PotatoChipsMachinery

The Pre-feasibility Study of Potato Chips Industry in Singapore

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1. **Executive Summary**

Potato chips are popular among the young and the old. It is the most-lasting business. Potato chips are in high demand in Singapore, however there is limited supply from local supplier. This research is mainly about the current market situation of potato chips in Singapore, which can show us the overall perspective of potato chis market.

As Singapore is an island country, 90% percent of its foods are imported from other countries. So there are only a few local potato chips industries in Singapore. A new potato chips brand stands a great chance to enter the Singapore potato chips market.

2. Introduction to Singapore

Singapore is an ASEAN member state that sits at the heart of the ASEAN (Southeast Asia) region, which is now coming together under the ASEAN Community. it is a free port style showcase for products that can be marketed through its re-export channels. A multitude of products are re-exported, some of which are relevant to the USA. Key re-export destinations exist across the region, with Indonesia becoming more important every year as a result of its economic boom.

Singapore does not produce potatoes for limited land. All the potatoes are imported from other countries. Because of its free ports and tariff free and little tariff restriction, the imported potatoes are in reasonable price. Though without local material suppliers, potatoes from other countries can still meet the market demand and enough for potato products producing.

3. The Market of Potatoes in Singapore

3.1 Plenty of supplier countries

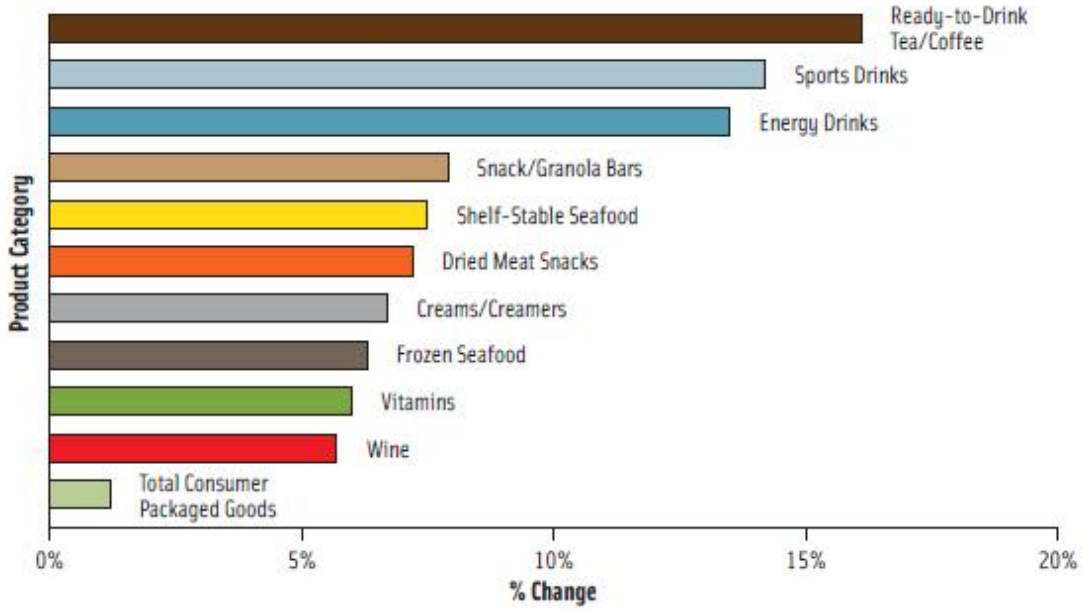
Singapore is located in Southeast Asia, and lies off the southern lip of Malaysia. Therefore, it has plenty of potatoes supplier countries, such as Indonesia, Canada, Malaysia, USA, China and so on. Each year Singapore imports large amount of potatoes from these countries.

3.2 Favorable Import Environment of Potatoes

Potatoes as an agricultural product enjoy a favorable import environment in Singapore which help potatoes remain in a fair price. As narrow homeland and high density of population make Singapore high dependent of international market of agriculture products, its imported food accounted for over 80% of the domestic food consumption. However, Singapore is famous in the world with duty-free access to agricultural products and will remain as a tax exemption for agricultural products import without trade restrictions.

In 2011, the net import fresh potatoes account to 41,925 tonnes, 35% from China, 22% from Bangladesh, 13% from USA, 9% from Indonesia, 7% from Australia. This market is generally price competitive , with the USA.

4. Singapore & Snacks Industry



In Singapore, sales of sweet and savoury snacks increased by 4% to reach $ 126 million in 2012. Consumers are expected to choose the healthy variants of snacks. Since healthier snacks are often produced by smaller dedicated players which focus on quality and providing all-natural ingredients, the competitive environment might change over the long term forecast period. Sweet and savoury snacks are expected to see a constant value CAGR of 2% over the forecast period.

