

**A COUNTRY-RATING ANALYSIS FOR THE TARGET-MARKET SELECTION
DECISION – THE CASE OF BIOTECH START-UP**

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In this paper authors analyze a possible international market entry decision of a small start-up firm operating in the field of green biotechnology and evaluate potential new markets outside of Austria. In the empirical part, the conduction of a country analysis identifies China, the USA and Germany as the highest potential target-markets. The qualitative investigation has revealed that severe changes characterize the agricultural strawberry market. The research shows that China has taken the lead, therefore forcing the USA and Germany, to focus on new competitive advantages.

Key words: internationalization, start-up, strawberry industry.

**АНАЛИЗ РЕЙТИНГА СТРАН ДЛЯ ПРИНЯТИЯ РЕШЕНИЯ ПО ВЫБОРУ
ЦЕЛЕВОГО РЫНКА – ИСТОРИЯ БИОТЕХ СТАРТ-АП**

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В данной работе авторы анализируют возможное решение о входе на международный рынок небольшой старт-ап-фирмы, работающей в области зеленой биотехнологии, и оценивают потенциальные новые рынки за пределами Австрии. В эмпирической части статьи, проведение анализа стран определяет Китай, США и Германию как самые высокие потенциальные целевые рынки. Качественное исследование показало, что серьезные изменения характеризуют рынок сельскохозяйственной клубники. Исследование показывает, что Китай взял на себя ведущую роль, поэтому вынуждает США и Германию сосредоточиться на новых конкурентных преимуществах.

Ключевые слова: интернационализация, старт-ап, клубничная промышленности.

INTRODUCTION

Enterprises are able to grow either by innovation, and therefore launch a new product, or they attract new customers through expansion into new markets. Internationalization is an issue which used to be mostly relevant for large companies, because of their access advantage to resources. During the last decade, environmental

modifications enabled an increasing number of small and medium-size enterprises (SMEs) to take on the challenge of internationalization. Fast progress of globalization, trade liberalization and new opportunities in communication technologies give positive impulses to support SMEs during internationalization (Schwens & Kabst, 2011, S. 60). SMEs have begun to play an important role in global trade. It is a fact that internationalization is a major contributor to the economic development of developed nations as it improves productivity and creates employment. Small firms play an important role in this process. Reports from the Organization for Economic Cooperation and Development (OECD) as well as from the European Union (EU) state that they now account for a large proportion, 25 % in most industrialized countries, of international exports. Moreover SMEs generate between 60 % and 90 % of all new jobs. Export oriented entrepreneurial start-ups contribute more strongly to macro-economic growth than entrepreneurial activity in general (OECD, 2009; European Commission, 2010; Onkelinx & Sleuwaegen, 2008).

Smaller firms are traditionally focused on their domestic market, and a majority of SMEs will most likely continue to do so in the future. However, an increasing share of SMEs is internationally active which results into faster growth, than staying on a purely domestic level (OECD, 2000). Nevertheless, internationalization of SMEs is often limited due to various internal and external barriers. Consequently SMEs have a large potential to grow through internationalization. As their role on the global economic market changed, academic research switched their focus from large, resource-rich companies and progressively report about the internationalization of small firms. SMEs, however, are not just slimmed-down versions of MNCs. Consequently their behaviour and interaction with the global market need to be looked at differently. Nevertheless, only little is known about SMEs with an international entrepreneurial orientation and the effects of internationalization shortly after foundation (Shuman & Seeger, 1986, p. 8).

Especially SMEs in high-technology industries are qualified to successfully internationalize right after inception. Because of their abilities to rapidly adapt to changes and quickly occupy niche markets, they turn cutting-edge knowledge into commercial use may even faster than larger and more complex cooperations. Smaller firms lack the resources and capabilities of traditional multinational companies, but profit from less complexity and faster working decision making hierarchies. It is crucial to gain extensive understanding about the phenomenon of new venture internationalization, as the decision about a serious step into foreign markets cannot be taken lightly. Internationalization at an early stage comes with the expenditure and possible risk of leaking big amounts of knowledge, time and financial resources. Hence it is critical for SMEs to avoid errors during their first internationalization, which could result in major drawbacks (Prashantham, 2008, p. 380).

This paper was initiated by a newly found university spin-off of the Technical University of Graz. The firm successfully developed a biological plant agent and plans to launch it on an international level. A country-rating analysis in the empirical part supports the biotech start-up during the target-market selection decision. Specific profiles about the strawberry industries of the three most-potential target-markets enable the firm to gain further knowledge before an entry decision is made.

