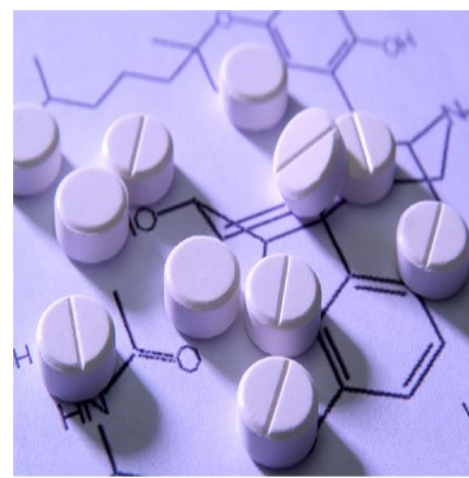


Multipharmaceutical Production Abstract

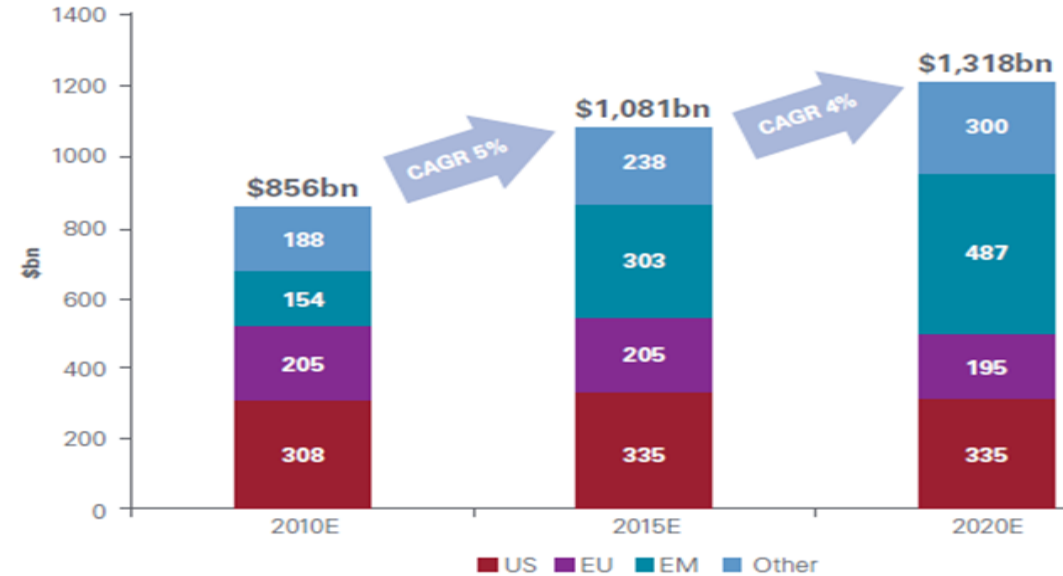
*This abstract covers general aspects of
multi pharma production*



INTRODUCTION

The pharmaceutical industry was, is and will be one of the most profitable industries in the world. The following chart visualizes the market size development divided by the main markets USA, Europe, emerging markets and others.

The assumptions above are based on *IMS Health data* and *KPMG estimations*. According to the given indicators, a slightly decrease of the CAGR can be expected from 2015 -2020. The decreased growth, compared to growth rates of 6 % and above before the financial crisis, can also be associated with a high amount of patent expiries which are worth 120 billion USD only for the period between 2010 and 2015. The growth would



plunge more drastic, if there would be no significantly growing demand on patent products and generics. In terms of growth, emerging markets have to get highlighted. Not for nothing these market get named “pharmerging markets”.