Other sweet and savoury snacks including potato chips are expected to see the fastest growth with a constant value CAGR of 3%. Since this category remains smaller in size and very fragmented in terms of market shares, there is still room for growth as well as increasing the shelf space at retailers. Potato chips included in this sweet and savoury snacks, is well accepted by local consumers. New brands of potato products are likely to be introduced by local players and have a potential market.

5. The Market of Potato Chips

5.1 A Short Overview of Potato Snacks Food

Potato chips, potato crisps and French fries are the main potato products in the market in Singapore. Both potato chips and potato french fries business are the most long-lasting profitable industries. As they are tasty and in high nutrition, potato snacks are popular all over the world.

Potato Chips & French Fries Nutrition Containing

Serving 100g	Potato Chips	French Fries
Calories	547	274
Carbs	49.74g	35.71g
Fat	37.47g	14.08g
Protein	6.56g	3.49g

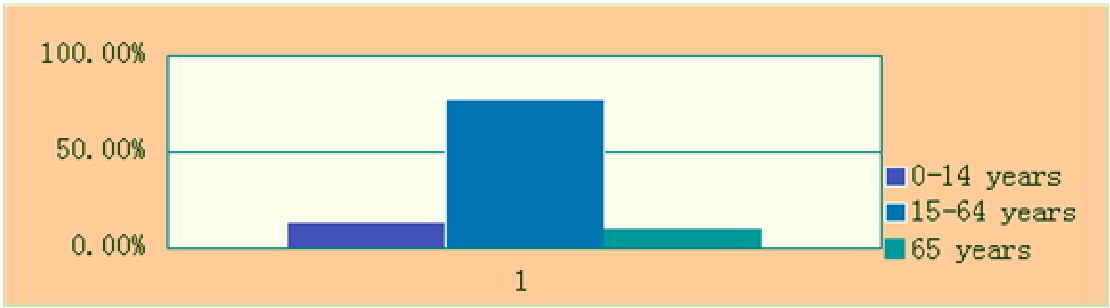
5.2 The Current Status of Potato Chips in Singapore

As Singapore has little potatoes production and has a high demand for potatoes, Singapore also imports frozen potatoes. Its net imports of frozen potatoes is 22,655 tonnes in 2011. 77% of frozen potatoes imported from USA and 15% from Canada. French fries and hash browns are marketed under Singapore private lables, e.g. Farmland (U.S. origin), with Ore Ida (USA) and McCain (Canada) also have quite strong distribution access to retailers.

Due to consumer demand, potato chips manufacturers are working to offer healthy and quality products with palatable texture and taste:

- Healthy – low fat, low calorie, no transfat and acrylamide;
- Natural – without the use of genetically-modified organism (GMO) ingredients and chemical additives;
- Palatable texture with ethnic taste or flavor;
- Attractive appearance and convenient packaging; and
- Indulgent for adults and enjoyment for children.

5.3 Target Customer



- High income and upper-middle income local consumers----Singapore has a diverse demographic base which has impacted consumer trends of potato products, potato chips and French fries in the country. This segment of consumers is very well educated and ‘westernized’ and is made up of two main groups:

middle-aged (mainly aged 40-64) who have higher disposable income, and whose sophistication of taste comes largely from travel, and a younger group (those in their twenties and thirties) who has grown up on modern western cafes and fast foods, especially, potato chips and French fries, the media and influence from their peers.

- Middle Income Local Customers----Most of the Singaporeans are middle income. Potato chips as a snacks food is affordable for most people. As the lifestyle of Singaporean consumers become increasingly hectic due to economic growth, consumers have more and more sought easy and convenient meal options in order to save time and ready meals and fast food have benefited from this trend. So potato chips and French fries are always good options for them.
- University Students----As an international country, university students in Singapore come from all over the world, and are westernized. Therefore, their eating habits are influenced by western eating style. Potato chips enjoy high popularity among them during snacks food.
- Young Children----As a snack, potato chips are the most popular among the young with the delicious taste, good smell, fantastic flavor.

6. Production Process

6.1 Production Process Plant

The potato chips manufacturing industry should b equipped with the following machines:

- Washing & Peeling Machine - For washing and peeling fresh potatoes. Equipped with soft brush, potato washing and peeling machine can remove the thin peel completely and efficiently.
- Potato Chips Machine - For slicing potatoes into chips or slices. The potato chips machine can cut peeled potatoes into slices, chips and shredded potatoes. Rollers and cutters can be adjusted for potato slices and chips in different thickness.
- Potato Chips Blanching Machine - For pre-cooking the chips. Kill harmful bacteria and keep original flavor in food. Blanched potato chips has fresh color and vegetable scent.

