



# GUINNESS®

## **A Case Study on Guinness**

Retaining Guinness as the World's Leading Stout Beer



**Principles of International Marketing**

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## 0. Introduction

Established in 1759, Guinness has since its origin been a highly respected premium stout desired to be enjoyed globally. Famous for its Irish heritage and signature dark brown colour, the king of black beers is brewed in more than 50 countries around the world and enjoyed in more than 150 worldwide. As the global market leader, Guinness has managed to conquer most markets around the world and has been crowned the most famous stout beer in the world. The now worldwide leading drinks enterprise and Fortune 500 company, Diageo, took over in 1997 when Guinness merged with Grand Metropolitan. This has further solidified Guinness at the top spot. However, in recent years, the downfall of Guinness' dynasty might have begun as market shares starts to erode, leaving Guinness with no option but to increase its prices. Perhaps branching out to previously unexplored markets is the key to overcoming this challenge? In this paper, I will examine how Diageo can react to this challenge in its quest of retaining its crown jewel, Guinness, as the king of stout for centuries to come. The most recent financial numbers available have been used to provide the groundwork for this case. This allows for the most up-to-date recommendation on how Guinness should launch its new product.



## 1. SWOT Analysis

The SWOT analysis highlights the internal and external factors associated with the Guinness brand. Facing opportunities and threats in the global stout beer market, Guinness must leverage its strengths and try to minimize its weakness to maximize its market opportunity in its pursuit of staying as the market leader in the distant future. Based on the analysis below, an evaluation and assessment of the current market position of Guinness have been conducted. Because of the overwhelming amount of data gathered in the SWOT analysis, only the most critical factors will be further elaborated upon:



Figure 1: SWOT-Analysis (Diageo, 2022; Forbes, 2019)

### 1.1 Internal factors

Guinness is the world's leading stout brand, sold in more than 150 countries (Diageo, 2022). Having been exporting from a very early age, one could argue that Guinness is a predecessor to the Born-Global phenomenon. Decades of global advertising have further solidified its leader position, accumulating brand equity, which has led to low price sensitivity among consumers. A strong presence in most countries ensures a steady revenue stream, which is backed up by 250 years of scale economies and serves as a hedge toward economic instability within single markets. Guinness' partnership with other breweries in joint ventures further lowers risk and allows for knowledge transfer, strategic synergies, and scale economies. Supported by the Fortune 500 parent company, Diageo, Guinness likewise has unique access to knowledge from the vast network of premium beverage producers in its brand portfolio alongside large amounts of capital.

However, due to the nature of the product, Guinness is competing in a very niche market which limits the growth potential significantly. With the bitter taste, its signature draught beer is highly vulnerable to changes in consumer preferences. For this reason, it comes as no surprise that sales have started declining in most

markets as the younger segment increasingly is moving toward milder substitutes. Guinness has so far combated this by increasing prices, but it is unsure how long it can keep milking the same product.

## 1.2 External factors

African countries solely account for five of Guinness' ten largest markets by volume. As the African countries are expected to see significant growth in the short term, this region has, without a doubt, high potential. Synthesizing CSR activities with their regional operations could serve as an excellent opportunity to increase brand awareness and obtain goodwill, further elevating the brand above its competitors. The technological evolution must also not go unnoticed: In the more developed markets, consumers are actively engaging on social media more than ever. Thus, the web 2.0 provides nearly limitless opportunities to market and promote the brand.

Conversely, Guinness also faces several significant threats. With the younger segment increasingly substituting stouts for lighter beers and FABs, Guinness faces a challenge in retaining its customers. Furthermore, the rise of microbreweries has the potential to further erode Guinness' market shares (Forbes, 2019). The impact of regulations must also not be underestimated. With the ban on indoor smoking in public areas in the UK, many previously loyal consumers now move away from on-trade drinking. Diageo has so far successfully overcome this challenge by launching the Guinness Surger; however, they must keep staying ahead of the game and develop further creative solutions if they wish to overcome these threats long term.

## 1.3 SWOT Summary

Guinness has several internal strengths associated with its legendary brand; however, these lie in the shadow of the niche nature of the stout beer, which poses a risk towards changing consumer tastes. Threatened by the societal trends and dynamic nature of the competitive environment, Guinness must utilize its opportunities to adapt. Here, a conversion strategy might be the play, whereby Guinness can turn a threat into an opportunity.



## 2. MACS

In reaction to the abovementioned challenges, Guinness seeks to launch a new flavoured beer. Six countries have been chosen through preliminary screening. To assess which of the countries best suit market expansion for Guinness's upcoming product, the MACS approach is applied, providing a weighted evaluation based on market attractiveness and competitive strengths. It is assumed that the new product will be a flavoured stout, and thus the firm will be mainly competing in the same market as prior (specifics are elaborated upon later).

### 2.1 Elaboration on market attractiveness

In determining market attractiveness, eight weighted criteria were chosen to describe various aspects of the market. The two highest weighted criteria, both weighted at 20, were total consumer expenditure on beer and psychic distance from the home market. The importance of total expenditure on beer lies in that it serves as a good indication of the possible sales figures Guinness could achieve if its launch proves successful. The beer market was chosen since country-specific metrics on the stout market were unavailable. Psychic distance is another critical factor, especially when deciding to launch a new

	Weight	USA	Chile	Germany	China	Japan	Czech rep
Ease of doing business (closer to 100 the better)	5	30	5	25	15	20	10
GDP per capita, PPP adjusted	15	90	30	75	15	60	45
Legal drinking Age	5	5	30	30	30	10	30
On-trade Volume of beers sold (%)	10	30	20	50	60	10	40
Consumer expenditure on beer (\$USD pr. person)	15	90	30	45	15	60	75
Total consumer expenditure on beer (\$USD million)	20	120	20	60	80	100	40
Beer market growth (2018-2019)*	10	40	10	50	30	60	20
Psychic Distance from home market to "target" market	20	120	40	100	60	20	80
<b>Total</b>	<b>100</b>	<b>525</b>	<b>185</b>	<b>435</b>	<b>305</b>	<b>340</b>	<b>340</b>

	Weight	USA	Chile	Germany	China	Japan	Czech rep
Country-of-origin effect (attitude towards Irish products)	10	20	10	50	30	60	40
Product fit to market demands	15	90	30	60	45	75	15
Brand awareness in specific market	20	120	20	100	40	80	60
Psychic Distance from home market to "target" market	15	90	30	75	45	15	60
Current market share	10	60	10	50	20	40	30
Local market knowledge	15	90	15	75	45	60	30
Perceived Brand value	15	60	15	90	30	75	45
<b>Total</b>	<b>100</b>	<b>530</b>	<b>130</b>	<b>500</b>	<b>255</b>	<b>405</b>	<b>280</b>

	USA	Chile	Germany	China	Japan	Czech rep
CS	525	185	435	305	340	340
MA	530	130	500	255	405	280
	<b>1.055</b>	<b>315</b>	<b>935</b>	<b>560</b>	<b>745</b>	<b>620</b>

Table 1: MACS-analysis (see appendix for raw data and tables)



product. It requires adaption of the marketing mix, and here, it is crucial to keep cultural aspects in mind. Psychic distance was chosen in relation to Ireland. While Diageo is not based in Ireland, Guinness nevertheless is a brand synonymous with Irish tradition and values and thus inherits an Irish Country-of-Origin effect. Therefore, it makes sense to compare the psychic distance keeping this in mind. Other variables of importance are GDP per capita (PPP) and beer expenditure per person. GDP per capita is relevant in assessing how well Guinness's positioning as a premium brand fits the country's purchasing power. Per capita, beer expenditure further helps identify the potential revenue and expected CLV. The legal drinking age, ease of doing business, on-trade volume and market growth are also essential factors that have been considered. Note that for market growth, the newest data was excluded due to the adverse effects of the pandemic on the world economy. Taking all variables into consideration, the US score highest, followed by Germany. Not surprisingly, developed countries, thanks to their high living standard and cultural familiarity, show the most significant level of market attractiveness.

