Ireland Sector Guide

ICT

OCO Global in Partnership with VEDP

Contents

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This ICT Sector guide shall include an overview of the following:

1. European ICT Sector Overview, Including:

   • An overview of the emerging trends

2. Ireland's ICT Sector Overview, including:

   • An overview of the emerging trends and international trade partners

3. Market Entry Strategy, Including:

   • The opportunities that are available within the Market

   • Key areas for Engagement

   • Potential routes to Market

   • Key Players in the Market

   • Relevant Industry Associations

A. Appendix: Market Entry Case Studies

01

Section One
European ICT Sector Overview

European ICT Market Overview

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€580+ Billion

Total Value of the European ICT sector in 2016/17.

61

The number of Billion dollar companies in Europe in 2018, up from 44 in 2017

Key Markets

London, Madrid, Dublin and Paris are ranked as the largest ICT clusters in Europe

40% Increase

The growth Rate in the number of ICT specialists employed in Europe over the past decade

The European ICT Market has grown consistently over the past several years is valued at over € 580 Billion, with the key markets including the UK, Germany and France. The industry itself has recorded steady employment growth of 4% year on year, contrasting the overall EU employment growth of 1.1%. Meanwhile, a record total of $23Bn has been invested in R&D throughout the ecosystem, up from just $5bn in 2013.

European ICT Market Trends

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The ICT industry in Europe has a relatively high degree of competition and a low degree of concentration, with the majority of businesses classified as SMEs. However, Europe also hosts 69 of the worlds largest IT, Telecoms and technology companies in the world, employing over 5.7 Million ICT professionals, making the European ICT industry a diverse and vibrant ecosystem.

$23 Billion USD of capital was invested in Europe throughout 2018, up from $19.6bn in 2017, reflecting the dynamic nature of the industry as a whole. The majority of which was invested in the development of new technologies, such as cloud, IoT, Artificial Intelligence and analytics, in addition to improving labour productivity.

The fasting growing segment of the European ICT Sector is software development, which is expanding 5 times faster than the rest of the European economy at 3.1% as opposed to 0.6%. This upward trend is forecasted to continually accelerate in the coming years are benefits are realized and greater investments into new technologies are made.

One of the key driving factors within the European ICT industry is the high quality labour, however, the European Market is projected to face labour shortages over the coming years, particularly in Eastern European Countries, due to the lack of formally educated workers which in turn is resulting in increased competition for skilled staff and placing inflationary pressures on wages.

European ICT Market Regulation

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The European Union typically drafts and implements minimum standards regulation on behalf of all member states in an attempt to reduce trade frictions, however, each country is free to draft more stringent legislation should they wish to do so. With regards to the ICT industry, the market is governed by the European Commissions Digital Single Market, which outlines initiatives on topics including Data processing, cybersecurity, ICT standards and Intellectual property.

However, since the ICT market itself is growing at such a rapid pace, there exists a time lag between the identification of potential issues and introduction of new legislation to counteract them, hence there exists gaps in the current regulatory landscape, as policy makers are yet to catch up with the industries rapid proliferation.
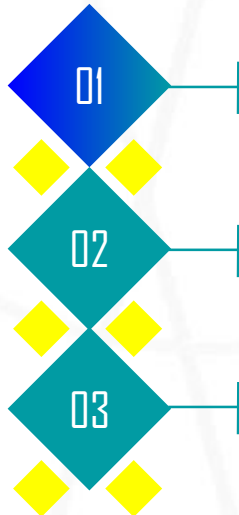
01 Data Privacy is the prevalent topic in the digital age, and much of the legislation currently being drafted and presided over focuses on privacy, particularly surrounding consumers, in addition to the actual ownership of data that companies obtain from consumers. This was reflected within the European GDPR regulations that were recently implemented.

02 The second key issue in the ICT industry pertains to copyrighting, and in particular, protecting companies intellectual property. This has become increasingly important due to the rise in software development and the integration of algorithms, which can easily be replicated. Companies are keen to protect their R&D investments and hence have called for more stringent regulations.

03 Whilst Data Privacy and Copyright issues takes precedence, another area that is generating increasing calls for more stringent regulation is Artificial Intelligence, Robotics and AR/VR. Whilst these industries are still in their infancy, they have largely went unchecked to date, however, as the growth rate has accelerated, there is growing pressure to improve the regulatory landscape.
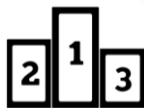
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Section Two
Ireland ICT Market Overview

Ireland ICT Market Overview

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€50+ Billion
The value of ICT exports from Ireland, making it the 2nd largest exporter globally.

