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The Pre-feasibility Study of Potato Chips Industry Investment in Uzbekistan

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1. Summery

Uzbekistan as a developing country with a population of over 30 million, is one of the important potential markets in Central Asia for potato chips. With the structure of Uzbekistan's economy is changing as the shares of industry and services in GDP increase, the snack food market is on the rise. The proposed project involves in setting up a potato chips industry in Uzbekistan which is equipped with automatic potato chips machines that can produce chips efficiency. In this paper, it mainly analysis the current snack food market, potato market, potato chips market and the opportunities to set up a potato chips plant, and all these contribute to the whole overview of the food market of Uzbekistan.

2. Introduction to Potato Chips Industry

Potato chips are the most popular savory snacks food in the world. And potatoes are a world food and second to rice in the world. Potato chips are one potato products loved by most people around the world because of their special crispy, flavor, smell and taste.

Potato chips industry is a plant producing potato chips, frozen French fries, fried French fries with automatic potato chips machinery. The production of potato chips is in high efficiency and can save labor and reduce material and energy waste. For large scale production, the factory is equipped with automatic potato chips plant. And for small and middle scale production of potato chips, the factory is equipped with semi-automatic potato chips plant.

Uzbekistan as a Central Asia country, its climate is suitable for planting potatoes. Every year, it produces quantities of potatoes for local consumption and in the future, the government plans to enlarge the potato planting area. Besides that, Uzbekistan can also import fresh potatoes from neighbor countries, such like Russia in a low prices as now Russia is in inflation.

Uzbekistan's Potato Production by regions (CY2010-2013)

Regions	2010		2011		2012		2013	
	Plant Area (hectares)	Production (tons)	Plant Area (hectares)	Production (tons)	Plant Area (hectares)	Production (tons)	Plant Area (hectares)	Production (tons)
Karakalpakstan	6000	31100	4600	32900	5100	36400	5300	39435
Andijan	5600	169500	5600	179900	6100	201200	6400	231910
Bukhara	3600	115200	3900	128200	4200	141700	4400	157479
Djizakh	1900	38300	1600	43200	1600	46200	1700	50673
Kashkadarya	6200	97700	6400	112000	7000	126300	7300	140149
Navoi	1200	42700	1300	45800	1400	51200	1450	58238
Namangan	6100	152800	6500	167000	6700	188100	6900	207279
Samarkand	10900	371700	10700	409100	11600	449500	11800	480881
Surkhandarya	7400	127600	9200	145100	8900	159000	9000	174879
Syrdarya	1900	28800	1800	30900	1700	33600	1800	36506
Tashkent	7700	268800	8100	291400	8400	319700	8600	336715
Ferghana	7700	170100	8500	189000	8300	208000	8450	234358
Khorezm	4600	80500	5500	88000	5200	96300	5400	101864
Total	**70800**	**1694800**	**73700**	**1862600**	**76100**	**2057200**	**78500**	**2250366**

3. Crucial Factors & Steps in Decision Making for Investment

3.1 SWOT Analysis

SWOT analysis mainly gives out the general situation of the whole potato chips market in Uzbekistan. It is quite important for decision making of investment.

STRENGTHS

- Plentiful raw material, fresh potatoes
- Cheap labor force
- High automatic potato chips line
- Government support for industry building
- Less competition in potato chips market

WEAKNESSES

- Lack of storage facility.
- Economy remains less developed.

OPPORTUNITIES

- Market vacancy for potato chips
- Increasing of people's income
- Food processing industry is on the rise
- People's passion for western snacks food
- The development of globalization

THRESTS

- Competition from increasing new brands launch into Uzbekistan.
- Less developed technology.

3.2 Key Success Factors

A new brand entering a market always faces lots of uncertain factors. In order to gain success, some key success factors should be referred to. When a new brand enters a market, a heavy budget towards promotion activities should be allocated. The marketing plan and promotion and advertisement are all needed.

The Key Success Factors are as follows:

- Utmost care should be taken when selecting fresh materials
- Reduce the waste during the production
- Innovate new flavor potato chips to meet the market demand. Combine the diet style of Uzbekistan and western.
- Keep good quality of the products all the time.
- Increase the production efficiency and increase the utilization of the raw material.