## 2.2 Elaboration on competitive strengths

Similarly, seven weighted criteria related to Guinness' internal factors were also chosen. Here, the highest weighted criterion (20) is brand awareness. Seeking to launch a new product, it is vital that consumers know and have certain expectations of the brand. This allows the firm to achieve a pull- rather than push-effect and thus spend fewer resources on CRM. Instead, Guinness can direct its focus toward R&D to improve its competitive advantage against competitors. Weighted at 15 is perceived brand value, indicating that Guinness not only needs to be recalled by the consumers but also needs to be associated in congruence with their premium positioning. Equally weighted are metrics such as local market knowledge, product fit and psychic distance. Markets differ greatly worldwide, often requiring adaptations of the marketing mix. "Product fit" describes the needed level of adaption, with the higher the score, the minor adaptation required. This metric was based on the countries' ALP and AGP. Overall, the US scores number one on all but two metrics; perceived value and country-of-origin (COO) effect. Here, COO should be seen as propensity to buy local contra global brands. Americans are not as open-minded toward global products and prefer products "Made in the US". Furthermore, it has been assumed that long-term oriented (LTO) cultures such as Japan, Germany and China show significant preferences towards indulging themselves with a quality beer rather than drinking the cheapest one available. Even though China scores high on LTO, Guinness is relatively unknown in China. Taking all variables into consideration, the USA still comes out on top scoring highest, with Germany in second place once again.

## 2.3 Overall market recommendation

Overall, both USA and Germany are seen as highly attractive A-countries in which to launch the new product. Japan is right on the edge but should also be considered for the future. The B-countries are the Czech Republic and China. These two countries might be relevant in the future, especially China, with its growing middle class and its unprecedented large population size. However, being a premium brand, the flavoured beer will likely be too expensive for the average consumer at this stage. While both the United States and Germany are considered countries of great market potential, the analysis reveals that the US should be prioritized. Guinness should therefore seek to implement their new flavoured beer in the United States. The main difference between the two, lies in the market attractiveness, where the US surpasses Germany by a great amount. Guinness might consider launching

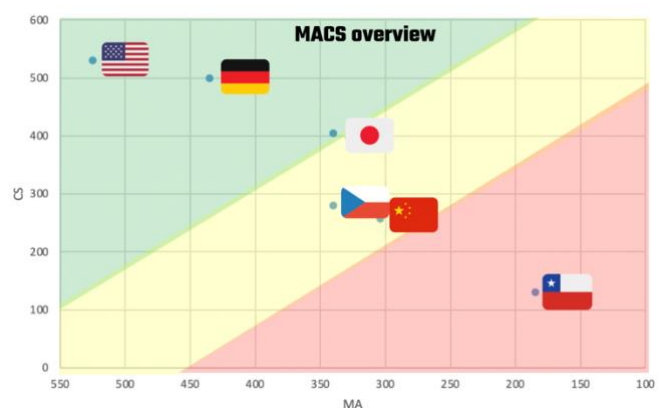


Figure 2: MACS positioning map



the new product in Germany after its launch in the US. Still, it must be noted that further local adaptation might be required to tackle the cultural differences. With Chile being ranked as a C-country, the firm should stay away from this market. The purchasing power and monopolistic dominance of Compañía Cervecerías Unidas (CCU) make this market unattractive for further expansion, in the near future.



### 3. Segmentation

The world market of stout beer is relatively niche, accounting for only 1% of the total beer market. With Guinness being the market leader globally in most regions, there is not too much room to increase its revenue. Introducing a new flavoured stout beer would allow for new opportunities where Guinness can capture previously unexplored segments of customers from parallel markets such as lighter beers and FABs. For this reason, the unique taste variant must target the right segment to achieve maximum exposure. Using segmentation, Guinness seeks to find potential customers with homogenous attributes who will respond similarly to its marketing mix. Segmenting based on a single criterion will likely result in a too broad and undefined segment where consumer needs and WTP do not synergize well.

For this reason, a multi-approach segmentation strategy is necessary. Note, for simplicity; only two segmentation types have been chosen. Synthesizing demographic and psychographic segmentation together will allow Guinness to direct its focus toward the appropriate consumers.



Figure 3: Segmentation variables

A fundamental threat is the trend of younger people moving away from bitter stout beer toward milder alternatives. Therefore, the new product should seek to mitigate this by being directed toward this segment, turning its weakness into a strength through a conversion strategy. Since the minimum legal drinking age is 21 in the US, the targeted segment should be 21–35-year-olds. While females are generally assumed to find the flavoured alternatives most attractive, stout consumers are predominantly men (Graefe & Graefe, 2021). As a result of this ambiguity, no considerations toward gender-based segmentation have been made. In line with Guinness' heritage as a premium brand and inelastic consumer base, Diageo should position the new beer in the same price range as other products in its portfolio. For this reason, the products should be targeted toward mid- to high-income consumers. This also retains the premium positioning and functions as a heuristic cue toward high product quality. Guinness should further include psychographic criteria. The young segment is generally associated with hedonism. These consumers want to get the most out of their life and have a high willingness to pay (WTP). Guinness should appeal to the materialistic consumer with a tendency towards conspicuous consumption. Among these consumers, Guinness would be highly appreciated. According to (Statista, 2019), ninety per cent of 18- to 29-year-olds use social media. This is significantly higher than in older age groups. For this reason, it can further be assumed that the young segment will fit great as early adopters, highly adaptable to new trends in society. To them, an alternative flavour is seen as exciting and refreshing. Another term that has been highly relevant in the digital age is fear-of-missing-out (FOMO). Appealing to the abovementioned criteria, Guinness will have a clear plan of who to target and can thus start adapting its marketing mix. Specifically directing promotional strategy toward young SoMe users seem highly official.



