INNOVATION AND ENTREPRENEURSHIP IN THE DRINKS INDUSTRY

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Report commissioned by the Drinks Industry Group of Ireland (DIGI)



The number of drinks manufacturing enterprises has grown by 105% compared with **10**/ in total **10** manufacturing since 2008

Compared to 2009



There are **6**X more cider manufacturing licences today

Microbreweries have quadrupled since 2012, from 15 to

72



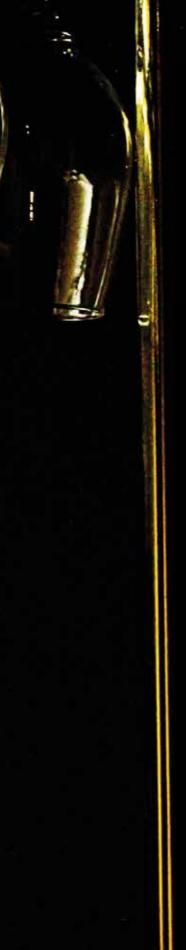
4.7x more distillery manufacturing licences

There are

Craft breweries have grown from E8m turnover to over 4 years



production breweries in Ireland. Over are located outside of Dublin



Foreword

Ireland's drinks industry is the fastest-growing manufacturing industry in the country in terms of new enterprises. Whereas, the overall sector has grown by less than a percent in the last decade, the number of drinks industry enterprises has grown by 105 percent. In comparison, the number of enterprises in the second fastest-growing manufacturing industry, food, has grown by 28 percent in the same period.

The drinks consumer of 2018 has specific, refined tastes. They appreciate provenance, brand heritage and the manufacturing process. Importantly, they are prepared to pay a premium for quality. Irish breweries, distilleries and cider producers have responded in kind, experimenting with new product lines and new recipes. This has paid off.

Since 2012, the number of Irish microbreweries has guadrupled. There are now 33 distilleries, compared to just seven in 2009. A further 16 are in development. Perhaps most encouraging of all is that a great deal of this growth is evenly spread across the country. More than 90 percent of all breweries are located outside of Dublin.

And it's not just the manufacturers that are innovating. In response to changing consumer tastes, public houses and off-licences are increasingly fostering their own culture of experimentation and modernity, continuously investing in their service. Nearly three-quarters of Irish pubs have refurbished their premises in the last three years, while a growing number of off-licences are hosting wine and spirit tasting events, encouraging customer loyalty and diversifying their product knowledge.

This report, commissioned by the Drinks Industry Group of Ireland (DIGI) and authored by DCU economist Anthony Foley, clearly demonstrates the industry's entrepreneurship and innovation and its value to the economy. DIG

Indeed, the success story of Irish drinks should be a source of national pride. But if we are to ensure that it remains told in the years ahead, industry and policymakers must work side by side to remove barriers to growth.

Unfortunately, excise tax remains one such barrier. Ireland's tax on alcohol is one of the highest in the EU. We have the highest tax on wine, the second highest on beer, and the third highest on spirits.

Faced with Brexit and potential trade barriers, lowering the tax is crucial for Irish competitiveness at home and abroad. Jobs and businesses depend on it. The drinks industry employs 92,000 people and supports as many as 210,000 jobs in the wider hospitality sector. This employment is nationwide, spread out among Ireland's cities, towns and villages.

In rural Ireland, where less developed infrastructure hinders the creation of high-tech jobs, breweries, distilleries, pubs and other drinks industry businesses provide a way for smaller communities to remain hubs of economic activity, innovation and entrepreneurship.

Maggie Timoney Chairperson

About DIGI

The Drinks Industry Group of Ireland (DIGI) is the umbrella organisation for the drinks and hospitality industry in Ireland. DIGI's membership spans brewers, distillers, distributors and the retail sectors (both the on-trade - pubs, hotels, restaurants - and the independent off-licence sector). Its members include:

- Alcohol Beverage Federation of Ireland
- Irish Hotels Federation
- Licensed Vintners Association
- National Off-Licence Association
- Restaurants Association of Ireland
- Vintners Federation of Ireland

Almost 92,000 jobs across the country are dependent on the drinks industry alone. It purchases over €1.1bn of Irish produce annually, exports goods worth over €1.25bn, and provides over €2.3bn worth of excise and VAT income to the state, as well as hundreds of millions in income tax, PRSI receipts and tax on profits every year. It is also a vital element of Ireland's wider hospitality sector and internationally renowned tourism offering.

DIGI, through its Support Your Local campaign, seeks to highlight the positive economic, cultural and social contribution that the drinks and wider hospitality industry makes to Ireland nationally and locally. We work with stakeholders to create conditions that ensure the industry's stability and continued growth. The campaign looks forward to engaging with the Government to ensure that policy measures continue to support the ongoing growth and development of a key industry and driver of economic activity in Ireland.

Contents

Key findings Objective Innovation and Competition in New venture for Product develo Process develo Innovation in p Innovation in of **Business diversi** Entrepreneurial Future innovation In summary References



2

Foreword by Drinks Industry Group of Ireland

	5
entrepreneurship	6
domestic and global markets	9
rmation in manufacturing of alcohol	11
oment	17
oment	20
ublic houses	22
f-licences	25
ification into visitor centres	26
resource in drinks industry	29
on, entrepreneurship and growth	30
	34
	25

Key findings

- There is a very high rate of new venture formation in the drinks industry compared with total manufacturing.
- In 2008 there were 60 drinks manufacturing enterprises. By 2014 this had increased to 123, an increase of 105%. In contrast, the number of enterprises in total manufacturing increased by less than 1%.
- The number of alcohol manufacturing licences increased from 32 in 2009 to 137 in 2017.
- > The number of brewing licences increased from 22 to 86.
- > The number of distilling licences increased from 7 to 33.
- > The number of cider manufacturing licences increased from 3 to 18.
- The number of microbreweries producing their own product has more than quadrupled since 2012, from 15 to 72.
- The Irish Whiskey Association reports a total of 18 working distilleries in 2017 with plans for another 16. This compares with 4 working distilleries in 2013.
- There is a wide geographic spread to the new drinks ventures with very few of them located in Dublin.
- The typical microbrewery now has 4 to 5 regular product lines.