4. Uzbekistan Potato Production

Table 1. Potato production in Uzbekistan, 1991–2002

Year	Area (000 ha)	Production (000 t)	Yield (t/ha)	Prod'n at dehkan farms and households (%)
1991	40.0	351	8.7	45
1994	-	567	-	55
1995	45.8	440	9.6	67
1997	57.6	691	12.0	80
1998	54.6	691	12.6	72
1999	48.0	650	12.4	82
1999	51.3	731	14.2	80
2001	50.8	744	14.6	85
2002	48.9	777	14.3	88

Potato is an important crop worldwide and potato is the third cash crop in Uzbekistan after cotton and wheat. Before independence, the consumed potatoes were imported from Russia and Belarus. In nowadays, potato production is increasing rapidly which can meet the domestic consumption, as in Uzbekistan, there are about 4.3 billion ha of irrigated land, out of which 4.9% are occupied by potato, vegetable and melon crops and the potato planting area will increase in the future.

In 2010, the potato production increased about 2 million tons with the increasing in land area of potato planting. In January, 2015, Uzbekistan said, the government made a plan that to optimize the cotton planting area, and set aside some farmland for planting vegetables and potatoes. With the planting area increasing and the introduction of good potato seeds, the potato production will increase fast. Uzbekistan also plan to implement 391 food industry investment and build 2000 cold storage to increase the total amount of cold storage to 2 million tons.

Variety of Potatoes in Uzbekistan & Mineral Compositions of Potatoes

Variety	Iron (Fe mg/100g FW)	Zinc(Zn mg/100g FW)	Calcium(Ca mg/100g FW)	Phosphorus(P MG/100g FW)
Tuimli	0.31	0.38	5.59	68.00
Nevskiy	0.40	0.41	8.26	58.00
Umid	0.28	0.27	4.71	45.00
Picasso	0.37	0.31	8.85	53.00
Kondor	0.26	0.35	4.10	52.00
Diamant	0.24	0.42	6.00	54.50

Mondial	0.26	0.26	6.82	39.00
Kuroda	0.28	0.40	4.29	55.00
Arinda	0.38	0.44	5.51	47.00
Sante	0.33	0.38	9.26	50.00
Mean	0.31	0.36	6.34	52.15
CD (P<0.05)	0.10	0.10	0.80	0.73
CV %	3.56	0.91	3.87	0.43

5. Potato Chips Market in Uzbekistan

5.1 Uzbekistan & Snack Food Industry

The food processing industry is one of the fastest developing fields of the economy in Uzbekistan. If the agricultural sector is reformed and trade barriers are eliminated, the market for potato chips will expand and Uzbekistan will have the potential to develop into a major food exporter to Central Asia, Russia, Eastern Europe.