## 4. Choice-Based Conjoint Analysis

### 4.1 Market share and total utility

The calculated total utilities for the given products and expected market share distribution for each alternative are shown to the right. “Guinness 2” received the highest total perceived utility of the configurations (10.6)

	Guinness 1	Guinness 2	San Miguel 1			
Brand	3,5	3,5	2,5	2,5	3,0	-
Flavor	2,8	2,1	2,1	0,0	2,8	-
Alcohol	2,0	0,0	2,2	0,0	2,0	-
Organic	0,0	2,5	0,0	2,5	0,0	-
Price	0,0	2,5	2,5	4,0	2,5	-
Total utility	8,3	10,6	9,3	9,0	10,3	6
EXP. Util	4023,9	40134,8	10938,0	8103,1	29732,6	403,4
Prob. for G1	7,56%	-	20,56%	15,23%	55,89%	0,76%
Prob. for G2	-	44,94%	12,25%	9,07%	33,29%	0,45%

Table 2: CBC-analysis (see appendix for raw data and tables)

based on its components. The rest of the total utilities are also present, along with the given no-choice option. Based on the CBC analysis, one can conclude that it would be favourable for Guinness to choose option 2. Here, Guinness would receive a market share of approximately 45%, making Guinness the market leader. This is significantly higher than the negligible market share of 7.6% it would receive using its other alternative. “Guinness 2” should, in other words, be interpreted as the configuration combo which will see the most significant success once implemented. It shall, however, be noted that changes in costs are not considered. Thus, we cannot be certain if the added utility is worthwhile in relation to the increased production cost. The firm should expect increasing variable and fixed costs (i.e., material costs, switching costs to accommodate new output and R&D spending). However, assuming both options are equally profitable, Guinness should choose option 2.

### 4.2 Willingness to pay (WTP)

Using the formula below, the Willingness to Pay can be calculated for organic vs. non-organic products:

$$\frac{2,5 - 0}{WTP_{organic}} = \frac{6 - 0}{5 - 1,8} \rightarrow WTP_{organic} = 2,5 * \frac{3,2}{6} = 1,3333$$

Based on the calculation, we can conclude that consumers are willing to pay approximately 1,33\$ extra for an organic stout beer compared to the non-organic alternative. This is quite helpful information for Guinness, as it can compare the added WTP to the implementation cost and potentially increase its margins. Likewise, the WTP for (b) tequila vs. strawberry flavour is calculated as:

$$\frac{3 - 2,8}{WTP_{Strawberry}} = \frac{6 - 0}{5 - 1,8} \rightarrow WTP_{Strawberry} = 0,2 * \frac{3,2}{6} = 0,1067$$

This can be interpreted as consumers are willing to pay 0,1067 more for a beer with strawberry taste contra one with tequila. Compared to the organic WTP, we can conclude that the willingness to pay for organic beer is greater than going from tequila to strawberry. With this insight, Guinness should prioritize making organic alternatives to its beer portfolio. Assuming the management at Guinness seeks to maximize profits, the R&D efforts should be centred around bringing more organic products into their portfolio. It is, however, imperative that Guinness considers all relevant costs regarding changing its marketing mix to accommodate the new product. Generally speaking, a firm’s marketing mix is interrelated, and thus developing a new product will also lead to added costs and considerations concerning the remaining 3P’s. The WTP increase means an adaption of price, but concerns regarding marketing expenditures, among other things, should also be considered.



## 5. Competitive strategy

### 5.1 Guinness' competitive strategy for its new product

Society is changing, and so is the consumer preferences. Not reacting or simply reacting too late can turn out disastrous for a firm. Examples of such consequences are Blockbuster and Nokia, both of which failed to adapt to their surroundings. Therefore, it is crucial that Guinness takes its threats seriously and enters the market with the right strategy. In the competitive landscape, Guinness is the lead producer of stout beer and thus has a significant market share already. However, by launching a new product that goes beyond the typical characteristics of a stout beer, Guinness can be expected to compete on additional fronts with this new product. Positioned as a hybrid between a stout beer and FAB, Guinness will have to take on more rivals than ever. American giants such as Bud Light, Budweiser and Miller have a significant grip on the light beer market, which means intense competition. As seen in figure 4, the proposed product will move Guinness' position toward lighter taste while retaining its premium quality. However, if successful, Guinness will be able to reap the rewards of previously unexplored markets, which can help the company get back on track after its declining sales. By appealing to new segments and tweaking its marketing mix to be seen as a new and exciting market player, Guinness can leverage all its experience from the stout market to gain a competitive advantage over its competitors. Furthermore, one must keep in mind that Diageo, the parent company, has great insights into these parallel markets. Information that can prove to be highly useful for market entry. The conceptual map shows the positioning of the new product in comparison with regular stout and lighter beer in the US. For these reasons, Guinness must deviate from its usual strategy of differentiation leadership where it pursues a position as global market leader, and instead adapt its approach to fit the more niche notion of the product. It is recommended Guinness uses a differentiation focus strategy. Committing to a differentiation focus, Guinness can harness valuable knowledge in the niche market, which it can transfer back and leverage in its home market.

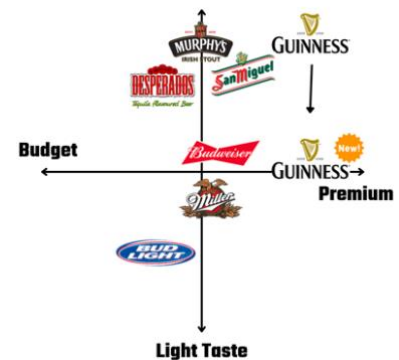


Figure 4: Perceptual map

### 5.2 Marketing mix adaption

Pursuing a competitive strategy different from its usual strategy, it is evident that Guinness's marketing mix requires tweaking. But to what extent? A new flavoured alternative will be launched, requiring an adaptation from the original product mix. Furthermore, entering new and highly competitive markets, Guinness also needs to take on additional measures to promote and launch the product successfully. For this reason, a dual-adaptation strategy is suggested. Over the years, Guinness has obtained a high level of brand equity. Guinness is not just a regular beer -It is an experience. In addition to its rich dark taste, there is just as much emphasis on the experience and enjoyment. The focus is put on spoiling yourself with a quality beer rather than simply consuming it to get drunk quickly. A great example showing the extent to which Guinness is willing to go in order to bring the full signature Guinness-experience to its consumers is "Guinness Storehouse", a former brewery that in 2000 got transformed into a seven-story museum (Guinness, 2022). Because of the substantial brand equity and its positive COO-effect, Diageo should keep the legendary Guinness name using the umbrella branding strategy. The perceived global-ness (PGB) has been one of the critical factors in Guinness's success. Therefore, the product brand mix should be based on Local Product/Global Brand. While trying to be trendy by launching an experimental new beer, it is vital that Guinness doesn't forget its heritage and brand image, which it has



spent billions building up. Launching the new beer, the following marketing mix is recommended:

**Product:** By now, it is evident that there will be necessary changes to the marketing mix. Based on the CBC analysis, assuming that each taste costs the same to implement, the flavoured stout should be blended with strawberry flavour. Here it should be emphasized that while it is a new taste, it is the same old quality. The product will be named “Guinness Viridiana”. Derived from “*Viridis*”, meaning green in Latin, the name emphasizes its new rich, fruitful taste and sustainable vision while still being part of the Guinness family. The colour should be kept in the familiar dark tone to complete the experience. Based on the proposed positioning as a premium beer, efforts should be made to ensure the product has a USP beyond the core benefits. Additional benefits are achieved by the brand’s premium positioning, creating a sense of “coolness” and showing off. This would help appeal to the conspicuous behaviour of the segment. The core benefits would be similar to the regular Guinness stout; great taste and the signature nitrogenated creaminess. On top of this, the product would only come in an organic version to align with its name. Being organic, WTP is increased, and the product should find great appeal among the young target segment, which is becoming increasingly climate aware. Packaging should be kept minimalistic, using earth tones, and the beers should only be produced in reusable glass bottles, which further contributes to sustainability. Launching a sustainable product would further contribute to positive public relations and through increased focus on CSR, an opportunity mentioned in the SWOT analysis.