- The longer established large global producers located in Ireland such as Diageo, Heineken and Irish Distillers, in addition to the new and smaller enterprises, have also invested substantial resources in product development in Ireland to meet changing consumer tastes and preferences.
- >One major Irish off-licence operator lists 61 Irish IPA beers, 14 Irish lagers, 36 Irish pale ales and 65 Irish whiskeys in its product range.
- The gin-producing sector has a target to treble exports to 400,000 9-litre cases by 2022.
- Public houses have been innovative in responding to market challenges. 73% have refurbished their premises and 70% make use of social media for marketing purposes.
- The independent off-licence sector has promoted innovation and excellence among its members through the NOffLA Off-licence of the Year Awards.
- The off-licence product offerings in all categories, but especially in wine, have been characterised by increased range and variety, improved service, increased consumer knowledge partly assisted by wine appreciation education programmes by off-licences and wine importers.

- The drinks industry has been notable for its business diversification innovation into visitor centres. The largest fee-charging visitor attraction in Ireland is the Guinness Storehouse.
- There has been a substantial increase in whiskey visitor centres.
- In a survey of 50 microbreweries, eight already have a visitor facility in place and a further 36 intended to develop a facility on the enactment of the Intoxicating Liquor (Breweries and Distilleries] Bill 2016.
- The drinks industry is a very large source of entrepreneurs because it is primarily populated by many small enterprises which are operated by owner-entrepreneurs. This is also true of the wider hospitality sector, including restaurants and hotels.



Objective

The primary objective of this report is to provide a profile, overview and summary of innovation and entrepreneurship in the Irish drinks industry. This profile has been established using existing data. A secondary objective is to refer to the role of alcohol excise in the innovation performance.

The drinks industry includes drinks manufacturers, on-licensed and offlicensed retail distributors, wholesalers, and drinks-related visitor centres. This report is motivated by the fact that the drinks industry, which is a long-established sector, with some companies and establishments existing for hundreds of years, is often perceived to be a traditional non-innovative sector.

In fact, the industry has displayed a very substantial degree of innovation and entrepreneurship in recent years in terms of new venture formation in manufacturing, product development, market development and business diversification. The degree of innovation and entrepreneurship in drinks manufacturing exceeds that of many other sectors of economic activity.

In addition, as shown in this report, the drinks industry is a substantial entrepreneurship resource. Innovation is present across the different drinks activities of manufacturing, on-licensed and off-licensed enterprises and wholesale distribution.

Ireland's long-term indigenous industrial development performance has been characterised by a very limited ability to establish global consumer-branded products. Among this select and small group are Guinness, Jameson and Baileys Irish Cream from the drinks industry.

Innovation and entrepreneurship

Entrepreneurship generally refers to the practice of starting a new business which itself requires a degree of innovation and risk taking. Intrapreneurship refers to the practice of entrepreneurship within an already existing enterprise.

Product innovation is the introduction of a good or service that is new or has been significantly improved or has different characteristics or intended uses. Product innovation relates to both existing companies who develop new products and new ventures which bring new products to the market. Process innovation refers to the implementation of a new or significantly improved production or delivery method.

Innovation and entrepreneurship are important contributors to economic growth, employment, competitiveness and prosperity, especially in an increasingly open and competitive global economic environment. High levels of innovation and entrepreneurship are generally public policy goals.

New product developments by industry entrants impose competitive and as such do not directly generate pressure on existing operators to be innovative and enhance the ability of a domestic industry to deal with competition from imports and to perform in export markets. While there are social and economic benefits from innovation, it must also be acknowledged that enterprises undertake innovation to improve their own market and profit situation.

The impact of innovation and entrepreneurship on domestic economic activity is different depending on the sector and type of innovation. New product development by domestic drinks enterprises supports domestic market share relative to imports and export performance. This in turn increases domestic drinks production and Irish employment from what it otherwise would have been. Broader and changing consumer tastes are catered for by a larger range and variety of domestic drinks products which reduces the extent to which domestic consumption has to be sourced from imports.

It should also be noted that some of the new Irish drinks products, like new beers and new whiskeys, will displace some of the existing Irish products as well as contribute to domestic and export market development.

Some aspects of drinks industry innovation, such as in the wine sector, while meeting consumer demands and tastes, increase the import share of drinks consumption domestic economic activity and employment in the way that new domestic products do through import substitution and export development.

The wine sector has been characterised by increased range and variety, improved service in both on and off-licences, and increased consumer knowledge partly assisted by wine appreciation education programmes by off-licences and wine importers. These innovations and developments have probably contributed to the growth in wine consumption and the increase in the wine share of the drinks market which is identified in the following section. Since wine is imported its increased consumption does not support domestic production of alcoholic products and probably displaces some domestic consumption of domestic drinks products. However, the difference between the import price of wine and its final consumer price which represents the associated transport, wholesale and retail distribution activities is additional economic output for the Irish economy.



07

Competition in domestic and global markets

The drinks industry and market are highly competitive in both domestic and international terms. Domestic enterprises, beverages and brands compete extensively with each other in the domestic market. In addition, there is substantial competition in the domestic market from international markets and foreign brands. This intense competition both drives the need for innovation and increases the difficulty of achieving commercially successful innovation.

Import penetration of the domestic market is high which indicates strong competition from imported products. It has increased over time. Between 2003 and 2016 the imported share of domestic consumption has increased as follows:

- from 15.7% to 35.0% in beer
- from 43.8% to 64.3% in spirits
- from 9.2% to 14.3% in cider

In addition, the share of domestic alcohol consumption accounted for by wine, which is all imported, increased from 17.9% to 27.6%.