3rd
Ireland is the 3rd largest tech cluster in Europe behind London and Madrid.

80,000+
The number of professionals employed within the Irish ICT sector

9/10
Of the top US Technology companies have a presence in Ireland, including the top 5 software companies

Ireland has solidified its status as a global technology hub by attracting and retaining a range of multinational companies, including 9 of the top 10 US ICT companies, mainly due to its high quality labour market. Additionally, Ireland exports 97% of its domestic ICT production globally, which contributes over € 50 Billion to the economy, making it the 2nd largest exporter of ICT related goods and services in the world, with its key trading partners including The US, The UK and The Euro Area.

Irish ICT Market Trends

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The ICT industry in Ireland has a relatively high degree of competition and a low degree of concentration, with the majority of companies operating in the sector classified as SMEs. However, Ireland also hosts a number of large Multinational IT companies, including a large US cohort, such as Apple, Cisco, Google, Facebook, IBM and Microsoft, indicating diversity within the cluster. The industry is forecasted to grow at a rate of over 5% per annum over the next several years

The leading sub-sectors within the Irish ICT market include IT infrastructure, Software and computer services in addition to cloud related computing services. The growth in these markets is largely driven by the nations highly educated, skilled workforce, the majority of which boast tertiary level qualifications from prestigious academic institutions.

End user demand, particularly from companies, is resulting in an increase in the development and offering of Software-as-a-Service (SaaS) and Platform-as-a-Service (PaaS) packages. Additionally, consumers are beginning to demand more bespoke, tailored versions of such packages that meet their specific requirements.

The annual expenditure on Enterprise Software is approximately €258 Million, and is can be attributed to the demand for content management systems, business portals and analytical platforms. Meanwhile, expenditure on network storage is valued at approximately €62 Million, whilst expenditure on Security software is valued at €124 Million.

Irish ICT Market Trends

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Ireland has seen a substantial increase in the volume of data it receives and as a result has invested heavily in data centers, of which it has 53 located nationwide. Furthermore, Irish companies are anticipating the volume of data transmitted to expand by 73% over the next three years, hence they are making further investments to increase their data storage, handling and processing capacity.

Ireland has invested heavily in Internet of Things (IoT) technologies and integrating them into everyday applications, particularly in the public sectors in an effort to develop Smart Cities. Irelands top initiatives include: Smart Dublin, Cork Smart Gateway and Digital Limerick, within which leading US ICT companies have paid a pivotal role in their development and implementation.

A key trend within the Irish Market is the Integration of digital technologies into healthcare in order to improve patient care. Ireland is know internationally for its life sciences sector, and in particularly its MedTech industry, which relies heavily on contributions and investments from leading US technology companies.
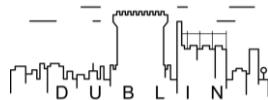
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Section Three
Market Entry

Market Entry Overview

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Potential Routes to Market for ICT Suppliers