**Price:** The price strategy involves price skimming, which entails pricing high early in the PLC and then gradually reducing prices over time. This is seen as the best pricing strategy as it provides rapid amortization of capital investments. Using consumer-based pricing, setting prices according to the high WTP and having relatively inelastic demand among consumers, allows Guinness not to lose valuable consumers while maintaining a premium price. As the young segment is seen as early adopters, the product should have no problem racking in high revenues even during the early stages of the product life cycle (PLC). Taking full advantage of the WTP, the price for Viridiana should, based on the CBC analysis, be placed roughly \$1,5 higher than the regular. This accounts for the  $1,33 + 0,1$  calculated by the CBC analysis along with an additional 0,07 thanks to synergy effects which stems from the congruency between name, flavour and product traits. Previously, the stouts were estimated to be priced at around 2.5\$. With the new WTP in consideration, the Viridia should have an MSRP of \$3.99. This number seems more desirable than pricing at \$4 because of psychological pricing. Note that the wholesale price is lower at 3,19\$. However, while the industry wholesale contribution margin is 0,32, Guinness’ high brand equity lowers the bargaining power of Porter’s forces, reducing it to 0,2.

**Place:** Guinness should have direct involvement in the production of the Viridiana, making sure that correct materials are used, and everything goes as planned. This is especially important when launching a sustainable product, where the potential backlash of not living up to the sustainable promises can destroy future profits and hurt brand equity. As far as sales channels go, they should be kept relatively wide, using selective distribution. Viridiana will be available in several larger retail stores to maximize profits, as it should not be the sheer level of scarcity which retains the brand’s premium position, but rather, the taste, quality, and price level. The Guinness Viridiana should however not be available in small kiosks and through local importers, as this is not where the target segment is expected to shop anyways. The focus of this campaign would be on off-trade-beer to mitigate the changing preferences, and thus it would not be available on-trade at this moment. However, if demand proves to be high enough, this direction could be further expanded upon. The length of sales channels should be kept short to avoid unnecessary mediators eating away the profit margins.



**Promotion:** With the ever-evolving web 2.0 and the increasing presence of social media in society, platforms such as Facebook, Instagram and Tik-Tok, provide near limitless opportunities for marketers to exploit. Especially Instagram is highly used among the consumer segment (Statista, 2020). Launching the new product through these channels will provide Guinness with a significant lead conversion rate from the get-go and appeal to the young consumers, all of which are highly engaged on such platforms. For premium brands, like Guinness, it is important to keep in mind that both the perceived ad and brand liking are higher if ads are shown through premium channels vis-à-vis non-premium channels. Therefore, Guinness should only advertise its products through reputable sites like NY Times, Vogue, and ESPN. This, however, significantly increases the cost of the proposed marketing campaign. Utilizing the reach of social media correctly, promotion has the chance of become an extraordinary strength for Guinness in the future.

Along with the increased social media presence, a large-scale launch campaign will be implemented. Centred around the Super Bowl-weekend, being one of the hottest advertising opportunities worldwide, only beaten by the Olympics, the exposure would be massive (CNN Business, 2022). Because Guinness is launching a new product into a new market, through a diversification strategy,

### Break Even Modelling

	Cost (\$USD)	Justification for measure
R&D costs	- \$	Strawberry flavor & organic option already developed
Label and package design	50.000,00 \$	Industry standard for a packagign design project
Mass-media advertising	4.204.800,00 \$	Industry standard for packaged goods (24% of revenue)
30 second Superbowl ad	5.500.000,00 \$	2021 benchmark price
Marketing research	50.000,00 \$	Benchmark price for detailed marketing research project
Website makeover	100.000,00 \$	High-end industry standard for website makeover
Developing the super bowl ad	1.000.000,00 \$	
<b>(Cm) Total Marketing Cost</b>	<b>10.904.800,00 \$</b>	

### Contribution Margin

		Justification for measure
(Pc) End consumer retail price	3,99 \$	Old price was approx. 2.5€ -> WTP increased by 1.5€
(AVC) Variable cost per unit	1,50 \$	Old VC was approx. 1€ -> Now it has been assumed to increase by 0.5€
Wholesale contribution margin	0,20	Industry standards are 0,32, but Guinness has high negotiation power
(Pw) Price per unit (to wholesalers)	3,19 \$	Pc * (1- wholesale contribution margin)

### Profit Estimation

		Justification for measure
(Q) Annual sales (units sold)	5.488.721,80 Beers	R / Pw
(R) Revenue	17.520.000,00 \$	Based on estimate equal to 10% of Guinness stout US revenue in 2020
(VC) Variable cost	8.233.082,71 \$	Q * AVC
<b>(π) Annual net profit</b>	<b>9.286.917,29 \$</b>	R-VC (note fixed costs are not included as they are sunk)

### Break-Even

		Equation
Break-even quantity	6.444.917 Beers	Total marketing cost / (annual net profits / annual units sold)
<b>Break-even timeframe (months)</b>	<b>14,1 Months</b>	(Break even quantity / annual sales ) * 12

exposure and recall rate are two critical conditions to build a solid consumer base for future growth. As seen in Table 3, the total marketing expenses of such a campaign would be approx. \$10.9M, half of which is spent on the 30-second Superbowl ad. While such a budget might seem crazy, the commercial brings unprecedented exposure of almost 100 million viewers (Dixon, 2022). A relatively large development budget of \$1M has been added to make sure the advertisement lives up to the standard of Super Bowl commercials. Number-wise, the campaign seems well worth it, as 5.5M sales are expected to result from this campaign. Thanks to Guinness' high negotiation power with its buyers, wholesalers have a lower contribution margin, resulting in a revenue of \$3.19 per unit. Based on these figures, it will require approx. 6.5M sales and take roughly 14 months to recover the marketing costs and break even.