Domestic drinks enterprises and brands face substantial and increasing competition from imported beverages. Imports provide 35% of beer consumption, 64.3% of spirits consumption and 14.3% of cider consumption. Wine, which is all imported, accounts for 27.6% of total alcohol consumption.

Beverage exports from Ireland face strong competition in foreign markets from local brands and from other exported products. Exports of beverages in 2017 were €1.497 billion compared with €1.197 billion in 2013. Whiskey is the dominant beverage export with 36% of the total, followed by liqueurs with 21%, beer with 20% and cider 4%.

Bord Bia estimated 2017 drinks exports to be €1.497 billion in 2017 compared with €1.197 billion in 2013.

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New venture formation in manufacturing of alcohol

New venture formation has been substantial in the drinks manufacturing sector over recent years. The latest CSO data on drinks industry enterprises refer to 2014 and these are shown below [Table 1]. The CSO data include soft drinks as well as alcohol. The data refer to the number of enterprises and the net change in a particular period. It would be preferable to have complete enterprise demographic data such including new entrants and exits but these are not available at the detailed sectoral level.

Table 1 - Number of enterprises in drinl

	2008	2009	2010	2011	2012	2013	2014	% change 2008 to 2014
Drinks	60	68	70	76	84	102	123	+105
Manufacturing	14513	14629	14311	14336	14533	14649	14628	+0.8%
Sources: CSO census of industrial production database.								

The establishment over recent years of many new small breweries and distilleries has been well documented. The CSO data confirm this situation. In 2008 there were 60 drinks manufacturing enterprises. By 2014 this had increased to 123, an increase of 105%. In contrast, the number of enterprises in total manufacturing increased by less than 1%. The biggest increases in the number of drinks manufacturers were in the latest part of the period.

There has been a substantial increase in the number of drinks manufacturers, such as breweries and distilleries, between 2008 and 2014. The number of drinks manufacturing enterprises has more than doubled, while the overall number of manufacturing enterprises has remained almost constant with an increase of under 1%.

Table 2 presents a comparison of enterprise numbers for the 21 differentNace 2-digit sectors in manufacturing. Data are not available for tobacco andcoke/petroleum.



ıks	and t	otal:	manufacturing	2008	to	2014



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Sector	Nace sector	2008	2014	Increase + or decrease -	% change
Food	10	1181	1511	+	+27.9
Beverages	11	60	123	+	+105.0
Торассо	12	na	na		
Textiles	13	448	403	-	-10.0
Clothes	14	289	333	+	+15.2
Leather	15	51	60	+	+17.6
Wood	16	935	892	- 10000	-4.6
Paper	17	197	201	+	+2.0
Printing	18	1053	1173	+	+11.4
Coke and petroleum	19	na	na		
Chemicals	20	284	299	+ /	+5.3
Pharmaceuticals	21	128	155	+ 80	+21.1
Rubber and plastic	22	508	478	- 157	-5.9
Other non-metallic					
mineral	23	1185	1002	-	-15.4
Basic metals	24	379	341	-	-10.0
Fabricated metal					
products	25	3356	2975	-	-11.4
Computer	26	308	377	+	+22.4
Electrical	27	266	266	nc	
Machinery	28	577	583	+	+1.0
Motor vehicles	29	122	122	nc	
Other transport	30	66	71	+	+7.6
Furniture	31	1412	1110	-	-21.4
Other manufacturing	32	721	878	+	+21.8

Table 2: Number of enterprises in drinks and other sectors in manufacturing 2008 and 2014

Sources: CSO census of industrial production database.

Twelve of the 21 manufacturing sectors had increases in the number of enterprises over the 2008 to 2014 period. Seven had decreases and there was no change in two sectors. The beverages sector had, by a substantial extent, the largest increase in percentage terms, 105%. The second highest increase was food with 27.9%.

The drinks sector had, by far, the highest rate of new venture formation of all 21 two digit sectors in manufacturing.

The upward trend in the number of breweries and distilleries is also illustrated by the Revenue Commissioners' licence data. Between 2009 and 2017 the number of licences for brewers, distillers and cider manufacturers increased from 32 to 137. Some drinks enterprises have licences for more than one beverage and the Revenue numbers slightly overstate the increase in drinks enterprises, but they give a good picture of the long-term trend. The number of brewing licences increased from 22 to 86. The number of distilling licences increased from seven to 33 and the number of cider manufacturing licences increased from three to 18.

In more recent years the total number of manufacturing licences went from 103 in 2014, to 104 in 2015, to 146 in 2016, and decreased to 137 in 2017. Over the longer term, the change in the number of licences is a good indicator of changes in the number of enterprises. On a short-term, year-to-year basis, the change can be influenced by the timing of renewal of licences as opposed to changes in the number of actual enterprises.

Table 3: Drinks manufacturing licences 2009 to 2017

Sector	2009	2014	2015	2016	2017
Brewers	22	75	70	94	86
Distillers	7	18	19	35	33
Cider Manufacturers	3	10	15	17	18
Total Manufacturers	32	103	104	146	137

Sources: Revenue Commissioners. 2009 to 2016 from online database. 2017 unpublished data

The number of alcohol manufacturing licences increased from 32 in 2009 to 137 in 2017. Breweries increase from 22 to 86. Distillers increased from 7 to 33. Cider manufacturing licences increased from 3 to 18.

The large increase in the number of small breweries is confirmed by the Craft Beer and Microbreweries in Ireland 2017 report. Microbreweries are of two different types, as noted in the report: those which produce beer on their own premises for sale, and those which sell beer products produced for them by other breweries. The report estimated that there were over 100 microbreweries operating in the Republic of Ireland, of which 72 produced and approximately 30 bought their product from elsewhere. The report notes that the number of microbreweries producing their own product has increased almost fivefold since 2012.