METHODOLOGY

Problem statement and research question

Austrian biotech firms, supplying the agricultural market, have to expand into foreign markets as the domestic market is too limited in order to ensure growth. High fixed costs, caused by expenses for research and development (R&D) and high-tech machinery require large sales volume to profit from economies of scale. It increasingly occurs that SMEs undergo an internationalization process right after their foundation but often it is not clear what factors influence the process.

It is difficult for entrepreneurs to prepare themselves for early-stage internationalization since the process is more complex and harder predictable than one on purely domestic or regional level. The perspective of international success comes with an increased amount of risk which needs to be carefully considered and minimized. Therefore it is especially important to get prepared about the issue of international entrepreneurship and its influencing factors. Whereas traditional modes of international market entry have been extensively brought up in academic literature, international entrepreneurship, also referred to as born-global firm phenomenon has only been an issue of analyses for about one decade.

In addition to the basic information gap about the internationalization process of small start-ups, members of SMEs would like to increase their knowledge concerning the possibilities of entry modes and get support with a systematic target-market selection. Coming along with this issues are unresolved questions about the most appropriate timing for international market entry. Besides successful development of the first marketable product, nothing further has been decided up to this point. The reasons for this lays in the nature of the firm, which is equipped with high-end scientific knowledge. The owner-manager is missing entrepreneurial experience, consequently he is not aware of the aspects influencing the decision making process concerning the possible internationalization. Insufficient preparation before the future market entry and too little consideration of the numbers of influencing market factors can lead to reduced success and earnings.

Worldwide many different located cultivation areas of strawberries, different international industry structures combined with different regulations and requirements of the retail chains make the decision very complicated where to enter the market outside of Austria in order to ensure growth and follow an international export strategy. On top of the most obvious issue of target-market selection and international market entry it may occur problematic to transfer statistical and theoretical knowledge into practice.

Resulting out of the problem statement, this company-specific article defines the following research question:

RQ: When launching the product Fragola outside of Austria or Germany, which three countries are expected to be most-potential for Biotenzz?

Biotenzz is located in Graz and has gained access to the relevant local agricultural network through previous research work at the Technical University of Graz. Collaborations with agricultural companies and plant growers represent future purchasers of developed products in Austria and maybe Germany. Outside of the domestic market the laissez-faire approach is not very likely to work as the access to

relevant foreign networks is not given. So far no systematic approach has been undergone to search for the most appropriate target-market outside of the domestic market. Therefore a careful examination of world-wide cultivation areas in context with target-market selection is necessary. The research question is aiming to find out which countries are potential markets for a biotech firm to export their agricultural-applied product outside of Austria.

The empirical part covers the process of target-market selection on an example firm operating in the field of biotechnology. A comprehensive country rating, based on relevant, detectable and measureable data, filters out the most promising markets. This is the foundation for the given profiles about the strawberry industry within the selected countries. First we are presenting a detailed country-rating process related to the chosen list of criteria to conduct systematic country analysis. The following criteria are organized, based on general and context-specific factors, relevant and assessable for the target market selection process of Biotenzz.

Criteria

The country analysis has been conducted on base of the following factors (Nakos & Moussetis, 2001).

- **Market size and potential** are evaluated in relation to the country's strawberry production and strawberry production growth. In addition the GDP in general, per capita and its growth are taken into consideration to estimate expected sales potential, in combination with the Market Size Index of the Global Competitiveness Report 2010-2011.
- **Competition** is not considered because Biotenzz has no direct competition dealing with similar products. Indirect competition includes a wide spectrum and ranges from artificial taste enhancers up to chemical pesticides. The evaluation would be extremely difficult as well as inaccurate. Therefore the evaluation of competition is not part of the country-rating process.
- **Risk associated with operating in a foreign market** is evaluated through the Ease of Doing Business Index, as it stands for the level of property right protection and time for products registration. If the property rights are violated and similar products enter the market, risk of failure is dramatically increased. Product registration on the other side needs to be processed within a moderate amount of time, otherwise it consumes too many resources and may causes the operation to fail.
- **Level of development of distribution channels** is evaluated through the Infrastructure Index as well as the Technological Readiness Index of the Global Competitiveness Report 2010-2011
- **Costs of operating in a target-market** are evaluated through the measurement of physical distance from the headquarter in Graz to the individual country. The closer the country, the cheaper costs are assumed.