Overall, the launch of Guinness Viridiana will help build further upon Guinness' portfolio while also increasing brand awareness for its other products. If the product manages to reach its goal (revenue being 10% of the current Guinness sales revenue in the US), this might be just what it takes to bring Guinness back on track. If new consumers like the flavoured stout, perhaps they will try out the "original", too. Here, CRM is



## 6. BASS diffusion model

t	Innovators (t)	Imitators (t)	s(t)	S(t-1)
1	2.500	0	2.500	0
2	2.475	2.228	4.703	2.500
3	2.428	6.295	8.723	7.203
4	2.341	13.420	15.761	15.926



Table 4: BASS diffusion overview (See Appendix for complete calculations)

To calculate a sales forecast and determine the launch's success, the BASS diffusion model has been used. The BASS model predicts a diffusion pattern which is seen in Table 4. The coefficients are quite extraordinary, with a low external influence factor of  $p = 0,01$  and a relatively high internal influence factor of  $q = 0,9$ . This is significantly different from the optimal  $p = 0.03$  and  $q = 0.38$  suggested by Sultan, Farley, and Lehmann (1990). A low external influence factor means that the early stages will have relatively low levels of diffusion. Innovators and early adopters are scarce, but once the product picks up momentum, the internal influence factor of 0,9 will start to snowball, where imitation and word-of-mouth will take the market penetration to the next level. This is the exact opposite of what was predicted in earlier parts of this paper. Here, the segmentation approach specifically targeted young consumers with the opposite goal in mind: young people are adapting fast and they are not afraid to try out new products. Based on the given coefficients, the product launch would see a total of 31.687 customers after four years. Having 31.687 customers out of a total market of 250.000 customers translates to a market penetration of  $\frac{31.687}{250.000} = 12,67\%$ . This market penetration is relatively good, considering Guinness is entering a brand-new market and has to build its presence from the ground up. Penetrating 12.67% of the market is better than what was expected from the launch campaign, where 10% of Guinness' Draught revenue was targeted. However, the market size given of 250.000 potential consumers is significantly smaller than the expected market size for the new product in part 5.2. Only having 250.000 potential customers poses a significant constraint on the potential revenue. Even with an optimistic estimation, assuming every single reached consumer purchases 10 Viridiana stouts yearly, Guinness would still only gain a revenue of  $10 * 3,19 * 31.387 \approx \$1M$  in the period. This is significantly lower than the predicted revenue of 17.5M in the breakdown analysis above. With these numbers, it would take about 13 years to break even. This is not even accounting for discounted future profits.

In Conclusion, given the marketing budget proposed in 5.2 of \$10.9M, the marketing campaign would flop if not adapted in light of these new circumstances. Removing the Superbowl and simply going all-in on the SoMe efforts could be a viable alternative. Furthermore, Guinness should consider the possibility of entering a subsequent market once the diffusion has peaked (i.e. reached 50%). Based on the MACS analysis, a follow-up market with great potential is Germany. Entering this market when product diffusion in the US starts to deteriorate could help keep a steady and constant revenue stream. However, there is still a long way to go, as Guinness currently is only in the middle of the early adopter stage (see figure 6).

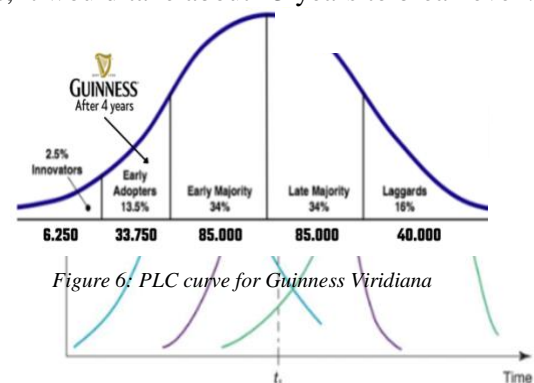


Figure 7: Multi-market diffusion

## 7. Establishing online channels

### 7.1 The strategic influence of establishing an online channel

Guinness intends to use the online channel in its pursuit of launching the Guinness Viridiana. This would affect both the distribution and communication strategies. In terms of distribution, Guinness has previously relied on third-party wholesalers buying large orders at a time. Moving from B2B sales and into the B2C market, Guinness must adapt its logistics and inventory management to fit these new changes. On the positive side, shortening the distribution channel and cutting out middlemen means even greater margins for Guinness. Going from a price-point of \$3.19 to \$3.99 implies a  $\frac{3.99-3.19}{3.19} = 25\%$  increase in revenue per unit sold, which is highly significant. Net profits per unit will be increased even further, assuming the same variable costs as before. However, implementing these changes will not be soft on capital as high fixed costs will be imposed

through marketing and warehouse adaption. Implementing Just-In-Time (JIT) inventory management can, however, minimize inventory and increase the level of logistic efficiency. This should be pursued.

With regards to the communication strategy, the increased online presence should be in the consumers' favour. Targeting young consumers with their ever-increasing online presence, e-commerce would be an excellent opportunity for further market expansion and reaching consumers with preferences toward purchasing products online. Building its website up from scratch and embracing the Guinness brand identity, Diageo can make e-commerce more experiential than the retail shopping experience. Including videos, perhaps even reviews from prominent influencers will further help boost sales. The current website, Guinness.com, is already very well-made, so building upon it would not require too much effort. Thus, launching an online distribution channel shouldn't be too difficult. Given the off-trade nature of Guinness Viridiana, it is easily adaptable for small quantity sales. Overall, the proposal seems profitable in the long run as long as inventory management is kept efficient and the website stays relevant. Implemented at the right time, such as when the PLC curve reaches the growth stage, the online channel could serve as a boost to diffusion and help penetrate the market.

## 7.2 Costumer Live Value (CLV)

To analyze the profitability of the online shop, the CLV approach has been utilized. With the vague nature of provided information, assumptions have been made to accurately conclude upon the calculations. It is mentioned that the costs of shipping + handling (S&H) are 5€ in total.

Here, it has been assumed that the two costs are equally

distributed, accounting for 2.5€ each. As a result, in 2024 period 1, where no items are returned, there is no handling cost since no returns need to be handled. For simplicity, production costs are further assumed to be sunk (even though they realistically could be resold in the next period). Lastly, 2022 is considered to be the first period ( $t=0$ ). A forecast is asked for 2022 to 2024 which is believed to be a typo, as data goes to 2025.

Based on the calculations in excel, the online shop is profitable with a discounted CLV of €55.7 in 2025. Assuming that the above estimates show the CLV for the average consumer in the online shop, Diageo can expect a profit of 20€ the first year; 28,1€ the second year; no profits in the third year and a mere profit of 4,3€ in the fourth year. Based on the analysis, it can thus be concluded that the vast majority of profits are seen in the first two years of the CLV. Interestingly, the revenue is not declining in the last two periods; rather, it is the magnitude of returns that vastly increase over time. This affects Guinness' profitability negatively.

One way Diageo can combat this problem is to limit the extent of free returns after a certain period. An example of such a measure could be to have a campaign like "Join our Membership Club and get free returns for the first year!". However, we cannot ensure this will even take care of the problem. The implications of removing free returns and its effect on consumer demand is unknown and could be adverse. If removed, the consumer might not decide to order at all due to being uncertain about the product. The same customer, given free returns, would have been keen to try out various product variants and might decide to keep at least one of them. In other words, free shipping could make the consumer more likely to make riskier purchases, which otherwise wouldn't happen. In this case, it would be even worse to remove the option to return goods.

