

Abstract for Beer Brewing Process

This abstract refers to the production of beer, considering initial market data and the related production process



BEER PRODUCTION

Beer is the world's most widely consumed and probably the oldest alcoholic beverages. It is the third most popular drink overall, after water and tea. It is produced by the brewing and fermentation of starches, mainly derived from cereal grains.



Most commonly malted barley, although wheat, maize (corn), and rice are widely used. Most beer is

flavoured with hops which add bitterness and act as a natural preservative, though other flavourings such as herbs or fruit may occasionally be included. Some of humanity's earliest known writings refer to the production and distribution of beer: the Code of Hammurabi includes laws regulating beer and beer parlours, and "*The Hymn to Ninkasi*", a prayer to the Mesopotamian goddess of beer, served as both a prayer and a method of remembering the recipe for beer in a culture with few literate people. Today, the brewing industry is a global business, consisting of several dominant multinational companies and many thousands of smaller producers ranging from brewpubs to regional

breweries. The strength of beer is usually about 4% to 6% alcohol by volume (abv) though may range from less than 1% abv, to over 20% abv in specific cases. Beer forms part of the culture of alcohol-drinking nations and is associated with social tradition.



BEER MARKET

The following table exhibits how the global beer market was shared by continent between 2003-2008

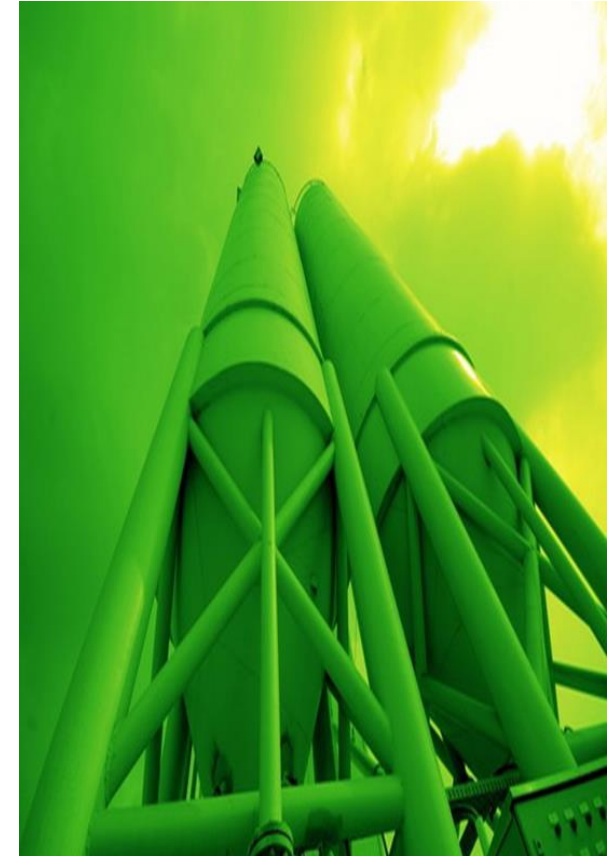
GLOBAL BEER MARKET
SHARE OF PRODUCTION BY CONTINENT (r)
2003 – 2008

Continents	2003	2004	2005	2006	2007	2008
Europe	34.9%	34.1%	34.1%	33.4%	33.1%	32.2%
Asia/Middle East	26.9%	28.5%	28.5%	30.0%	31.2%	31.7%
North America	22.2%	21.4%	20.9%	20.0%	19.4%	19.0%
South America	10.2%	10.2%	10.7%	10.6%	10.5%	11.0%
Africa	4.4%	4.4%	4.5%	4.6%	4.7%	5.0%
Australia/Oceania	1.4%	1.3%	1.3%	1.3%	1.2%	1.2%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

BEER MARKET

While consumers in emerging markets tend to drink like Europeans, Western Europe itself is of relative less importance to the producers compared to the opportunities in Eastern Europe, Russia and Asia and other emerging markets. Market analysts predict solid global growth in the coming three year period in spite of financial crises. Innovations to watch are trends in packaging / size / labelling and in health. Most big alcohol producers performed well over the last years. In Western Europe some company's continue to see stagnation and fall in sales. Company strategies are therefore mainly to focus on emerging markets - in particular in Asia and Russia but also Eastern Europe –

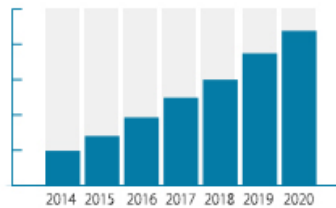
and not least on innovation and new products. According to *Business Insights* the three key drivers of growth are 1) the expansion of the world's young adult population, 2) the emergence and growth of the middle class with disposable income, and to a lesser extent, 3) consumers' desire to trade-up to more premium products.