In general strawberry production is divided into frozen and fresh strawberry production. Frozen strawberries are sold to strawberry-processing enterprises, whereas fresh strawberries are mostly delivered to wholesale markets. The plant agent product Fragola is developed, among other advantages, to enhance the taste of

the fruits; therefore the frozen strawberry market is expected to be more interested. Every strawberry tastes individually, consequently the taste enhancement is probably difficult to realize for the individual end-consumer of fresh strawberries. Whereas with frozen strawberries, big amounts get mixed together and processed into products, such as jam, jelly or strawberry yoghurt. Through this method the increased taste-level has more effect and is easier to taste for experts as well for end-consumers. However, the relation of frozen and fresh strawberries production is difficult to obtain and only some producing countries have exact figures. Consequently this article is taking the whole size of the strawberry production as criteria.

Weighting

Due to the fact that Biotenzz operates in the B2B sector which is directly linked to the strawberry industry, the production quantity and its growth is weighted with a total of 40 %.

The rest is represented by criteria measuring the economic power of the country as well as the status of the infrastructure and the technological readiness. As distance is a crucial factor when starting to do business abroad the physical distance is rated with 10%. Detailed weighting of the criteria is visualized in following table:

Table 1 – Weighting of criteria

Weighting of Criteria (in %)			
Context-specific criteria	40	Strawberry production (in t)	30
		Growth rate of strawberry production	10
General Criteria	60	Ease of Doing Business Index	15
		GDP	5
		GDP per Capita	5
		GDP Growth	10
		Market size	5
		Infrastructure	5
		Technological readiness	5
		Physical Distance	10
Total			100

Source: own calculations.

Methodology of the Rating Process

The weighting for each criterion is defined in table 1. After relevant data for eleven countries has been collected, each criteria range is defined by the top and lowest performer. The best result equals 100 %. This method is applicable since it

allows countries with similar data the same performance rate. By summarizing all performance rates of all criteria, the overall performance is calculated. This allows a ranking of all countries according to their performance rates and visualizes the degree of performance difference.

STRAWBERRY INDUSTRY PROFILES

The strawberry is one of the most labour-intensive row crops. It is risky and expensive to grow, but it can yield more revenue per acre than virtually any other legal crop. The fruit attracts a wide variety of pests, including aphids, eelworms, and red spider mites. Even more threatening is the weather. A few days of rain can destroy an entire harvest of strawberries (Bertelsen, 1995). Worldwide, the strawberry industry shows a very promising and growing evolution. Over the last two decades, strawberries have experienced one of the highest rates of consumption growth of all fruit and vegetables. Production efficiency continuously improves and counteracts the increasing demand and consumption of strawberries. Literature mentions three major factors that contribute to increasing demand:

- Increasing awareness on the health benefits of strawberries
- The increasing supply of strawberries
- The year round availability of strawberries

Important for Biotenzz is the ratio between fresh strawberries destined to reach the endconsumer and fruits predetermined for processing. Frozen strawberries are often further processed into strawberry products, such as yogurt, in the final destination countries. As the individual end-consumer is hardly able to appreciate the improved taste level through *Fragola* of a fresh berry, the focus lies on growers producing for the growing food processing industry.

An exception represents strawberries grown outside the peak times, as they suffer from extremely weak taste due to colder climate conditions. The strawberry market is characterized by price cycles resulting from seasonal variability in production. The whole-sale price often more than triples outside the season as plants are grown more costly, mostly inside greenhouses. Increased taste would result in higher profit margins as the competitive advantage could be improved and demand increased. Therefore it can be assumed that growers are willing to spend more on plant-strengthening products outside the peak season since they want to take advantage of the high market prices during winter (Han, Carter, & Goodhue, 1999).

The use of *Fragola* is more likely in target-markets where chemical pesticides underlie strict governmental rules. The widespread practice of using methyl bromide as a fumigant against and pathogens for strawberry production is an on-going issue within the industry. In the beginning of 2005, the Montreal Protocol intended to forbid participating countries to use methyl bromide because it depletes the ozone layer. It continued to be allowed in 2006 under critical use exemptions in certain countries based on lack of technical, or economically feasible alternatives (Boriss, Brunke, & Kreith, 2006). The following tables show the results of a country rating analysis.