Dublin

The largest ICT Hub in Ireland and 3rd largest in Europe

100,000
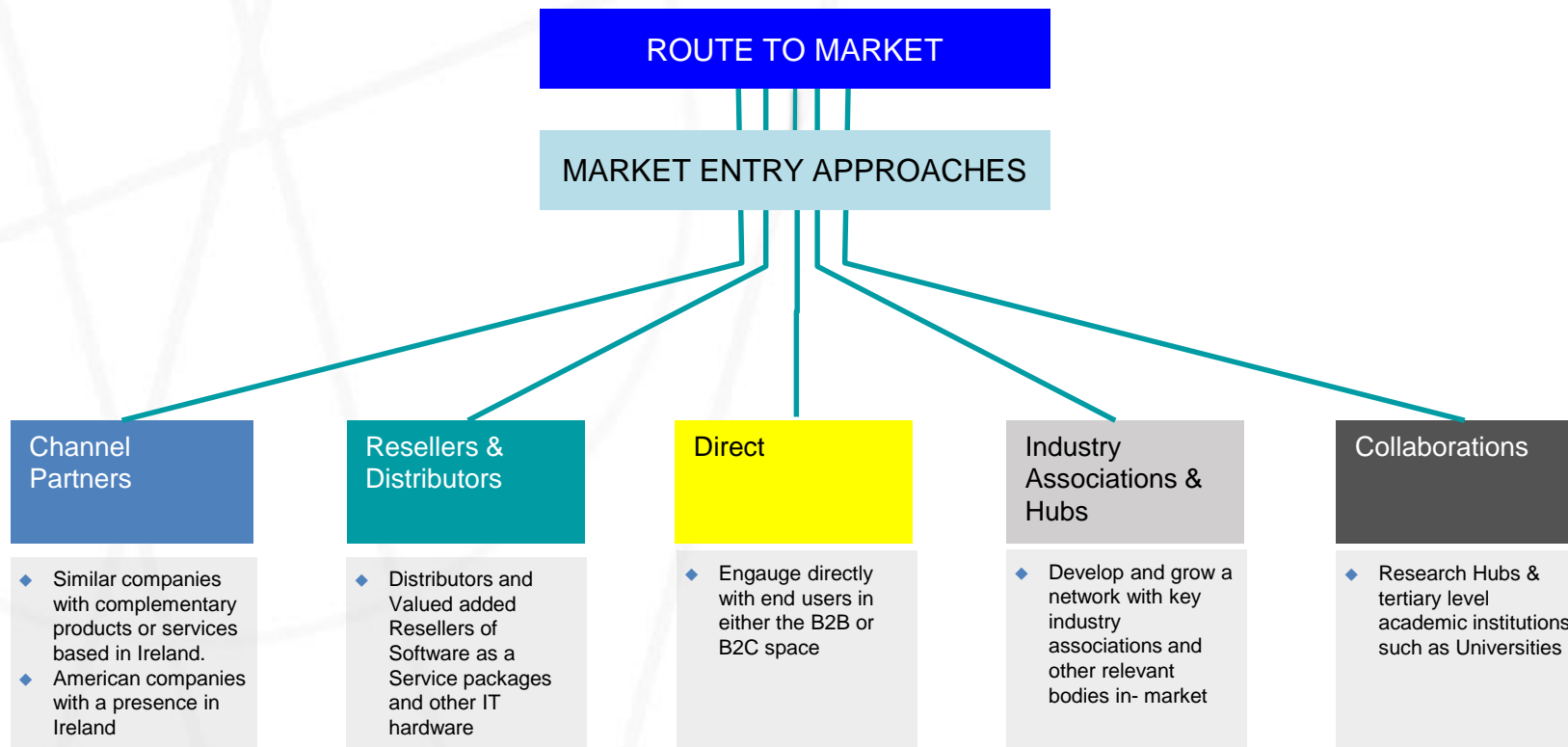
The Number of Digital Companies located within Ireland

6% of GDP

The Value of the ICT sector to the Irish Economy

Ireland has a well established consumer market as its citizens having a relatively high standard of living, with its GDP per capita in 2018 recorded at $78,764 USD. In addition, Ireland boasts a diverse economy with an innovative life sciences and ICT ecosystem, the majority of which are clustered around its major cities, including Dublin, Galway and Cork. This in turn presents a number of opportunities for prospective companies seeking to enter the Irish marketplace.

Route To Market

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ROUTE TO MARKET
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MARKET ENTRY APPROACHES
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Channel Partners	Resellers & Distributors	Direct	Industry Associations & Hubs	Collaborations
◆ Similar companies with complementary products or services based in Ireland. ◆ American companies with a presence in Ireland	◆ Distributors and Valued added Resellers of Software as a Service packages and other IT hardware	◆ Engauge directly with end users in either the B2B or B2C space	◆ Develop and grow a network with key industry associations and other relevant bodies in- market	◆ Research Hubs & tertiary level academic institutions such as Universities

Geographical Distribution of the Irish ICT Sector

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DERRY~LONDONDERRY
BELFAST
LISBURN
ARMAGH
NEWRY
GALWAY
DUBLIN
LIMERICK
KILKENNY
WATERFORD
CORK