The growth in production microbreweries since 2012, based on Bord Bia and survey data, is shown in Table 4 below. Over the 2012 to 2017 period, the number of production microbreweries increased from 15 to 72, an increase of 57. The 2015 increase accounted for 16 of the 57 increase and 2016 accounted for 14 of the increase.

Table 4: Production microbreweries 2012 to 2017

	2012	2013	2014	2015	2016	2017
Number	15	23	32	48	62	72
Change in number from previous year		8	9	16	14	10

Sources: Craft Beer and Microbreweries in Ireland 2017. Bord Bia 2018

The Irish Whiskey Association reports a total of 18 working distilleries in 2017 with plans for another 16. This compares with 4 working distilleries in 2013. Despite the large increase in the number of craft breweries they still account for a small share of the overall Irish beer market. The 2017 Bord Bia report concludes that production craft breweries accounted for 2.3% of the production market in 2016 and about 3% of the domestic production consumed domestically. While still small, the shares have increased since 2012 when the first data were available. The 2012 share of production was 0.4% and was 0.6% of domestic production consumed in Ireland.

The turnover of craft breweries was €52 million in 2016 compared to €8 million in 2012. The craft breweries are usually quite small. The 72 production breweries employed 516 persons in 2017, an average of 7.2 persons per brewery. Based on a survey of 46 microbreweries, 24% employed one or two persons, 22% employed three or four persons, 21% employed five or six persons, 15% of microbreweries employed seven to nine persons and 18% employed ten or more persons. Only 5.9% of microbreweries employed ten or more persons in 2015.

The microbreweries are primarily domestic market-oriented. In 2016 according to Bord Bia (2018), 78% of production was for the domestic market and 22% for export. While 56% of microbreweries export some production, exports are highly concentrated with four breweries accounting for 69% of all exports. The export share has fluctuated over recent years and was 35% in 2012, 22% in 2013, 24% in 2014, 18% in 2015 and 22% in 2016. This is not surprising because as new breweries are established, they are mainly focused on the domestic market and exports are built up over time. Of the 44% of microbreweries that do not export, 80% hope to develop export markets in the coming years.

The UK emerged as a significant market for both existing and intending market. Brexit may have a significant negative impact on the role of the UK market.

Even with the recent increase, Ireland has fewer microbreweries relative to population than several other European countries. In 2015, Ireland had 15 microbreweries per million of population. Very far ahead of the rest was Switzerland with 71 microbreweries per million of population. The UK, which was ranked second, had 29, Slovenia had 24, Sweden had 22, the Czech Republic had 19, Norway and Denmark each had 18 and Latvia had 17. As noted above the number of Irish microbreweries increased from 48 in 2015 to 72 in 2017. While other countries may also have had increases it is likely that Ireland's relative position in 2017 has improved relative to 2015. While there has been impressive growth in the number of distilleries, it is notable that Scotland has over 120 active distilleries compared to Ireland's current and planned 34. Clearly, there is a long way to go to catch up with Scotland in distilleries and certain other countries in microbreweries.

There is a wide geographic and regional spread to the new ventures in the drinks industry. The Bord Bia Craft and Microbreweries in Ireland 2017 report identifies the county spread of the 72 production breweries. It is notable that only one of the 26 counties does not have a microbrewery.

Also notable from a regional development perspective is that only seven of the 72, or 9.7%, are located in Dublin. 65 or 90.3% are located outside Dublin. Cork has 10 microbreweries, Dublin, as already noted has seven, Donegal, Galway and Wicklow each have five and Kerry, Mayo and Wexford each have three microbreweries.

Table 5: Geographic spread of microbreweries in 2017

County	Number of microbreweries	County	Number of microbreweries
Carlow	1	Louth	3
Cavan		Longford	1
Clare	2	Мауо	4
Cork	10	Meath	3
Donegal	5	Monaghan	1
Dublin	7	Offaly	1
Galway	5	Roscommon	1
Kerry	4	Sligo	2
Kildare	3	Tipperary	1
Kilkenny	1	Waterford	3
Laois	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Westmeath	0
Leitrim	1	Wexford	4
Limerick	2	Wicklow	5

Sources: Craft Beer and Microbreweries in Ireland 2017. Bord Bia 2018

The distilleries are also geographically spread with only three of them located in Dublin. Microbreweries and distilleries are mainly located outside Dublin and contribute to regional development.



Product development

There has been a very substantial increase in the number of drinks products produced by Irish drinks enterprises in recent years. There are very many examples of product developments and product differentiation both by established producers, large and small, and by the many new entrants to the drinks sector.

In the brewing sector there is a wide variety of domestically produced beers available. They all fall within the beer sector, but the individual products are distinctive and individual.

The longer established large global producers have also invested substantial resources in product development in Ireland to meet changing consumer tastes and preferences, such as the Guinness Brewers Project, based at the Experimental Brewery at St James's Gate. This is now generally known as the Open Gate Brewery because it is open to the public.

Diageo globally has an objective that 20% of revenues will come from new products. In 2018 new Diageo products developed in Dublin have included Rockshore Lager, Hop House 13, Open Gate Citra IPA, Open Gate Pilsner and Open Gate Pure Brew, a non-alcoholic lager. Baileys dairy-free and veganfriendly Almande was developed in Ireland and launched initially in the USA.

Heineken launched Heineken 0.0%, a non-alcoholic lager in 2018. Orchard Thieves cider, which was developed by the local Irish innovation team, was launched in 2015 by Heineken. Appleman's cider was also developed by the local Heineken innovation team and was launched in 2018.

Many small breweries produce more than one product line. As reported in the 2016 Craft Beer report:

"The typical microbrewery now has four to five regular product lines as against three to four in 2015. There is evidence over the last three surveys of considerable diversification in regular product lines. There are now 26 production microbreweries with five or more regular product lines. The equivalent figures for 2015 and 2014 were 18 and seven respectively. On average, microbreweries have six seasonal or occasional product lines."