Table 2 – Country-Rating Analysis

Country-Rating Analysis 1/2		USA	Spain	Turkey	Mexico	South Korea	Poland	Egypt	Japan	Italy	Germany	China
Strawberry production 2008 (in t)		1.148.410	281.240	261.078	207.485	204.000	200.723	200.254	190.700	155.583	150.854	1.500.000
Relative performance in %		76,56 %	18,75 %	17,41 %	13,83 %	13,60 %	13,38 %	13,35 %	12,71 %	10,37 %	10,06 %	100,00 %
Strawberry production 2007 (in t)		1.109.220	269.139	250.316	176.396	203.227	174.578	174.414	191.400	160.558	158.658	1.275.000
Growth of production (t)		3,41 %	4,30 %	4,12 %	14,98 %	0,38 %	13,03 %	12,90 %	-0,37 %	-3,20 %	-5,17 %	15,00 %
Relative performance in %		42,55 %	46,97 %	46,08 %	99,92 %	27,52 %	90,21 %	89,61 %	23,82 %	9,79 %	0,00 %	100,00 %
Ease of Doing Business Rank 2011 (total of 183)		5	49	65	35	16	70	94	18	80	22	79
Relative performance in %		97,27 %	73,22 %	64,48 %	80,87 %	91,26 %	61,75 %	48,63 %	90,16 %	56,28 %	87,98 %	56,83 %
GDP (in US\$ billions of 2008)		14.256	1.464	615	875	833	430	188	5.068	2.118	3.353	4.909
Relative performance in %		100,00 %	10,27 %	4,32 %	6,14 %	5,84 %	3,02 %	1,32 %	35,55 %	14,86 %	23,52 %	34,43 %
GDP per capita (in \$ of 2008)		46.381	31.946	8.723	8.135	17.074	11.288	2.450	39.731	35.435	40.975	3.678
Relative performance in %		100,00 %	68,88 %	18,81 %	17,54 %	36,81 %	24,34 %	5,28 %	85,66 %	76,40 %	88,34 %	7,93 %
real GDP growth (% in 2010)		2,836	-0,147	8,200	5,518	6,110	3,817	5,147	3,938	1,296	3,540	10,300
Relative performance in %		28,55 %	0,00 %	79,90 %	54,23 %	59,89 %	37,94 %	50,67 %	39,10 %	13,81 %	35,29 %	100,00 %
Market Size (total of 139)		1	13	16	12	11	21	26	3	9	5	2
Relative performance in %		99,28 %	90,65 %	88,49 %	91,37 %	92,09 %	84,89 %	81,29 %	97,84 %	93,53 %	96,40 %	98,56 %
Infrastructure (total of 139)		15	14	56	75	18	72	64	11	31	2	50
Relative performance in %		89,21 %	89,93 %	59,71 %	46,04 %	87,05 %	48,20 %	53,96 %	92,09 %	77,70 %	98,56 %	64,03 %
Technological readiness (total of 139)		17	30	56	71	19	47	87	28	43	10	78
Relative performance in %		87,77 %	78,42 %	59,71 %	48,92 %	86,33 %	66,19 %	37,41 %	79,86 %	69,06 %	92,81 %	43,88 %
Physical Distance (in km)		8.428	1.701	1.837	5.323	8.410	601	2.328	9.147	621	582	7.098
Relative performance in %		7,86 %	81,40 %	79,92 %	41,81 %	8,06 %	93,43 %	74,55 %	0,00 %	93,21 %	93,64 %	22,40 %

Country-Rating Analysis 2/2		%	USA	Spain	Turkey	Mexico	South Korea	Poland	Egypt	Japan	Italy	Germany	China
Strawberry production (in t)		30	22,97 %	5,62 %	5,22 %	4,15 %	4,08 %	4,01 %	4,01 %	3,81 %	3,11 %	3,02 %	30,00 %
Growth of production (t)		10	4,26 %	4,70 %	4,61 %	9,99 %	2,75 %	9,02 %	8,96 %	2,38 %	0,98 %	0,00 %	10,00 %
Ease of Doing Business Rank total of 183)		15	14,59 %	10,98 %	9,67 %	12,13 %	13,69 %	9,26 %	7,30 %	13,52 %	8,44 %	13,20 %	8,52 %
GDP (in US\$ billions)		5	5,00 %	0,51 %	0,22 %	0,31 %	0,29 %	0,15 %	0,07 %	1,78 %	0,74 %	1,18 %	1,72 %
GDP per capita		5	5,00 %	3,44 %	0,94 %	0,88 %	1,84 %	1,22 %	0,26 %	4,28 %	3,82 %	4,42 %	0,40 %
GDP growth		10	2,86 %	0,00 %	7,99 %	5,42 %	5,99 %	3,79 %	5,07 %	3,91 %	1,38 %	3,53 %	10,00 %
Market Size (total of 139)		5	4,96 %	4,53 %	4,42 %	4,57 %	4,60 %	4,24 %	4,06 %	4,89 %	4,68 %	4,82 %	4,93 %
Infrastructure (total of 139)		5	4,46 %	4,50 %	2,99 %	2,30 %	4,35 %	2,41 %	2,70 %	4,60 %	3,88 %	4,93 %	3,20 %
Technological readiness (total of 139)		5	4,39 %	3,92 %	2,99 %	2,45 %	4,32 %	3,31 %	1,87 %	3,99 %	3,45 %	4,64 %	2,19 %
Physical Distance (in km)		10	0,79 %	8,14 %	7,99 %	4,18 %	0,81 %	9,34 %	7,45 %	0,00 %	9,32 %	9,36 %	2,24 %
Total %		100	69,27 %	46,35 %	47,03 %	46,38 %	42,72 %	46,77 %	41,75 %	43,18 %	39,81 %	49,09 %	73,21 %