	2022	2023		2024		2025			Σ
Order ID	1	1	2	1	2	1	2	3	
Revenue (R)	50	65	120	45	80	50	90	60	560
- Value of returned products	10	30	60	0	80	25	65	30	300
- Shipping cost	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	
- Return cost	2,5	2,5	2,5	0	2,5	2,5	2,5	2,5	17,5
- Handling returns (8% R)	4	5,2	9,6	0	6,4	4	7,2	4,8	41,2
- Production costs (22% of R)	11	14,3	26,4	9,9	17,6	11	19,8	13,2	123,2
Total Costs (C)	30	54,5	101	12,4	109	45	97	53	481,9
Net profit (π)	20	10,5	19	32,6	-29	5	-7	7	58,1
Profit on the year basis	20	29,5		3,6		5			58,1
Discounted profit	20	28,1		3,3		4,3			55,7

Table 5: CLV overview (See appendix for full calculations)

Another option would be to increase profit margins on their products. This could either be done by lowering costs or increasing the price. Knowing that Guinness has an inelastic consumer demand thanks to the high brand equity, increasing the price makes the most sense. We already saw Guinness do this in the past years as their sales started to decline, and it seemed to work well. Therefore, this is the recommended strategy. Most likely, it will continue to work, at least short term, especially given the launch of their new Viridiana product. Milking the products will, however, not be sustainable long term, and here other measures will be needed.



## 8. Conclusion

Concluding this paper, Diageo should now be better informed on how to react to Guinness' challenges identified by the SWOT analysis. The most significant threat requiring immediate reaction is the trend of consumers leaving stout for milder alternatives. To overcome this challenge, Guinness should utilize its strengths by launching a new product, Viridiana®, targeted toward young consumers. Leveraging its strong brand Guinness' can appeal to the trendy consumer who appreciates a great quality and likewise demands an environmentally responsible product. Tweaking the product mix, adding new flavours with an all-new organic twist, Guinness can further elevate its price point, taking advantage of the increased willingness to pay, increasing the margins. The United States has been identified as the most attractive market. If the launch proves a success, a subsequent launch in Germany is recommended to keep the steady revenue stream going when diffusion starts to deteriorate. However, it must be noted that the marketing mix should be sufficiently adapted for the German market. In launching the new product, a full-scale marketing campaign is suggested, starting with a Super Bowl halftime commercial. This will bring an unprecedented amount of attention towards the Viridiana, with sales estimated at upwards of 5 million. The marketing would break-even in about 14 months. Following the marketing campaign, it is further recommended that Guinness sets up an online distribution channel. This comes with several benefits, the most crucial being further increasing margins by cutting out unnecessary intermediaries. If everything goes as planned, Diageo should successfully overcome its challenges and come full circle in its quest of bringing Guinness, the undisputed king of stout, back to its former glory.





## 9. Bibliography

- Britton, N. (2020, July 20). *How Much Does it Cost to Redesign a Website?* <https://thrive.design/how-much-does-it-cost-to-redesign-a-website/>
- CNN Business. (2022, February 11). *Super Bowl commercials cost \$7 million. It's still a good deal.* <https://edition.cnn.com/2022/02/11/media/super-bowl-commercials-nbc/index.html>
- DesignBro. (2022). *What Does a Packaging Design Project Cost?* <https://designbro.com/packaging-design/what-does-packaging-design-cost/>
- Diageo. (2022). *Diageo Website.* <https://www.diageo.com/en/our-brands/brand-profiles/guinness/>
- Dixon, E. (2022, February 26). *2022 Super Bowl viewing figures rise 16% to 112.3m for NBC.* <https://www.sportspromedia.com/news/2022-super-bowl-tv-ratings-nbc-streaming-nfl/>
- Euromonitor. (2021). *Passport: Global Beer Market Report.* <https://www-portal-euromonitor-com.esc-web.lib.cbs.dk:8443/portal/statisticsevolution/index>
- Forbes. (2019). *New Study Shows What's Behind Craft Beer's Growth.* <https://www.forbes.com/sites/thomaspellechia/2019/06/01/this-new-study-shows-whats-behind-craft-brewn-growth/>
- Graefe, D. A., & Graefe, A. R. (2021). Gender and Craft Beer: Participation and Preferences in Pennsylvania. *International Journal of the Sociology of Leisure*, 4(1). <https://doi.org/10.1007/s41978-020-00067-y>
- Guinness. (2022). *Guinness: Our Story.* <https://www.guinness.com/en/our-story/>
- Hallman, B. (2020). *What Percent of Revenue Do Publicly Traded Companies Spend on Marketing and Sales?* <https://vtl.design.com/digital-marketing/content-marketing-strategy/percent-of-revenue-spent-on-marketing-sales/>
- Hofstede-insights.com. (2022). *Hofstede Insights.* <https://www.hofstede-insights.com/fi/product/compare-countries/>
- ImpactPlus.com. (2022). *How Much does a website redesign cost?* <https://www.impactplus.com/blog/how-much-does-a-website-redesign-cost>
- ProCon.com. (2022). *Legal Drinking Age.* <https://drinkingage.procon.org/minimum-legal-drinking-age-in-other-countries/>
- Statista. (2019). *Percentage of adults in the United States who use social networks as of February 2019, by age group.* <https://www-statista-com.esc-web.lib.cbs.dk:8443/statistics/471370/us-adults-who-use-social-networks-age/>
- Statista. (2020). *Reach of leading social networking sites used by teenage and young adult online users in the United States as of 3rd quarter 2020.* <https://www-statista-com.esc-web.lib.cbs.dk:8443/statistics/199242/social-media-and-networking-sites-used-by-us-teenagers/>
- Statista. (2021). *Sales of the leading imported beer brands of the United States in 2020(in million U.S. dollars).*
- World Bank. (2019). *World Bank.* <https://data.worldbank.org/indicator/IC.BUS.EASE.XQ>
- World Bank. (2020). *GDP per capita, PPP (current international \$) - CN-JP-CL-DE-CZ-US.* <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?locations=CN-JP-CL-DE-CZ-US>







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## MACS overview

Criteria	Source(s)
Ease of Doing Business Index (World Bank)	(World Bank, 2019)
GDP Per capita - PPP Adjusted (World Bank)	(World Bank, 2020)
World Legal Drinking Ages – (Britannica ProCon)	(ProCon.com, 2022)
The on-trade volume of beers sold (%)	(Euromonitor, 2021)
Consumer expenditure on beer (\$USD per capita)*	(Euromonitor, 2021)
Total consumer expenditure on beer (\$USD Million)	(Euromonitor, 2021)
Beer Market growth (litres 2018-2019)**	(Euromonitor, 2021)
Psychic Distance	(Hofstede-insights.com, 2022)

*Note: Links can be found in the bibliography list*

\*Consumer expenditure on beer was calculated using the metric “Total consumer expenditure on beer (\$USD Million)” and dividing by the population of the given country.