GMIT
CISCO

Trinity College Dublin
The University of Dublin
DIT
Google
facebook

University College Cork, Ireland
Coláiste na hOllscoile Corcaigh
UCC
IBM
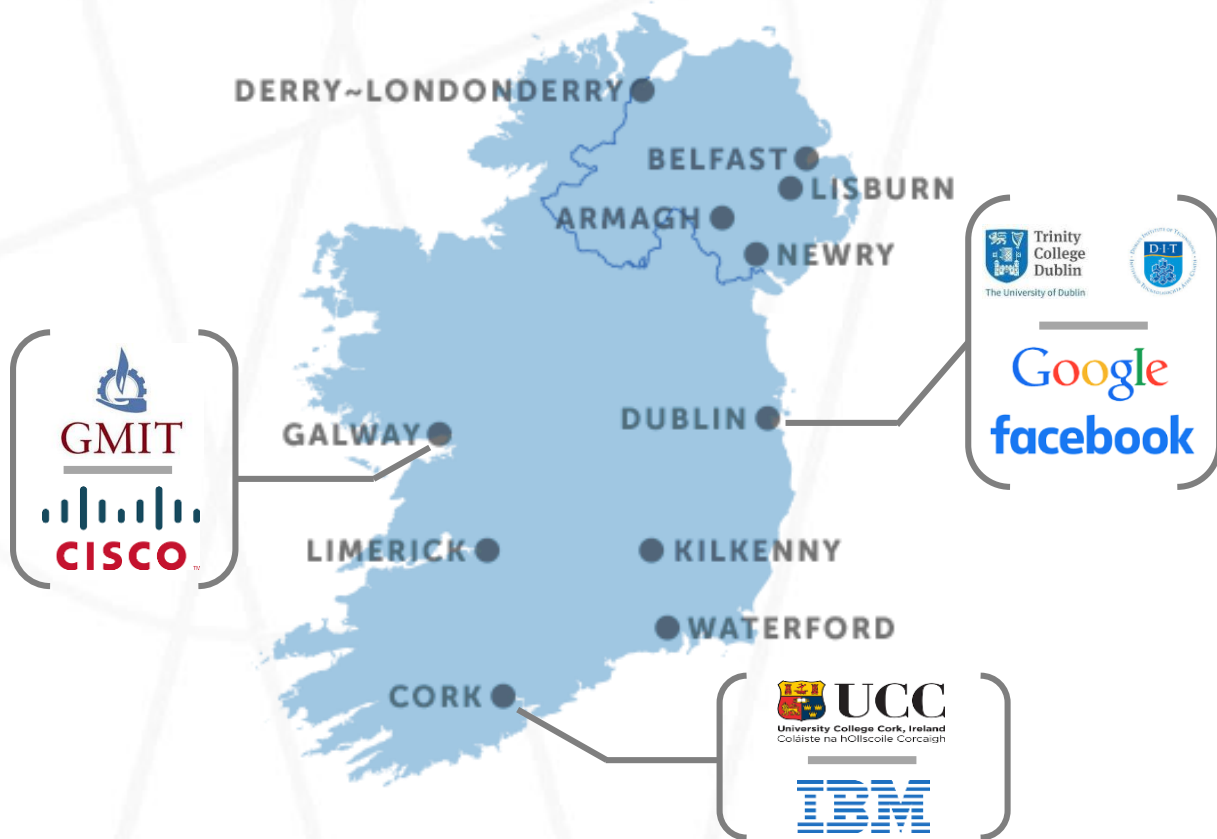
The ICT industry in Ireland is largely driven by high quality labour, hence the geographical distribution of the industry clusters are in close proximity to reputable tertiary level academic institutions that offer ICT and other related software development courses.

As a result, the industry is heavily concentrated around the Dublin region, with additional, albeit smaller clusters, in Cork, Limerick and Galway.

The Key educational establishments which supply the talents Include: Trinity College Dublin, The Dublin Institute of Technology, University College Cork and The Galway-Mayo Institute of Technology.

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Key Players: Company Profiles

IBM Overview

Sector: Business and Professional services
Founded: 1911
Employees: 380,000
Int. Presence: Worldwide
AD: 200 Shelbourne Rd, Dublin, Ireland
Website: www.ibm.com

Intel Corporation Overview

Sector: IT & Software
Founded: 1968
Employees: 145,000+
Int. Presence: Worldwide
AD: R148 Easton, Co, Kildare, Leixlip campus
Website: www.intel.ie

Company Summary

Established in 1991, IBM is an Information Technology and Services Company, headquartered in New York, USA, with over 380,000 employees in over 170 countries. IBM offers a range of products and solutions including AI and Machine Learning algorithms, Cloud Computing Solutions, IT Infrastructure in addition to security and other related services. IBM has a strong presence in the Irish market, with offices in both Dublin and Cork.