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This represents a substantial amount of new product development in the beer sector. For example, one major Irish off-licence operator lists 61 Irish IPA beers, 14 Irish lagers and 36 Irish pale ales in its product range. The process is repeated in the whiskey sector and to a growing extent in the gin sector. The many new distilleries are each producing distinctive products. The same major off-licence operation lists 65 different Irish whiskeys in its product range.

In the whiskey distilling sector, each new entrant brings its own differentiated product to the market. A well-functioning wholesale market allows new entrants access to mature liquid. This allows them to build brands without having to build a distillery. In Ireland this is evidenced by the number of new whiskeys that have entered the sector in recent years and the new whiskeys which will follow in the years ahead as the category expands.

Irish Distillers introduced their "Method and Madness" innovation system in February 2017 and developed a new range of six 'world-first' experimental super premium Irish whiskeys using never-before-used cask finishes. These whiskeys were designed to drive innovation in Irish whiskey. Method and Madness is designed to reflect a next generation Irish spirit brand with a measure of curiosity and intrigue (Madness), while also being grounded in the generations of distilling expertise at the Midleton Distillery [Method].

The Method and Madness range initially launched with four new Irish whiskeys, each with its own unique feature. Following the launch of the brand, in May 2018, Irish Distillers released two new products in the Method and Madness range, a Single Pot Still Irish whiskey finished in Virgin Hungarian Oak and a 28-year-old Ruby Port Pipe.

Midleton Dair Ghaelach is a series of single pot still Irish whiskeys finished in virgin Irish oak casks, in partnership with local forests combining sustainability with innovation. Due to the recent rejuvenation in the plantation of Irish oak, it is now possible to responsibly procure native oak for maturation purposes that is sustainable in the long-term. Irish Distillers worked with the internationally recognised Association Futaie Irréguliére [AFI] and professional foresters Purser, Tarelton and Russell, whose craftspeople have guided Irish Distillers over the past eight years on the sourcing, felling and long-term sustainability of Irish oak.

In 2015, Irish Distillers released Midleton Dair Ghaelach Grinsell's Wood, finished in virgin native Irish Oak Hogshead casks, harvested from Ballaghtobin Estate, Co. Kilkenny. This was followed in 2017 by Midleton Dair Ghaelach Bluebell Forest, finished in casks made from Irish oak grown in the Bluebell Forest of Castle Blunden Estate, County Kilkenny. The Midleton Distillery is heavily involved in innovation in the prestige Irish whiskey category to cater for growing international appreciation of Single Pot Still Irish Whiskey.

Whiskey expansion has generated most attention in recent years. However, there is also significant development in the gin sector. There has been a resurgence in the market for gin in recent years to respond to consumer trends and requirements. This has resulted in a large increase in the number of Irish gin producers with over 30 Irish brands now on the market.

While the domestic market has been the impetus for this growth, the export market will provide additional impetus. Several Irish gin producers are working with Bord Bia to enter new markets and increase their exports. The gin-producing sector has a target to treble exports to 400,000 9-litre cases by 2022 and to develop a "Gin Trail" similar to the Whiskey Trail. The main target export markets are the UK, Spain Germany, USA and Canada.

There is a substantial degree of new product development in the drinks industry covering all main beverage categories.

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Process development

Process improvements come in many guises. Enterprises generally are on a continuous process of improving efficiency, devising better systems, reducing costs and raising productivity. This is driven both by desires to improve profits and to cope with competition.

the brewery to discover their influence on Irish stout and, when the beerseasoned barrels are returned, Irish Distillers re-fill them with Jameson Irish whiskey. The Jameson Caskmates concept was initiated in 2015 with the launch of Jameson Caskmates Stout Edition.

The drinks industry, ranging from large manufacturers to small public houses or off-licences, is the same as other sectors in this regard. For example, public houses today monitor costs using technology to a much greater extent than in the past. Distribution channels have changed to reflect more efficient options. Outsourcing is now more extensive than previously.

But in addition to these general influences, the drinks industry also has industry-specific innovations. Some of these process innovations are directly linked to product improvement or development. For example, Jameson Caskmates whiskey is produced using casks which had previously been used for ageing of stout, giving it a unique taste. This results in a different or differentiated product from the change in the process.

Jameson Caskmates is the result of a collaboration with a Cork-based craftbrewer. The collaboration sees Irish Distillers loan some Jameson casks to Following this project, a tripledistilled, blended Irish whiskey that has been finished in Irish Pale Ale-seasoned barrels, was released globally in December 2017, after an experimental release in the Irish market. Jameson Caskmates now sells 200,000+ cases a year and experienced volume growth for the brand of +110% and value growth of +103% in 2017 and is exported to 40 markets. Following collaborations with Distillers has launched limited editions of Jameson Caskmates aged in local craft-beer barrels in markets such as Australia and the USA.

Teeling has been active in the use of unique barrels [Calvados, Sauternes, Carcavelos and White Port] not used previously for Irish whiskey. Different malting techniques and different strains of barley are also used by distillers to develop different products. Slane Distillery has developed systems to recycle the waste hot water from the stills to heat the castle.

Other examples of whiskey company innovation include:

- Walsh Whiskey Distillery are producing the world's first organic Pot Still whiskey
- A number of Irish whiskey distilleries are experimenting with rye with a view to the North American consumer
- Tullamore D.E.W are using Irish wheat to produce grain whiskey.

Process innovation is significant in the drinks industry.



Innovation in public houses

Public houses have been innovative in responding to market challenges. A recent survey of publicans for the Support Your Local campaign asked what measures, if any, have been taken the Year" at the Irish Pub Awards. In in the past three years to enhance the business. The responses indicate a very substantial level of activity to enhance the business. 660 publicans responded to the survey. Of these:

- 73% refurbished their premises
- 49% enhanced their entertainment offering
- 41% enhanced their food offering
- 70% made use of social media for marketing purposes
- 46% developed an increased role for functions and special events

Over the longer term, the public houses have substantially improved their food and coffee offering. Many have developed a better wine experience. The figures indicate that while many pubs are engaged in innovation there is also a substantial number that are not. This is mainly determined by size, location and commercial viability.