\*\*Here, data from 2020 and 2021 has deliberately been left out because of the adverse effects of the Covid-19 pandemic on the world economy.

## Market Attractiveness tables (Non-weighted rankings by country)

Insert Metrics below	Weight	USA	Chile	Germany	China	Japan	Czech rep
Ease of doing business (closer to 1 the better)	5	6	59	22	32	30	41
GDP per capita, PPP adjusted	15	63593,4	25110,0	54792,0	17211,0	42390,3	41604,0
Legal drinking Age	5	21	18	18	18	20	18
On-trade Volume of beers sold (%)	10	16,3	13,2	25,4	48,5	10,8	25,3
Consumer expenditure on beer (\$USD pr. person)	15	253,8	92,5	122,7	9,5	135,4	175,3
Total consumer expenditure on beer (\$USD million)	20	83613,9	1767,0	10207,2	13411,9	17029,2	1875,5
Beer market growth (litres 2018-2019)*	10	-0,7	5,6	-1,2	0,8	-1,7	0,9
Psychic Distance from home market to "target" market	20	51,3	179,5	100,4	172,0	197,5	136,6
<b>Total</b>	<b>100</b>	<b>147.555</b>	<b>27.245</b>	<b>65.287</b>	<b>30.904</b>	<b>59.811</b>	<b>43.877</b>

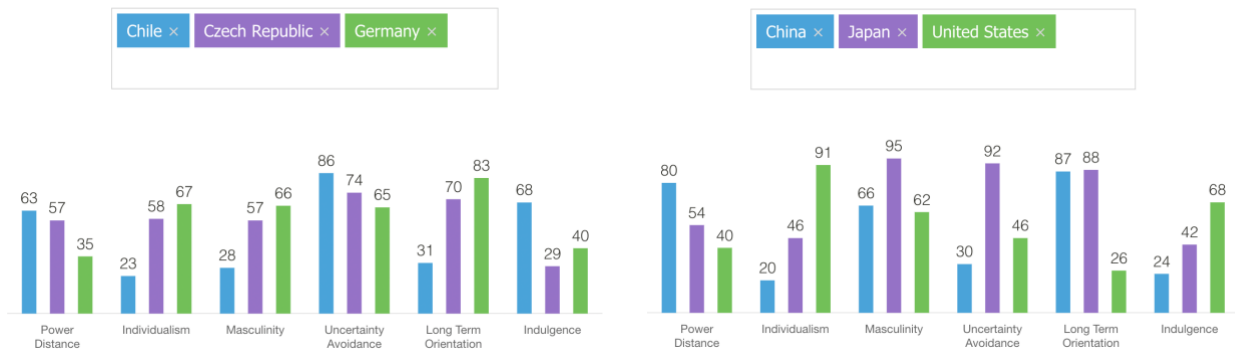
	Weight	USA	Chile	Germany	China	Japan	Czech rep
Ease of doing business (closer to 1 the better)	5	6	1	5	3	4	2
GDP per capita, PPP adjusted	15	6	2	5	1	4	3
Legal drinking Age	5	1	6	6	6	2	6
On-trade Volume of beers sold (%)	10	3	2	5	6	1	4
Consumer expenditure on beer (\$USD pr. person)	15	6	2	3	1	4	5
Total consumer expenditure on beer (\$USD million)	20	6	1	3	4	5	2
Beer market growth (litres 2018-2019)*	10	4	1	5	3	6	2
Psychic Distance from home market to "target" market	20	6	2	5	3	1	4
<b>Total</b>	<b>100</b>	<b>38</b>	<b>17</b>	<b>37</b>	<b>27</b>	<b>27</b>	<b>28</b>

## Competitive Strength tables (Non-weighted rankings by country)

	Weight	USA	Chile	Germany	China	Japan	Czech rep
Country-of-origin effect (attitude towards Irish products)	10	2	1	5	3	6	4
Product fit to market demands	15	6	2	4	3	5	1
Brand awareness in specific market	20	6	1	5	2	4	3
Psychic Distance from home market to "target" market	15	6	2	5	3	1	4
Current market share	10	6	1	5	2	4	3
Local market knowledge	15	6	1	5	3	4	2
Perceived Brand value	15	4	1	6	2	5	3
<b>Total</b>	<b>100</b>	<b>36</b>	<b>9</b>	<b>35</b>	<b>18</b>	<b>29</b>	<b>20</b>



## Psychic Distance



The metric “Psychic Distance” has been based on Hofstede’s Dimensions (Hofstede-insights.com, 2022)

Cultural (Psychic distance) calculation							
	Home Country	USA	Chile	Germany	China	Japan	Czech rep
Power distance	28	40	63	35	80	54	57
Individualism	70	91	23	67	20	46	58
Masculinity	68	62	28	66	66	95	57
Uncertainty Av.	35	46	86	65	30	92	74
Long Term	24	26	31	83	87	88	70
<b>Abs. distance</b>		<b>51</b>	<b>180</b>	<b>100</b>	<b>172</b>	<b>197</b>	<b>137</b>
Rank (abs. distance)		6	2	5	3	1	4
Euclidean distance		27	88	66	96	96	69
Rank (abs. distance)		6	3	5	2	1	4

## CBC analysis Overview

Flavor		Alcohol		Organic		Brand		Price	
Attribute	Partial Utility	Attribute	Partial Utility	Attribute	Partial Utility	Attribute	Partial Utility	Attribute	Partial Utility
Peach	0	2%	0	Yes	2.5	Guinness	3.5	5 €	0
Strawberry	3	0%	1.8	No	0	San Miguel	2.5	3.50 €	2.5
Lemon	2.1	4%	2.2			Desperados	3	2.50 €	4
Tequila	2.8	8%	2			No name	0	1.80 €	6

## Calculations: CBC analysis

$$Prob_{G1} = \frac{e^{8,3}}{e^{8,3} + e^{9,3} + e^9 + e^{10,3} + e^6} = \frac{4023,9}{4023,9 + 10938 + 8103,1 + 29732,6 + 403,4} = 7,56\%$$

$$Prob_{G2} = \frac{e^{10,6}}{e^{10,6} + e^{9,3} + e^9 + e^{10,3} + e^6} = \frac{40134,8}{40134,8 + 10938 + 8103,1 + 29732,6 + 403,4} = 44,94\%$$

Note:  $Prob_{G1}$  is interpreted as the expected market share for “Guinness 1” and  $Prob_{G2}$  is likewise the expected market share for “Guinness 2”.