BEER MARKET

Global Beer Market

Global Beer Market is Expected to reach **\$688.4 Billion** by 2020



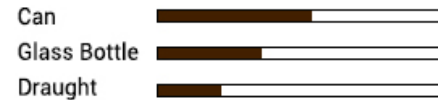
Growing at a CAGR of **6.01%** (2015-2020)

Global Beer Market by type



■ The comprehensive view on the % share of type segment (2020)

Global Beer Market by Packaging



■ The comprehensive view on the % share of packaging segment (2020)

Global Beer Market by Production

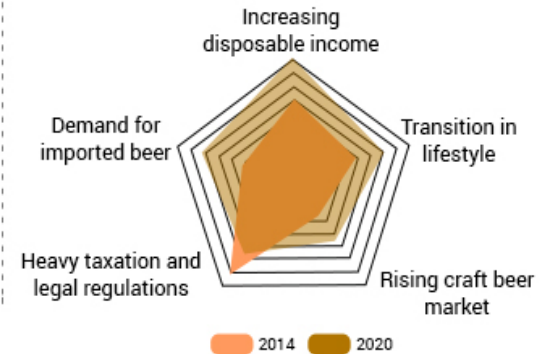


■ The comprehensive view on the % share of production segment (2020)

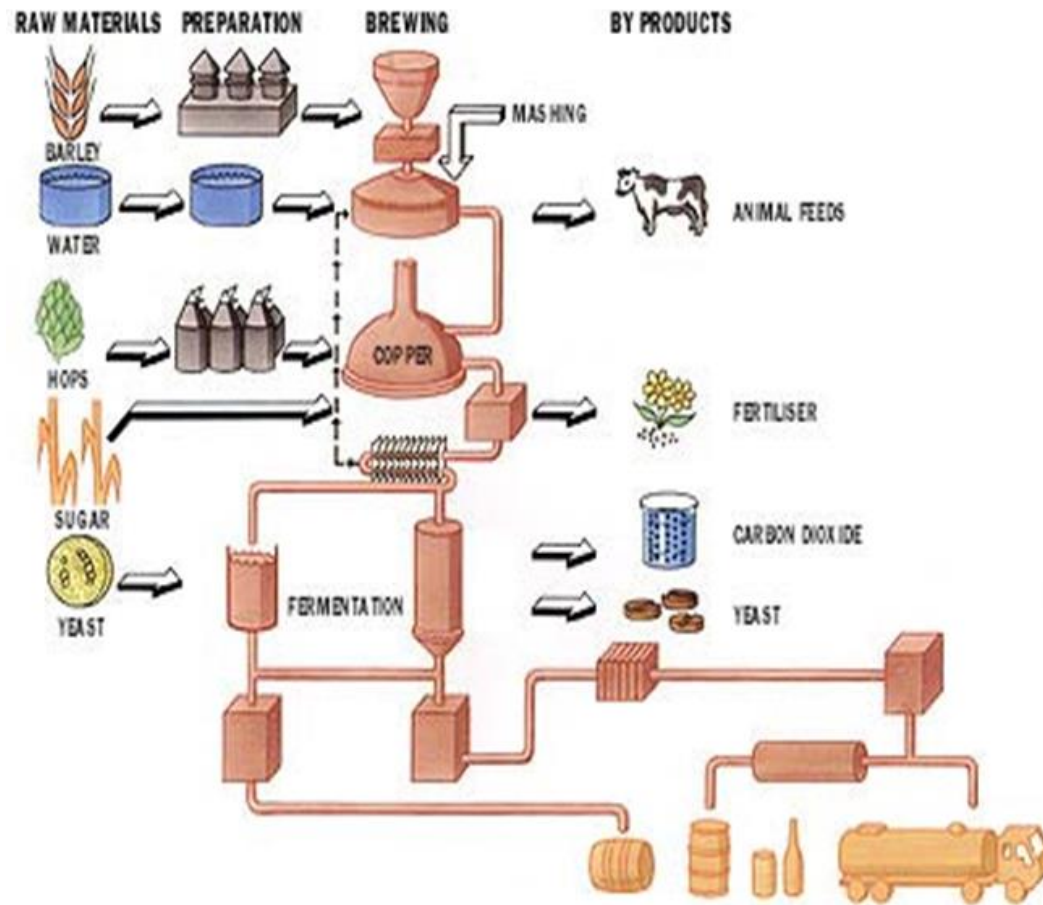
Global Beer Market by Geography



Top Impacting Factors



BEER BREWING PROCESS



As illustrated beside, several steps have to be performed during the brewing process. To explain every step in detail would go beyond the scope of this abstract. We will refer to the process in detail within our project study/consulting. In general this process will take place for every kind of Beer. According to the favoured end product small changes have to be integrated within the production process. That means for example that only the temperature or the storing duration have to be adjusted besides the used raw materials. Therefore a variable production of different types of beer according to a changing demand is possible. Besides that advantage, the production waste can be used or sold as fertilizer or animal feed.

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