These results are comparable to earlier data from the 2009 Survey of Licensed Premises in Ireland. That source reported that, over the past five years, many public houses and other licensed premises had been innovative and active in improving their business. 43% had provided more entertainment, 19% had introduced prize draws, 78% had refurbished, 44% had improved the food offering and 57% had devoted more effort to advertising.

22

The acceptance of innovation as a core element of operating a public house is evidenced by the inclusion of a category of "Innovative Pub of addition, there are regional innovation winners. The launch of the awards in 2017 is itself recognition of the appreciation of the need for excellence and innovation in the current operation of pubs.

The categories include best food pub, best music pub, best local pub, best tourist pub, best outdoor space, most innovative pub, outstanding customer service, as well as the overall pub of the year. The 2017 Innovative Pub of the Year was The Roadside Tavern, Lisdoonvarna, Co Clare. Among its innovative features are:

- Only Irish pub to offer its own fruit beer made from local ingredients
- Established its own craft brewery
- Has largest charcoal oven in Ireland which allows diners to watch the cooking
- High-quality cooking demonstration facilities
- Founder member of the Burren Eco Tourism Network.

The Dublin regional winner for innovative pub in 2017 was The Jobstown House in Tallaght which made extensive use of creative social media campaigns to boost trade including a "Manneguin Challenge" video which was viewed 75,000 times and a "Carpool Karaoke" video involving local people and staff which was viewed 34,000 times.

Other innovative activities reported in the 2017 awards included:

- Top social media bar with over 90,000 Facebook fans
- High-end WiFi system
- Facebook counters on the walls
- Customised phone charging facilities
- Lava stones for cooking
- Extensive tequila menu
- Strawberry, mint and rosemary garnishes
- "Pull your own pint" competition and hurling lessons for tourists
- Whiskey tasting nights from a stock of 100 whiskeys

Along with other hospitality and retail enterprises, a large portion of the pub sector has embraced modern technology such as contactless payments, quality control, sensors, and process controls. The provision of gas to pubs and other on-licensed premises has undergone significant technological change with remote seller monitoring of supply and local gas mixing facilities.



Innovation in off-licences

The independent and multiple off-licence sectors have been characterised by the usual retail innovation activity in terms of adoption of technology. In addition, the independent sector has promoted innovation and excellence among its members through the NOffLA Off-Licence of the Year Awards. These awards include categories for specialist wine off-licence, specialist beer off-licence, specialist spirit off-licence, best food retailer, best customer service award, online trainee and responsible trader award.

The product offerings in all categories, but especially in wine, have been characterised by increased range and variety, improved service, and increased consumer knowledge partly assisted by wine appreciation education programmes by off-licences and wine importers. For example, the 2018 Dublin winner, Martin's Off Licence [Fairview] stock close to 100 different types of gins and well over 200 different types of whiskey.

Several independent off-licences have diversified into catering/party provision. NOffLA provides a 'Responsible Trading Certificate' (RTC) to respond to the implications of the liquor licensing laws, the increase in court cases involving off-licences, and the increase in secondary purchasing.

In 2012 NOffLA's e-learning programme won the 'Most Innovative Use of Technology' award at the IITD National Training Awards. NOffLA also provides craft beer and cider appreciation training.

Some off-licences have also brewed their own collaborations with suppliers, including McHugh's off-licence, who worked with Kinnegar Brewing and Independent Brewing to form RoadTrip IPA, Extra Stout and Whiskey Barrel Aged Stout.

Some enterprises have developed walk-in facilities, including Higgin's walk-in cold room, and Jus De Vine's walk-in wine cellar to enhance the purchasing experience. NOffLA recently launched an online wine training programme for it's Gold Star Award winners. An online general wine course by grape variety is currently being developed.

Excellence in the field of wine retail in the off-licence sector is acknowledged by the Sunday Business Post Gold Star Awards.

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Business diversification into visitor centres

The drinks industry has been notable 2016. In recent years there have for its diversification into visitor centres. While this was begun many years ago by Guinness Storehouse and the Jameson Distillery Bow St, recent years have seen a substantial increase in their number, particularly in the whiskey sector, and in their economic impact.

At present the Guinness Storehouse is the largest fee-paying visitor attraction in the country and Jameson Distillery Bow St is the world's most visited whiskey brand home. These have greatly improved the Irish tourism offering. 2017 data are available for the larger visitor centres. The Guinness Storehouse was the largest fee-charging visitor attraction with 1,711,281 visitors, followed by the Cliffs of Moher [1,527,000], Dublin Zoo [1,264,300], the National Aquatic Centre [1,099,756] and the Book of Kells [983,410].

Fuller details are available for additional drinks-related centres for 2016. As in 2017, the Guinness Storehouse was the largest feecharging tourist attraction in 2016 with 1,647,408 visitors. Second in the ranking was the Cliffs of Moher with 1,427,166 visitors. Third was Dublin Zoo with 1,143,908 visitors.

The Old Jameson Distillery, now renamed Jameson Distillery Bow St, which was closed from September for refurbishment and development, was ranked 19th in the top 20 attractions, with 269,000 visitors. The Jameson Experience in Midleton attracted 125,000 visitors in

been three major new drinksrelated visitor centres: the Teeling Whiskey Distillery, the Smithwick's Experience, and the Irish Whiskey Museum.