Source: own calculations.

Based on the comparison and weighting the presented data in the Table 2 we are presenting the results of the country analysis in the Table 3.

Table 3 – Country analysis results

Rank	Country	Total %
1	China	73,21 %
2	USA	69,27 %
3	Germany	49,09 %
4	Turkey	47,03 %
5	Poland	46,77 %
6	Mexico	46,38 %
7	Spain	46,35 %
8	Japan	43,18 %
9	South Korea	42,72 %
10	Egypt	41,75 %
11	Italy	39,81 %

Source: own calculations

For answering the research question we developed a country-rating analysis. In the Table 3 an overview of the country analysis results is shown. As it can be seen from the Table China is the global leading producer of fresh and frozen strawberries and its production grew rapidly, with an estimated rate around 10 % each year since 2009. Not only is China the leader when it comes to the production quantity and growth of the strawberry industry, also the economy in general is developing fast, with GDP growth rates around more than 10 %. The USA is ranked second and represents the largest economy in the world, with the highest GDP per country, as well per capita. In this market-oriented economy, the Ease-Of-Doing-Business rank recommends business firms to start operations. Although the strawberry industry has just been recently overtaken by China in terms of growth and size, risks in context with property rights and knowledge theft are estimated much lower. Germany is ranked third and stands for technological advances as well as forthcoming infrastructure. Low transaction costs and sunken country-specific entry costs give Germany a favoured role as target-market.

Below is the main information about three the most potential markets.

China

China is emerging as an important force in the world horticultural market, including in strawberries. China is ranked on top in the country analysis with a more than 73 % strong performance rate. Within three to five years, China overtook the USA in terms of productivity and became the leading player in the global strawberry market. Exports, especially of frozen strawberries, have risen rapidly. China has made inroads into third markets and has replaced the USA as the largest supplier of frozen strawberries. Within three years, from 2003 to 2006 export volume to the USA

increased by more than 500 %. This is followed by Canada and Japan, which substantially increased their imports from China as well (Carter, Chalfant, & Goodhue, 2006). Because frozen strawberries from China cost roughly one-half as much as frozen strawberries from the USA, this trend of an expanding market share for China is likely to continue. Consequently a declining market share for the USA is projected to continue likewise. Hong Kong and the United Kingdom are the two most important markets for China's exports of fresh strawberries. Domestic demand for fresh strawberries is growing rapidly with rising urban incomes and changing consumer tastes. There is broad agreement that China's strawberry production is large and growing rapidly, although the exact size is unknown. According to estimates, total present production may be about 1.7 times as large as the production from the USA. Although its yields per acre are much lower than from the USA, its costs per acre are much lower as well. Estimates of yields and, therefore, production differ widely but it is stated to be roughly six times greater than California's (Carter, CHalfant, & Goodhue, 2005). China's strawberry production is geographically less concentrated than USA's production, with its centre in California. Strawberries are produced in many different provinces in China across the country. Strawberries are more profitable for farmers to produce than many other competing fresh fruits and vegetables in China and thus acreage has grown significantly. The majority of China's strawberry growers are small-scale family farmers who grow a variety of crops. The average grower cultivates less than 0.7 acres in total. Whereas in California, the average strawberry grower has 63 acres of strawberries, although 70 % of growers have less than 50 acres (Strawberry Production Around The World, 2017).