Company Summary

Established 1968, Intel Corporation is an Information Technology company headquarter in California, USA, and employs over 145,000 people globally. Intel provide a range of products and services, including IT infrastructure, software packages and cloud services, furthermore intel has a strong presence in Ireland, investing over $15bn since 1989 and employing almost 5,000 people across two sites.

15

Key Players: Company Profiles

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Google Overview

Sector: Technology
Founded: 1979
Employees: 190,000+
Int. Presence: Worldwide
AD: Barrow Street, Dublin, IE
Website: www.google.com

Cisco Overview

Sector: Technology
Founded: 1984
Employees: 91,000+
Int. Presence: Worldwide
AD: Eastpoint Business Park, Dublin, IE
Website: www.cisco.com

Company Summary

Founded in 1998, Google is a technology company that is headquartered in California, USA, and employs over 190,000 employees in 70 offices in more than 50 countries. Google provides a range of products and services, in addition to software applications, including YouTube, one drive and Gmail. Google has based its European, Middle East and Asian headquarters within its state of the art, purpose built Dublin campus.

Company Summary

Founded in 1984, Cisco is a technology company that is based in California, USA, and employs more than 90,000 people. Cisco provides a range of products and services, including IT Infrastructure, IT Hardware, Software, IoT systems and cloud services. Cisco has two locations in Ireland, with the main office situated in Dublin and a second in Galway.

Industry Associations

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Technology Ireland Overview

Sector: Industry Association
Founded: 1968
Members: 200+
Int. Presence: N/A
AD: 84/86 Lower Baggot Street, Dublin, IE
Website: www.technology-ireland.ie

Digital Europe

Sector: Industry Association
Founded: 1999
members: 35,000+
Int. Presence: N/A
AD: Rue de la Science, Brussels, Belgium
Website: www.digitaleurope.org

Association Summary

Established in 1968, Technology Ireland is an industry association that's dedicated to supporting the growth of the Irish Technology industry and ensure its position as a global leader in the industry. Technology Ireland was formed by the merger of ICT Ireland and the Irish Software association and now represents over 200 member companies located throughout the country. Technology Ireland is also formally affiliated with the Software & Information Industry Association and the Information Technology Industry Council, two U.S. based organisations.

Association Summary

Founded in 1999, Digital Europe is an industry association with the aim of contributing to and supporting the business, policy and regulatory environment throughout Europe for its 35,000 members. Digital Europe seeks to collaborate with a range of European institutions, global bodies and other national associations to support the growth of the digital industry.

Irish ICT Market Opportunities

There are a number of opportunities for US Companies seeking to enter the Irish Market, these include:

01 There has been a series of Initiatives set out by several of key cities in Ireland, aiming to build smart cities and integrate IoT and related technologies into new and existing legacy infrastructure. The majority of these investments are made by US IT companies, hence the Irish market is well aware and accepting of the high quality goods and services that American companies bring.

02 Due to the realization of the benefits of data analytics, there has been a rapid growth in demand for big data analytics and related ICT services, such that the supply of labour has not kept pace. Services such as data mining, which focuses on deeper insights, quicker reactions to changing market dynamics and improvements customer satisfaction and retention rates, are of paramount importance to companies. Hence, this presents opportunities for companies operating in this sector.

03 In addition to technological integration in the public sector to produce smart cities, Ireland has also witnessed growing demand for technology adaptation for the private sector, particularly within finance and healthcare. Ireland is well known for its diverse and vibrant FinTech and MedTech ecosystem, which is patient centric and focuses on innovation. This presents opportunities for companies that adapt technologies into these industries.

04 Irelands highly educated labour force is diving the software development industry, and in particular the artificial intelligence and machine learning sub-sectors. This in turn may provide opportunities for companies seeking to either support or supply this field.