## Calculations: Willingness to Pay (WTP)

Organic vs. non-organic

$$\frac{PU_{organic} - PU_{nonorganic}}{WTP_{organic}} = \frac{\Delta PU_{price}}{\Delta Price} \rightarrow WTP_{organic} = (2,5 - 0) * \frac{5 - 1,8}{6 - 0} = 1,3333$$

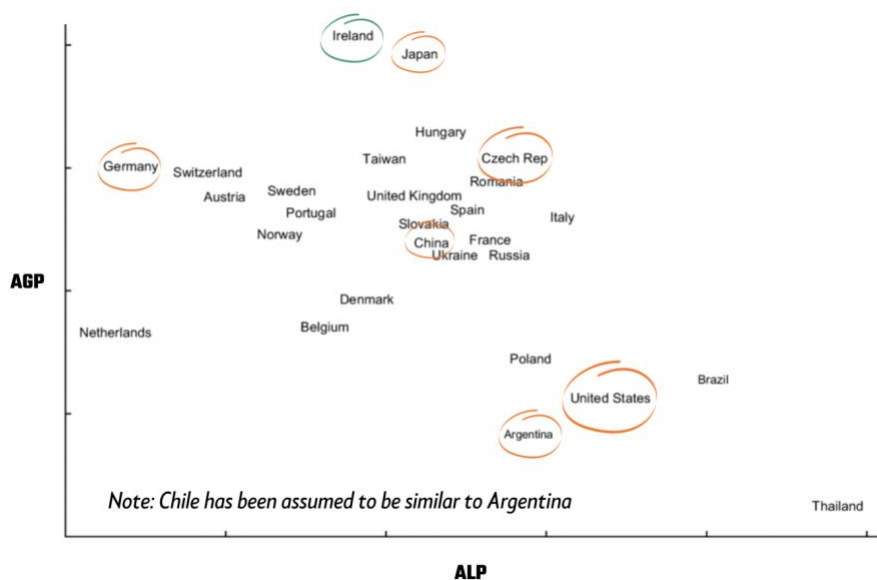
Strawberry taste vs. tequila

$$\frac{PU_{strawberry} - PU_{tequila}}{WTP_{Strawberry}} = \frac{\Delta PU_{price}}{\Delta Price} \rightarrow WTP_{Strawberry} = (3 - 2,8) * \frac{5 - 1,8}{6 - 0} = 0,1067$$

### Calculations: BASS diffusion market shares

$$\begin{aligned} s_1 &= 0,01(250.000 - 0) + 0,9 \cdot \frac{0}{250.000} \cdot (250.000 - 0) = 2.500 \\ s_2 &= 0,01(250.000 - 2.500) + 0,9 \cdot \frac{2.500}{250.000} \cdot (250.000 - 2.500) = 4.703 \\ s_3 &= 0,01(250.000 - 7.203) + 0,9 \cdot \frac{7.203}{250.000} \cdot (250.000 - 7.203) = 8.723 \\ s_4 &= 0,01(250.000 - 15.926) + 0,9 \cdot \frac{15.926}{250.000} \cdot (250.000 - 15.926) = 15.761 \\ s_1 + s_2 + s_3 + s_4 &= 2.500 + 4.703 + 8.723 + 15.761 = 31.687 \end{aligned}$$

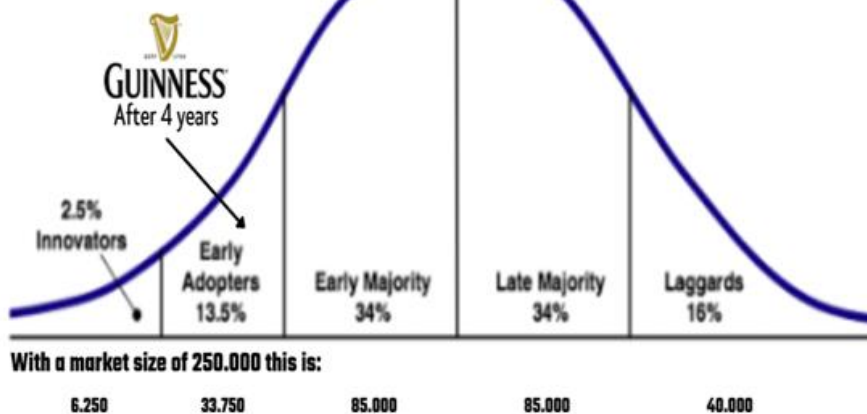
### AGP-ALP Map



This metric was used in order to determine “product fit to market demand” in the CS side of MACS

### PLC Curve

#### Product Life Cycle



## Break-Even Calculations

### Break Even Modelling

	Cost (\$USD)	Justification for measure
R&D costs	- \$	Strawberry flavor & organic option already developed
Label and package design	50.000,00 \$	Industry standard for a packagign design project
Mass-media advertising	4.204.800,00 \$	Industry standard for packaged goods (24% of revenue)
30 second Superbowl ad	5.500.000,00 \$	2021 benchmark price
Marketing research	50.000,00 \$	Benchmark price for detailed marketing research project
Website makeover	100.000,00 \$	High-end industry standard for website makeover
Developing the super bowl ad	1.000.000,00 \$	
<b>(Cm) Total Marketing Cost</b>	<b>10.904.800,00 \$</b>	

### Contribution Margin

### Justification for measure

(Pc) End consumer retail price	3,99 \$	Old price was approx. 2.5€ -> WTP increased by 1.5€
(AVC) Variable cost per unit	1,50 \$	Old VC was approx. 1€ -> Now it has been assumed to increase by 0.5€
Wholesale contribution margin	0,20	Industry standards are 0,32, but Guinness has high negotiation power
(Pw) Price per unit (to wholesalers)	3,19 \$	$P_c * (1 - \text{wholesale contribution margin})$

### Profit Estimation

### Justification for measure

(Q) Annual sales (units sold)	5.488.721,80 Beers	$R / P_w$
(R) Revenue	17.520.000,00 \$	Based on estimate equal to 10% of Guinness stout US revenue in 2020
(VC) Variable cost	8.233.082,71 \$	$Q * AVC$
<b>(π) Annual net profit</b>	<b>9.286.917,29 \$</b>	$R - VC$ (note fixed costs are not included as they are sunk)

### Break-Even

### Equation

Break-even quantity	6.444.917 Beers	$\text{Total marketing cost} / (\text{annual net profits} / \text{annual units sold})$
<b>Break-even timeframe (months)</b>	<b>14,1 Months</b>	$(\text{Break even quantity} / \text{annual sales}) * 12$

Sources: (Britton, 2020; DesignBro, 2022; Dixon, 2022; Hallman, 2020; ImpactPlus.com, 2022; Statista, 2021)

$$P_w = P_c * (1 - 0,2) = 3,99 * 0,8 = 3,19$$

$$R = 0,1 * 175.200.000 = 17.200.000$$

$$Q = \frac{R}{P_w} = \frac{17.520.000}{3,19} = 5.488.721,8$$

$$VC = Q * AVC = 5.488.721,8 * 1,5 = 8.233.082,71$$

$$\pi = R - VC = 17.520.000 - 8.233.082,71 = 9.286.917,29$$

$$Q_{\text{breakeven}} = \frac{C_m}{\frac{\pi}{Q}} = \frac{10.904.800}{\frac{9.286.917,29}{5.488.721,8}} = 6.444.917$$

$$\text{Months}_{\text{breakeven}} = \frac{Q_{\text{breakeven}}}{Q} * 12 = \frac{6.444.917}{5.488.721,8} * 12 = 14,1$$