooth.

*THE DEVELOPMENT AND COMMERCIALISATION MODEL



Commercialisation is the successful implementation of a novel idea into something of value to the marketplace. The successful commercialisation of new products or services in Ireland can lead to increased revenue, market share, and profitability. Ireland has a strong track record of companies developing and delivering new products and services to the market across a wide sectoral range.



+ Analog

The focus of Analog’s Irish operation is to produce quality precision products through precision manufacturing, while exploiting cost-efficiencies. Innovation is fostered through teamwork, both within the Irish operation and through cross-national research teams throughout Analog Devices globally. The company has recently upgraded its wafer manufacturing facility in Limerick moving from a 6” fab to an 8” fab. The Limerick based R&D team of over 400 engineers are involved in IC layout, Analog design (custom transistor level design), Digital/ASIC design, system design, product/test engineering and semiconductor process technology. Access to R&D and highly skilled manufacturing and technological experts allows the Ireland operation develop an average of 80 new products each year. The Irish R&D team has sole responsibility within Analog for the global design, manufacture and supply of value added high voltage mixed signal CMOS products.

+ Boston Scientific

Boston Scientific specialises in manufacturing medical devices for use in minimally invasive surgical procedures. The company set up its first operation in Ireland in 1994, in Galway. The Galway facility is the company’s largest operation in Ireland, manufacturing cardiology related products – stents, catheters and guidewires. This operation also has one of the largest R&D teams in Ireland. Boston Scientific has recently announced an RD&I investment at its Cork facility reflecting the enhanced capability of this facility for the development and commercialisation of next generation products to treat neurovascular diseases of the brain, including coils, intracranial stent delivery systems and access devices. Boston Scientific Corporation currently employs 5,000 people in Ireland.

+ Medtronic

Medtronic has been present in Ireland since 1999. Medtronic’s Galway site is a Centre of Excellence for the development and manufacture of key medical technologies in the treatment and management of cardiovascular and cardiac rhythm diseases, employing over 2000 people in Ireland working at state-of-the-art facilities in Galway. This figure includes over 90 Research & Development personnel working on a number of high value projects such as the development of next generation cardiovascular products and Cardiac Rhythm Disease Management delivery systems. A large proportion of the products manufactured at Medtronic’s Galway site result from R&D carried out at the facility. The company also maintains R&D links with many third level institutions throughout Ireland as the country’s academic climate gives it access to highly-trained medical technology research and development experts.

04_ THE IRISH ADVANTAGE

Ireland is a proven location for RD&I with a successful track record across multiple industry sectors, based on the unique combination of benefits on offer to global business:

- › A stable political environment and respected regulatory regime
- › A pro-business environment with a 12.5% corporate tax rate, tax credits for RD&I activities and an extensive double tax treaty network with 51 countries
- › A high-skills, knowledge-based economy delivering quality, highly productive employees with excellent technical, managerial and multilingual customer service skills
- › A reputation for flexibility, responsiveness and innovation
- › Forty years' experience working with MNCs to establish and expand operations across a wide range of sectors
- › Clusters of global leaders in key high tech industries including pharmaceuticals, medical devices and ICT
- › Experienced and innovative leaders focused on proactively identifying and solving business challenges
- › Strong Government support for RD&I focused on highly productive alliances between industry and academia
- › Excellent legal expertise for the commercialisation and protection of intellectual property rights

+ CONTACT IDA IRELAND



IDA Ireland offers information, advice and ongoing support to companies setting up or expanding RD&I operations in Ireland.

IDA Ireland is Ireland's inward investment promotion agency. The agency works with companies to secure new investment and collaborates with existing foreign investors in Ireland to help expand and develop their businesses. To learn more log on to www.idaireland.com or contact any IDA office.

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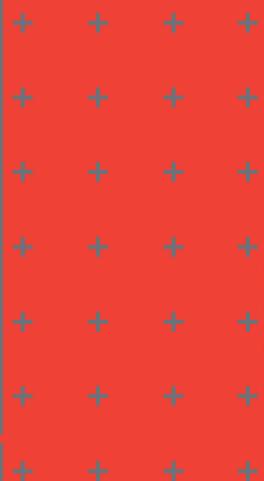
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