05 In conjunction with the rise of data analytics, there has been a growing volume of cloud storage and data processing within Ireland. This in turn has caused an increase in the number of datacentres in the country, which provides opportunities for prospective companies wishing to supply or support this thriving sub-sector.
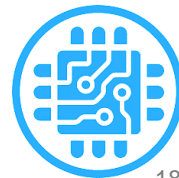
Irish ICT Market - Areas for Engagement

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A number of companies that are present in the Irish market are headquartered in the US, therefore, prospective US companies seeking to enter the Irish market may be able to do so by connecting initially with their US counterparts, and then leverage this existing relationship to supply their Irish offices. This is applicable for both hardware, software and service providers.

For Prospective ICT related service providers that are seeking to enter the Irish market, the key area for engagement would be to identify and collaborate with channel partners that are already present within the industry. This will enable the company to access the market through their connections.

Prospective US companies that are seeking to supply ICT related hardware and software packages are likely to engage with resellers and distributors in market, as they have pre-existing connections in place.
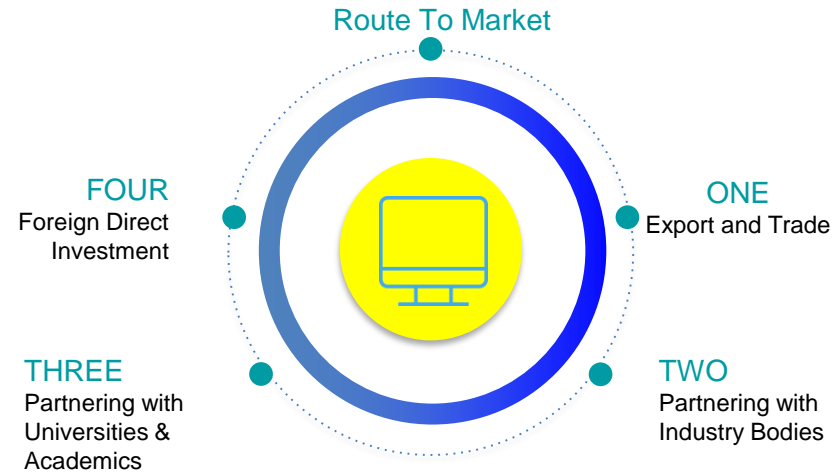
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Appendix
Market Entry Case Study

Case Study: Market Entry Strategy - Intel

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US-based company Intel specializes in the design and manufacturing of ICT Hardware and software, and other related components, namely semiconductors.

Market Entry: Intel first entered the Irish market in 1989, when it began trading from a former car showroom in Dublin. Within the next several years, Intel would go on to establish connections throughout the industry and invest heavily in the Irish Economy. At the height of its power, Intel's Irish operation was producing more than one third of all computer processors in the world. Meanwhile, today, the companies focus has shifted somewhat, investing heavily on the development of ICT related software, Cloud storage solutions, IoT and automotive technology, whilst still producing around half of the company's global supply of 14nm processors.

Route To Market

FOUR
Foreign Direct
Investment

ONE
Export and Trade

THREE
Partnering with
Universities &
Academics

TWO
Partnering with
Industry Bodies

21

Case Study: Market Entry Strategy - Intel

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01	**Exporting and Trading**	Intel initially began operations in Ireland in 1989, by trading from a former car showroom in Dublin, which initially enabled them to enter the Irish market. From here, Intel would utilize this pre-existing trading relationship to leverage further expansion and then go on to become one of the largest contributors to the Irish economy, naming Ireland as its European Headquarters.
02	**PARTNERING WITH INDUSTRY BODIES**	Intel has partnered with a number of key industry associations in Ireland, including IBECs Technology Ireland and IDA Ireland. Membership to these industry associations provide an array of benefits, including a platform for its members to influence policies and advocate development initiatives, in which Intel utilized and played a pivotal role in shaping the Irish ICT sector.
03	**PARTNERING WITH UNIVERSITIES & ACADEMICS**	Intel Ireland contributes €1.3 Million annually to education programs with a number of high level academic institutions. This investment is to ensure a consistent supply of educated, high quality labour, which is vital for the company to retain its competitiveness in the design, manufacturing and innovation processes.
04	**Foreign Direct Investment**	Intel has invested more than $13.9 Billion in the Irish Market since 1989 which in turn has supported more than 4,900 staff. Intel has commissioned the construction of state of the art, purpose built facilities, including the Fab 14 and Fab 24 in leixlip, both of which seen multiple investments and refurbishments during their operational lifespan. As of 2019, intel has been granted planning permission for the development of another $4bn manufacturing facility in Ireland.