The 2016 visitor numbers for drinksrelated visitor centres were:

- Guinness Storehouse [1,647,408]
- Jameson Distillery Bow St [269,000 – closed from Sept 2016 to March 2017 for redevelopment]
- Jameson Experience Midleton [125,000]
- Teeling Whiskey Distillery Dublin [96,000]
- Kilbeggan Distillery Experience [68,000]
- Irish Whiskey Museum (56,000 refers to 2015]
- Smithwick's Experience (55,300)
- Tullamore D.E.W. Visitor Centre [37.000]
- Dingle Brewing (8,000)

The Guinness Storehouse has topped the list of fee-charging visitor attractions every year since 2008 except for 2010.

The drinks industry visitor attractions are particularly important in overseas tourism. The large majority of visitors to the drinksrelated visitor centres were from overseas.

While 2017 data on visitor numbers are not yet available for all the centres, there were 811,000 visitors to 12 Irish whiskey distillery visitor centres in 2017, up 11% on 2016. Five tourism strategy envisages Ireland more whiskey visitor centres are expected to have opened in 2018.

The Jameson Distillery Bow St underwent an €11 million redevelopment in 2016/17. Diageo opened the Smithwick's brewery in Kilkenny as a state-of-the-art visitor experience in July 2014. This is modelled on the Guinness Storehouse approach. In addition the Irish Whiskey Museum was opened in Dublin in August 2014.

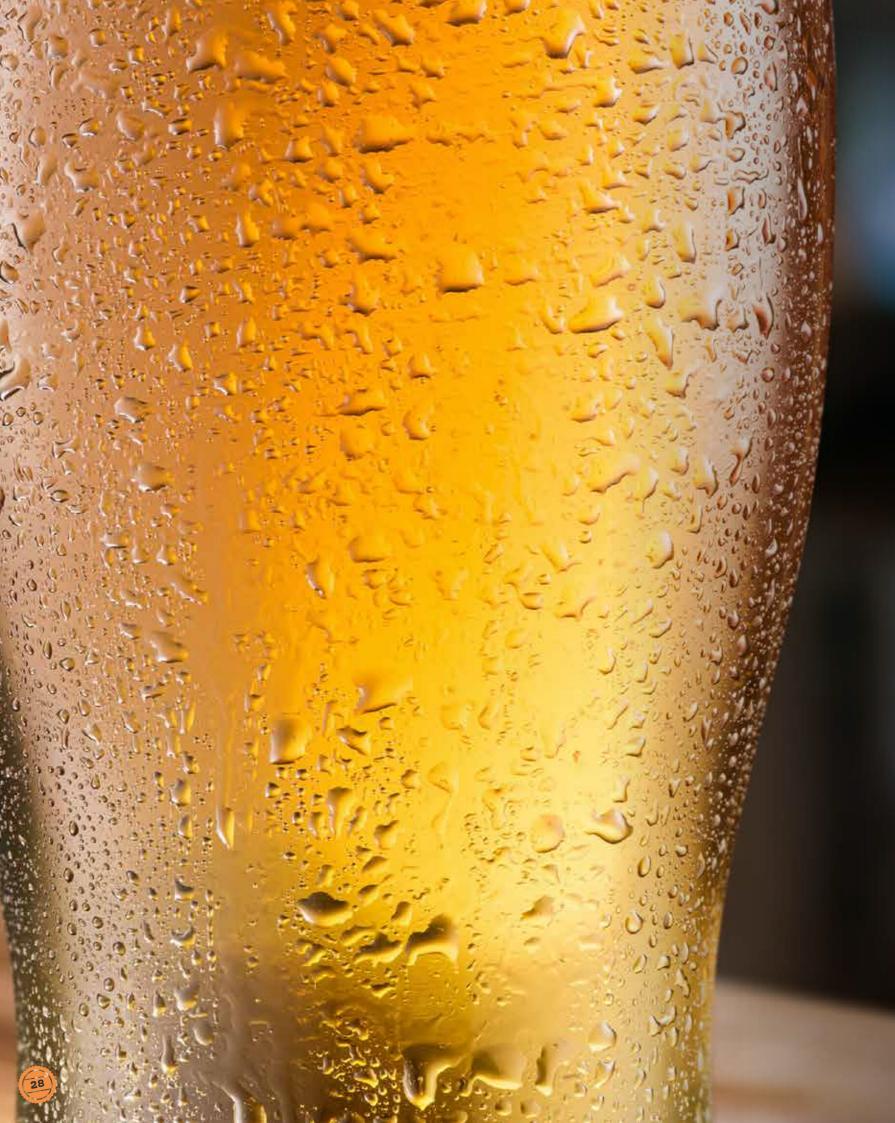
Other very recent, or coming, whiskey visitor centre-related developments include Dingle Distillery, Connacht Whiskey Company, Teeling Distillery in Dublin, Boann Distillery in Louth, Shed Distillery in Drumshambo, Walsh Whiskey in Carlow, Clonakilty Distillery, and West Cork Distillers and Pearse Lyons Distillery in Dublin. In 2017 Diageo announced a €25 million investment in a new whiskey distillery and visitors centre at St James's Gate. Diageo also announced in July 2017 a €16m investment in Dublin's Guinness Storehouse, including a doubling of the capacity of its rooftop bar.

27

Whiskey-related tourism has increased substantially over recent years and has large growth potential. The Irish Whiskey Association's becoming the world leader in whiskey tourism by 2030 with a potential of 1.9 million visitors. Overall, the visitor centre concept is a very substantial business diversification innovation by the drinks industry. Other tourismrelated innovations include the Whiskey Trail and the intended Gin Trail.

In a survey of 50 microbreweries, eight already have a visitor facility in place and a further 36 intended to develop a facility on the enactment of the Intoxicating Liquor (Breweries and Distilleries) Bill 2016 which allows production facilities to sell their own products on site. Only six of the 50 did not intend to develop a visitor facility or did not know (Bord Bia 2018].

The 2018-2023 Failte Ireland Food and Drink Strategy notes that Fáilte Ireland will strive to ensure microbreweries and distillery experiences are integrated into the overall food and drink strategy. It also notes that Ireland has made significant strides in recent years in strengthening the breadth and quality of its food and drink offering.