There is no detailed information on the usage of methyl bromide in the Chinese strawberry industry. Articles suggest that some farmers use methyl bromide to fumigate the soil before planting. China has not signed the Montreal Protocol, so it is under no obligation to restrict use or production of methyl bromide. Information on the usage of other fumigants or products more broadly, is also very limited. It is a fact that China's strawberry growers face significant disease problems, which fumigation with methyl bromide, other chemicals or active microorganism can reduce. However, knowledge of effective fumigation techniques and its effects as well as other options is very limited to the majority of growers. Methyl bromide can be purchased in small enough quantities. This means it will soon be a viable option for small growers, if it hasn't made inroads already. However, open-air strawberries by small growers account for only about 20 % of the acreage and have a much shorter harvest season. Before and after that, only greenhouse strawberries are harvested. This means in China roughly 80 % of the strawberries are produced in plastic-covered greenhouses, instead of in fields, as in USA California. Nevertheless, this fact has important implications for future directions of China's industry since the fields of small growers bear big potential. One way or another, if fumigation or other plant treatment becomes more widespread in China, disease will become a less important factor and yields could increase substantially. In addition, the seedling used at the moment will soon be replaced. It is reported that China has an extensive breeding program

underway which could mean a drastic rise of its yields within the next few years (Carter, Chalfant, & Goodhue, 2006).

High-quality imported plants, developed in the USA, Japan or Europe are available in China, but are at least five times as expensive as domestic grower-propagated plants. Only farmers who have special contracts with high quality requirement buyers, such as retail chains or McDonald's, purchase imported plants (Carter, Chalfant, & Goodhue, 2005). Tianyi is currently China's largest grower. The firm owns a solar greenhouse strawberry growing base with over 2,000 solar greenhouses.

Obstacles in China represent the risk of knowledge-theft and the uncertain situation concerning the usage of chemical pesticides. The combination of effective microorganism inside the product can easily be copied and unfortunately the protection of property rights is not well developed. Moreover, China has not signed any treaties yet concerning the usage of fumigants, which means the need for alternative products is probably not as acute as in countries which are forced to limit their usage. In favour for a market entry in China counts its huge market size. Once the deficit in yield productivity is caught up, the strawberry industry in China will increase the gap to the USA even further. In addition, 80 % of all plants are grown inside green-houses and makes its way into the processing industry. This means stable conditions for the plants and consequently the biological plant agent of Biotenz is more likely to unfold its full effect.

Moreover, the industry has been constantly and rapidly changing over the last half a decade. This means new technologies and innovations are trusted more easily than probably in an industry that has been long-established and got used to certain routines. Promising market chances occur out of increasing demand for biological grown fruits, often directly controlled by the buyer. MNCs, like McDonalds, put an emphasis on organically grown fruits and set the same rules for all their suppliers. This forces the farmers to use certain kind of biological plant agents. Therefore retail chains and companies with similar high-standard levels represent important intermediaries which could lead to further synergies as they often operate within various countries.

The USA strawberry industry suffers from the competition in China and they have to work on additional competitive advantages outside the usual mass-production of strawberries. The demand in general, and especially for high-quality fruits, is increasing within and outside the USA. This softens the effect of the additional increasing quantities China is bringing on the market. However, it means the USA is in need for additional competitive advantages. Contrary to China it has already exhausted productivity with hybrid plants and well-established growing conditions. This means, strawberry plants in the USA grow up to five times more fruits than plants in China. Competitive advantage could result out of supply to organic niche markets or with fruits put on the market outside the main season where the price is low. If *Fragola* could successfully enhance the taste of fruits put on the market before and after the main season, buyers are willing to invest as the margin is considerable higher. Market chances are brought down with the unclear situation in terms of methyl bromide usage. Whereas the Montreal Protocol has severely restricted the use

of methyl bromide internationally, the USA has successfully lobbied for critical-use exemptions. Moreover the greenhouse production is not as much used as in China. Florida however represents an exception with it's a high tech hydroponic strawberry industry and exceptional growth within the USA.

United States of America

USA firms and industry are at or near the forefront in technological advances, especially in agricultural scientific areas. In this market-oriented economy, business firms are able to make many decisions themselves with less government interference than in China. The United States holds the largest food processing industry in the world, which is very influential to the agricultural sector. Processed-consumer-goods producers control and set the conditions for the agricultural sector in terms of plant strengthening or fertilizers (CIA, 2011). Until recently, the USA used to be the world's largest producer and supplier of strawberries. Despite the competing role of China, the production and consumption of strawberries in the USA continues to grow. Strawberries are the fourth highest ranked fruit in the USA in terms of value of production and are produced for both the fresh as well as the frozen market. However, the fresh-market production is larger than the amount of berries produced for processing. The strawberry has become the focus of a California industry whose annual sales exceed more than 800 million dollars. American farmers now receive more money for fresh strawberries each year than for any other fresh fruit grown in the United States, except apples. Strawberries are grown in every state in the United States but production is concentrated in California with Florida and Oregon also contributing to the nation's supply. Approximately 80 % of the fresh and frozen strawberries intended for export to wholesale markets are grown in California (Strawberry Production Around The World, 2017).