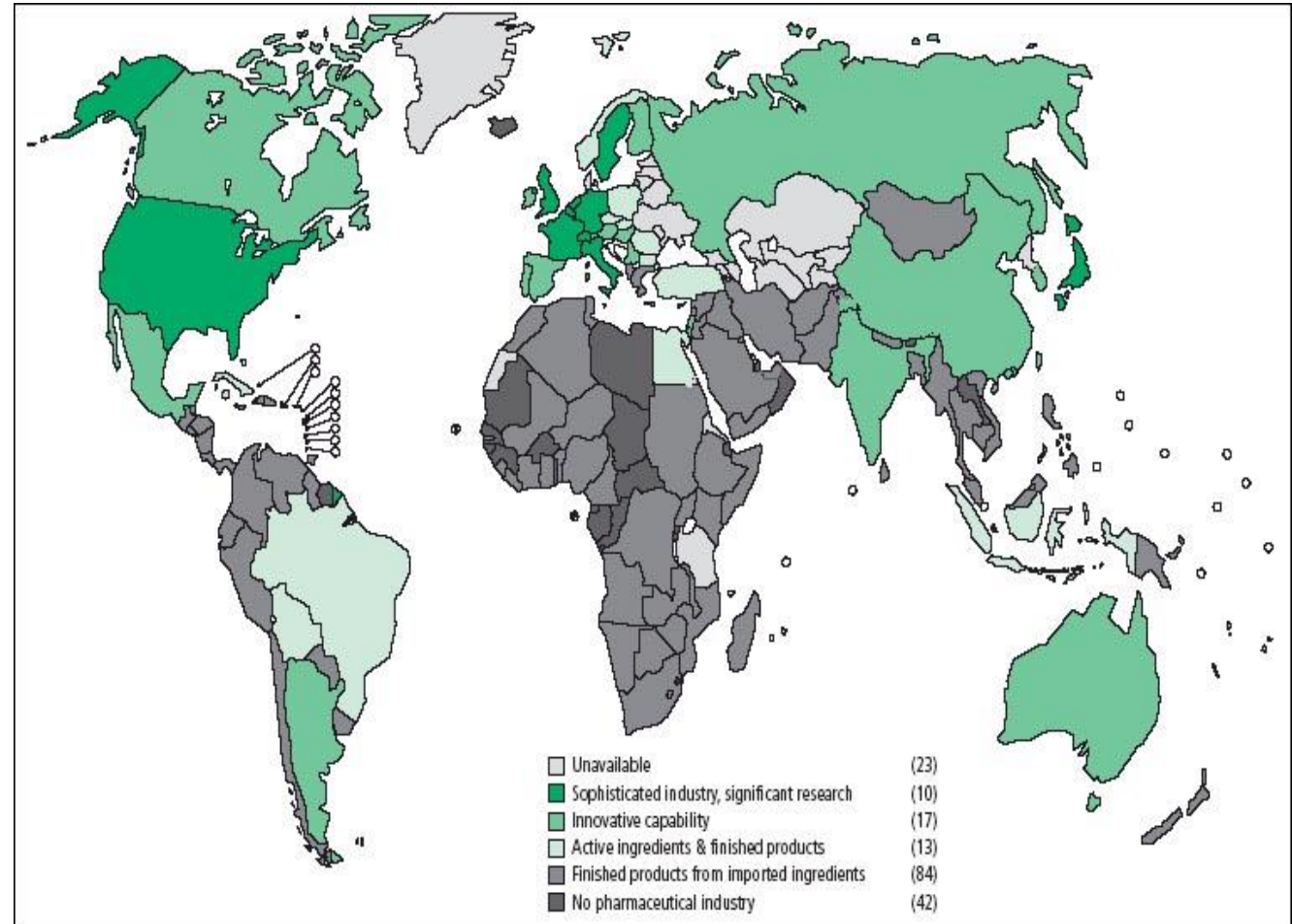
Aggregate Emerging Market revenues are forecast to grow at a compound 14% between 2010 and 2015.

MARKET

Especially generics can be seen as interesting product alternative in emerging markets.

The following map is a result of a WHO investigation in 2004. It reflects the global distribution of different pharmaceutical-production levels.

As you can see the more sophisticated production levels take place in the northern hemisphere, especially in North America and Central Europe.



MARKET

Middle East and the African continent are underrepresented in the pharmaceutical production field. Although the study has been conducted eight years ago, it still reflects the current situation widely. Within the last years it seems that larger efforts are put into creating own manufacturing facilities to increase the independency on imports and to decrease the costs for local medicine supply.

Technically and economically it makes sense to set up a multi-pharma production for two reasons. Firstly you diversify your product portfolio right from the beginning.

Secondly, economies of scale (e.g. shared laboratory, shared administration etc.) will lead to lower fix costs per unit. Generally you can create your final production setup according to your market demand. Depending on the produced product some sections might be operated separately in order to avoid any cross contamination.

Furthermore, you are able to produce various products per production line by changing the active product ingredients and the corresponding excipients.



TYPES OF PECTIN



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