Entrepreneurial resource in drinks industry

The drinks industry is a very large source of entrepreneurs because it is primarily populated by very many small enterprises which are operated by owner-entrepreneurs. This is also true of the wider hospitality sector, including restaurants and hotels.

For public houses the CSO Annual Services Inquiry reports a total of 6,552 enterprises in 2015 with an average size of 6.2 persons employed including both full and part-timers. This represents an entrepreneur stock of over 6,000 persons.

For the wider accommodation and food services sector covering hotels, public houses and restaurants, small enterprises are dominant with a consequent positive impact on the entrepreneur numbers generated by the sector. 81% of enterprises employ less than 10 persons. The large number of small enterprises increases 3,367 wine off licences and 2,388 the number of entrepreneurs and the wine on-licences. The great overall entrepreneurial contribution of the sector.

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Overall in the wider hospitality sector there are:

- 18,336 enterprises
- 6,327 enterprises with one person employed
- 8,514 enterprises in the 2 to 9 persons class
- 1,819 enterprises in the 10-19 persons class
- 1,088 enterprises in the 20-49 persons class
- Only 558 enterprises in the 50-249 persons class
- Only 30 enterprises in the 250 persons and over class.

The Revenue licences data also illustrate the large number of entrepreneurs in the sector. Apart from the 137 manufacturing licences, in 2017 there were 956 dealer licences, 8,081 publican and hotel licences, 475 special restaurant licences, 1,927 spirits off-licences, majority of these are small owner/ entrepreneur managed enterprises.



Future innovation, entrepreneurship and growth

This report has shown that the drinks industry is characterised by a substantial level of innovation and entrepreneurship in terms of new venture formation, business diversification, a very high level of product innovation, substantial process innovation and a large stock of entrepreneurs.

Innovation occurs in both the manufacturing and distribution activities of the drinks industry. This level of innovation reduces import penetration, increases exports, supports tourism, and increases consumer choice and utility. It increases economic activity and employment and is widely spread on a geographic basis which enhances regional development.

There should be two elements to the public policy focus concerning drinks-related innovation:

- Support continuing high levels of innovation across the range of drinks sectors
- Ensure that the maximum level of economic spinoff arises from previous and future innovation.

These innovation developments have occurred despite the very high levels of alcohol excise in Ireland, even allowing for the reduced excise on microbreweries. However, the next stage of potential development promises to be difficult and requires substantial financial investment as evidenced by the lessons of Ireland's long-term industrial development. Historically, Irish entrepreneurs and policymakers/development agencies have found it difficult to grow the scale of small internationally competing enterprises. There is a need to transform small breweries and distilleries into medium and large enterprises which will be sustainable in international markets.

We need to significantly improve the export performance of our drinks enterprises. The export performance of drinks has very substantial achievements and, while many enterprises have contributed to them, the main source of success has been from large established drinks companies such as Irish Distillers (Jameson) and Diageo (Guinness and Baileys). These will continue to increase exports, but a substantial contribution will be also be required from the smaller, newer breweries and distilleries.

Exports of drinks do not bear the burden of high Irish excise levels and, it might be argued, that export performance would be unrelated to Irish excise levels. However, drinks enterprises which export also supply the domestic market which does carry the high excise burden and the high excise. In most cases, a strong domestic market position is needed to support their export diversification. The UK is a natural first export market for small Irish exporters, but Brexit will increase the difficulty of accessing this market which adds to the difficulty in developing the export side of new small drinks exporters. American trade policy, too, increase the difficulty of selling in that market. In addition, we need to ensure that Ireland remains attractive to the Ireland-based global drinks companies for continuing investment and innovation activities.

All sectors face difficulties in generating innovation and growth. These difficulties include ensuring good quality management, ensuring an innovative culture in enterprises, having ambitious objectives, profitability, financial resources to finance innovation where there is no quarantee of success, a supportive policy environment, technical skills and knowledge. The drinks sector is no different in this regard, and like other sectors, it can benefit from the range of public policy supports for innovation and business development.





It is outside the scope of this report The drinks sector faces very high of innovation. However, the drinks industry also faces two additional sector-specific difficulties relating to innovation which arise directly from Government policy, regulation and high excise taxes.

The sector faces a particularly high degree of regulation. Fitzgerald (2015) and DKM (2017) argued that some provisions of the new Alcohol Bill such as those on labelling, advertising and marketing and alcohol sponsorship would impose additional costs on producers, especially on small local producers and new market entrants, and would reduce the attractiveness of Ireland for the launch of new products by the larger international drinks companies located in Ireland.

to consider the general determinants excise taxes which generates a large difference between the market price of a product and the return to the producer and distributor. This is the 'excise wedge'.

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33

Almost all sectors face a 'VAT wedge' but only a very small number face an additional excise wedge. The excise wedge diverts financial resources from the enterprise to the Exchequer and away from enterprise investment. This applies to all sectors of the drinks industry including manufacturers and onlicences and off-licences.

There is a strong case to be made for a reduction in the excise wedge in light of the drinks growth targets and drinks-related tourism targets, and the need for ongoing innovation.

In summary

The drinks industry, while being a long-established and traditional industry, displays a high degree of innovation and entrepreneurship, especially in new venture formation with very many new breweries and distilleries, product development, business diversification and number of entrepreneurs.

In recent years the drinks industry has been characterised by a very high rate of new venture formation compared with total manufacturing.

All sectors and enterprises face difficulties in generating innovation and growth. The drinks sector is no different in this regard and like other sectors, it can benefit from the range of public policy supports for innovation and business development.

However, the drinks industry also faces the additional sector-specific difficulty relating to high excise taxes which generate a large difference between the market price of a product and the return to the producer and distributor-the excise wedge.

In light of the growth expectations of the broader drinks industry [manufacturing and tourism-related], there is a case for reducing the excise wedge.

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