The south and central coast of California is one of the ideal growing environments for strawberry production. Almost year-round production has been achieved because there are growing regions in both the northern and southern parts of the state. California sales into both, the fresh and processed markets, but frozen imported strawberries from China have influenced the demand (Han, Carter, & Goodhue, 1999; Bertelsen, 1995). Florida also produces a large amount of strawberries, but mostly for the fresh export markets. In addition it is the major producer of winter strawberries in the United States. The value of Florida's strawberry has more than tripled in the last two decades and has an impact of about \$200 million in the growing areas. Florida has two great advantages: it has a high tech hydroponic strawberry industry and it has milder winters, which allows for longer life spans on fruits. (Bertelsen,1995).

Oregon produces approximately 3 % of the nation's strawberries. Oregon supplies to a niche market with the majority of the berries produced for processing. Due to Oregon's climate, local strawberries are known for exceptional sweetness and taste. Unfortunately, the strawberry season in Oregon lasts only three to four weeks in the beginning of summer. The price of Oregon strawberries is influenced by the price of California strawberries. However, recently growers have been unable to cover their cost of production due to a lower market-price of strawberries. Oregon strawberries are costly to produce; therefore they require a greater price in the market to remain

viable. Oregon the minimum wage recently increased, as a result the per kg wholesale price increased further. This hurts many growers and they have been reducing their strawberry acreage and focus on other plants instead (Han, Carter, & Goodhue, 1999). The long growing season in those three areas makes it possible to produce fruit 6 to 8 months out of the year.

Although greenhouse technology for producing 'off-season' vegetable crops is available, strawberry growers in the USA. have not yet adopted these techniques. Whereas China managed to produce rather stable volumes through their increase of 'off-season' strawberry production the USA has been relying on volume sales during the regular season for making a profit (Carter, CHalfant, & Goodhue, 2005). Most of the strawberry production in the USA is done by growing the fruit in soil. Strawberry production under protective structures like greenhouses, tunnels or hydroponic systems, as it is frequently used in China, is not very common in the USA. Almost 100 % of the strawberry production is done in the field, using rather old fashioned methods (<http://hos.ufl.edu/ProtectedAg/Strawberry.htm>, 2011). In return to the growing conditions, which do not support the application of Fragola, changing regulations are creating a more favourable situation for Biotenzz in the USA: Methyl bromide, a chemical brew that kills harmful microbes and nematodes, is a widely used fumigant in agriculture. The majority of California's strawberry acreage is fumigated before planting, with methyl bromide or another fumigant, to control pests and diseases. Since 2005 the USA has forbidden its usage because it is classified as a gas that depletes the ozone. In 2006 the ban got lifted again because of dangerously high yield losses for the industry. However, this ban has opened up the market as agricultural producers in the USA are in need for alternative products to replace methyl bromide. Since the majority of fruits imported for processing are now from China, it can be assumed that retail industries also set rules some Chinese growers.

Germany

The strawberry industry in Germany is, comparatively to China and the USA, extremely small and strongly decreasing. The annual reduction from 2007 to 2008 reached minus 5, 17 %. It can be expected that more growers will shift to other plants in the upcoming years, because of cheaper imports from other, less cost-intensive growing nations. Strawberry plantations are situated all over Germany, with the largest growing areas in Baden Württemberg (<http://www-proj.loel.hs-anhalt.de>, 2010). The market in Germany is characterized by a strong focus to supply the wholesaler with domestic fresh strawberries. Strawberries for the processing industry are mostly bought in from other countries. Strong competition on the strawberry market leads to an increasing price pressure, especially during the fruit's seasonal months. Therefore the producers try to offer as early as possible or after the main season has finished.

Production costs with premature plant cultures are however considerably higher. Growing institutions are willing to invest because there is hardly any money to be made during the main season as European competition is to inexpensive. There is chance for Biotenzz to enter the market successfully, if Fragola enables strawberries, grown before or after the main season, to taste more intense. Additionally there is a close link of the Austrian economy to its neighbour country

Germany which can be an advantage. For example can products be delivered without changing the language on the product description or product label, if it is not in English in the first place anyway. More importantly is the communication itself enhanced though a less cultural and physical distance. (Bürgel, Fier, Licht, & Murray, 2003, S. 8)

Regarding the obstacles, Germany is slowly withdrawing from the role it represented at the international strawberry market and produces primarily for its domestic fresh market. The major problem is the flood of cheaper fruits during the main season and consequently the main need for German growers are measures that support outside-season sells. Although the market is decreasing and comparative small, the technological readiness and very good infrastructure is available. In addition the closeness of the Austrian and the German market can be a major advantage. Germany has the potential to serve as a stepping stone as well as a less cost intensive country to start off business then USA or China.