- Potato Chips Dehydration Machine - For draining the water on the surface of chips. Adopting the centrifugal de-watering methods, remove the surface water on blanched potato chips. Potato chips and strips after de-watered can be fried easily in the following frying machine.
- Potato Chips Frying Machine - For frying the chips. Adopting advanced oil-water mixture technology, it can save oil 50%, save power 40%. The fried chips or French fries have attractive luster and flavor.
- Potato Chips De-oiling Machine - For draining the oil on the surface of chips. Adopting centrifugal principle, remove extra oil on fried potato chips and French fries. And at the same time de-oiling technology can reduce production cost.
- Potato Chips Seasoning Machine - For flavoring the chips. Potato chips and French fries can be added with various sauce for different taste. There are three flavoring ways: disc type, octagonal type and drum type.
- Nitrogen Filled Potato Chips Packaging Machine - For packaging the chips. Flavored potato chips need to be packaged quickly before going bad. Potato chips sealed in bags full of nitrogen would not react with oxygen. Packaged potato chips can reserve for a long time without any taste losses. The shelf life can be lengthened.

6.2 Potato Chips Process Flow

- Material selecting: Select fresh potatoes with light eyes,regular shape, mildew rot, sprouting and insect infestations and other phenomena.
- Washing and Peeling: Use potato washing and peeling machine to remove the dirt, sand and other debris.
- Potato Slicing: Use the potato chips machine, feed at a constant speed, the thickness should be 1~2mm.
- Blanching: Use potato chips blanching machine. Immerse the potato chips into 100 ℃ water to blanch to the potato chips with thickness of 0.5 cm for 60 s to prevent browning in the air, and wash away the free starch of the surface.
- De-watering: Use potato chips dehydration machine. Remove surface water at 60℃ for 5 min, to avoid increasing the frying time and increase the oil content of the final product.
- Frying: Use potato chips frying machine. The potato slices should be put into the oil at a constant speed. The oil temperature should be at 180~200℃. The chips should pass the frying pan in 2min. Palm oil is usually used in this process.
- De-oiling: Use potato chips de-oiling machine. After frying, use the de-oiling machine to remove the oil of the surface, and it can extent the shelf life of the product.
- Seasoning: Use potato chips seasoning machine. After flavored by seasoning machine, different flavor of potato chips are made.
- Weighing and Packaging: Use Nitrogen Filled Potato Chips Packaging Machine. After cooling, weigh the final potato chips, then pack chips into bags which can extend the shelf life without the flavor loss.

7. Favorable Environment for Investment

7.1 Support from Government

Singapore has long been known as the Asian entrepreneurial paradise. In Singapore, tax bureau, economic development, international business development departments provide a variety of support for the small micro and middle scaled enterprise. Nowadays in Singapore, there are more than 15 million companies, of which 1500 for large enterprises, 3 million miniature enterprise of small and medium-sized enterprises up to 12 million. In recent years, the government activity promote economic transformation, the key is to help small micro enterprises to innovate and improve productivity.

7.2 Re-export

Singapore potato chips are exported to many countries. It imports the material and processes potatoes into high quality potato chips to exported. As Singapore is an island country, it is very convenient for potato chips exports. There are free ports for export. With advanced technology, Singapore can save lots of cost during the potato chips production to increase the benefit.

7.3 Tourism Industry

As a Garden City, every year lots of visitors come Singapore, which increases the demand of potato chips and French fries for they are in high quality and special taste and are a portable and convenient fast food. The market of potato products is enlarged for this reason. Singapore as a city-state in Southeast Asia, combining the skyscrapers and subways of a modern, affluent city with a medley of Chinese, Malay and Indian influences and a tropical climate, with tasty food, good shopping and a vibrant night-life scene, makes a great stopover or springboard into the region to boom the market.

Increasing tourism industry bring lots of customers around the world. Most of them are influenced by western eating habits or come from western countries. They used to eat fast food, especially, potato chips and French fries. With increasing number of tourists, the potato chips market is on the rise.

8. Conclusion

With the import foods accounting for more than 80% of the domestic food consumption, the potato chips market of Singapore is lack the local brand. A new player stands great chance of entering the local potato chips market through providing premium quality and special taste potato chips and French fries, and a great amount promotion activities.

The market vacancy of local potato chips brand is a great chance for new players, combining with good investment environment, favorable import and re-export policy for agricultural products, including potatoes, a large amount of target consumers.