CONCLUSION

Analyzing the strawberry industry altogether in context with the market entry of Biotenzz, positive and negative arguments become clear. In general, the industry is growing and characterized through many modifications. These changes include technologically advanced growing systems, consumer behaviour, new cultivating areas in China and intentions to decrease the application of pesticides harmful to the environment.

This article found a number of aspects which help to explain and support the rich matter of an international market entry. However this article offers substantial room for future research as this study raises a number of additional questions. Future studies can analyze data and experience gained once the business started to operate which enables to indicate further recommendations and re-establishment of the internationalization strategy. At a later point, with more contacts established and experts available, a more detailed research may be possible. Other aspects of the internationalization process, such as the best possible foreign entry mode, are beyond the scope of this paper.

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APPENDIX

This section provides definitions of the criteria used in the country-rating analysis of eleven target-markets. In the country-rating calculation the European mathematical punctuation is used.

Indicator	Definition	Source
Strawberry Production (of 2008 in metric tonnes)	Measures the current strawberry production of a country.	FAOSTAT Agricultural commodities, 2008
Growth rate of Strawberry Production	The product-specific market growth, based on production, allows estimation about future growth. Whereas current strawberry production is assessing the potential present demand, the growth rate evaluates rather future demand. Growth is calculated out of the difference in production t of 2007 to 2008.	The Gloal Competitiveness Report 2010-2011, 2010
GDP	GDP is a measure of the total economic activity in an economy and determines each nation's purchasing power. In contrast to GNP, it also includes products produced by companies with foreign ownership. GDP is very useful as it allows comparison of purchasing power across countries (wikipedia.org/Gross_domestic_product , 2011).	The Gloal Competitiveness Report 2010-2011, 2010
GDP per Capita	The GDP as a total is a measure of the total output of a country. The per capita GDP shows the relative performance of a country and the level of economic development; therefore it is especially useful when comparing one country with another (wikipedia.org/GDP_per_capita , 2011).	The Gloal Competitiveness Report 2010-2011, 2010
GDP Growth	The GDP growth rate is the most important indicator of economic health. Growth is calculated out of the difference of GDP in 2009 to 2010 (wikipedia.org/List_of_countries_by_real_GDP_growth_rate_(latest_year) , 2011).	http://data.worldbank.org , 2011

Market Size	As empirical evidence shows, the size of a market affects productivity and growth. Larger markets enforce economies of scale and allow companies to grow larger than within smaller countries. The Global Competitiveness Report (2010) includes both, domestic and foreign markets in to measure the market size. The total score consist of 75 % domestic market size and 25 % foreign market size. (p. 8)	The Gloal Competitiveness Report 2010-2011, 2010
Ease of Doing Business Index	This Index, created by the World Bank, is especially suitable as it combines a number of sub indices. A high ranking indicates better, usually also simpler, regulations to start a business. Procedures, time, cost and minimum capital to open a new business are therefore evaluated. In addition it stands for stronger protections of property rights, which needs to be particularly considered in the biotech industry. Among other things it also looks at the number of documents, cost and time necessary to export and import (wikipedia.org/Ease_of_Doing_Business_Index, 2011).	Ease of Doing Business Rank August 2001
Infrastructure	Extensive and efficient infrastructure is critical to enable Biotenz to get their goods save and secure to the market. Especially agricultural companies are depending on a well developed transport and communications infrastructure to receive goods in good condition at the right time. Biological plant agents have living microorganism inside, which get harmed through high temperature fluctuations or long shipping times. A well developed infrastructure is therefore a basic requirement. (The Gloal Competitiveness Report 2010-2011, 2010, p. 4f).	The Gloal Competitiveness Report 2010-2011, 2010
Technological readiness	The technological readiness indicator measures the agility with which an economy adopts existing technologies which enhances the productivity of its industries. To save costs Biotenz relies on up-to-date information and communication technologies in daily activities. Furthermore production processes need to use modern technology which is developed enough to use biological plant agents efficiently. This parameter indicates as well the ability to adapt new technological processes and products (The Gloal Competitiveness Report 2010-2011, 2010, p. 7f).	The Gloal Competitiveness Report 2010-2011, 2010
Physical Distance	Measures the distance between two points in km.	www.freemaptools.com, 2011