5.2 Potato Chips Market

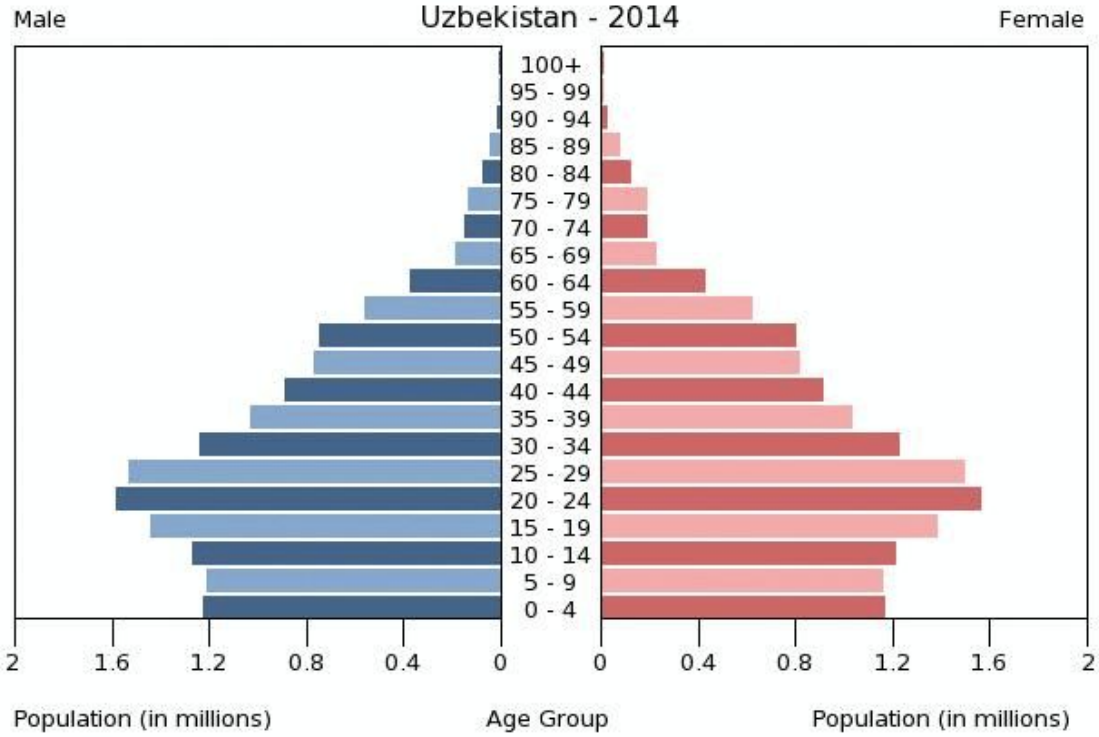
Uzbekistan as a developing country, has a rising snacks food market. As for the potato chips market, there is a market vacancy as there are still few potato chips/crisps producers in Uzbekistan. With the development of globalization and the increasing of people's life standard, and the passion for the western snacks food of Uzbekistan people, more and more people begin to try western snacks food. The potato chips begin to rise in Uzbekistan.

In 2007, Russian company launched shacks production in Tashkent mainly producing a popular salted baked bread snack, potato chips, as Sibrisky Bereg is the manufacturer of the popular brands of baked bread snacks, potato chips, sunflower seeds. This launch of the company in Uzbekistan reduced at least 20% of the company's cost.

5.3 Target Customers

In Uzbekistan, sweet snacks and savoury snacks foods have different target customers according people's events. Potato chips/crisps are always eaten in outside, such as cinema, going out, or as a school lunch. So potato chips/crisps are sold around street, restaurants, cinema etc. As market research shows that 50% of kids, teens and 18-24s people say they eat salty snack foods about fives times each week and some may eat more. Adults say they eat salty snacks 4.8 times each week. Therefore the target customers of potato chips/crisps can be as follows.

- Young people
- School children
- Middle people who have a busy life



6. Potato chips production

The technological process flow is as follow:

- ***Material Selection***: Select fresh potatoes of high dry matter content, pure varieties, light eyes,regular shape, free from mildew rot, sprouting and insect infestations and other phenomena, 50~70mm in diameter.
- ***Potato Washing and Peeling***: Use potato washing and peeling machine to remove the dirt, sand and other debris. Feed 30~40kg each time, the peeling time is determined by the degree of freshness of material, usually 3~8min.Peeling time should not be too long or the potatoes will be excessive peeled.
- ***Potato Slicing***: Feed the material into the potato chips machine, feeding at a constant speed, the thickness should be 1~2mm.
- ***Potato Chips Blanching***: Use potato chips blanching machine. The potato slices should be immersed into water to blanch, in order to prevent browning in the air, and wash away the free starch of the surface to avoid the starch dissolving into the oil and shorten the life of frying oil.
- ***Potato Chips De-watering***: Use potato chips dehydration machine. Remove surface water, to avoid increasing the frying time and increase the oil content of the final product.
- ***Potato Chips 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.
- ***Fried Potato Chips 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.

- ***Potato Chips Flavoring***: Use potato chips seasoning machine. After flavored by seasoning machine, different flavor of potato chips are made.
- ***Potato Chips Weighing and Packaging***: Use Nitrogen Filled Potato Chips Packaging Machine. The product needs quantitative packaging, net content error <±10%. To extend the shelf life, it need the use of aluminum-plastic composite bag vacuum nitrogen packaging.

7. Conclusion

In Uzbekistan, snacks food market is on the rise. With the development of globalization and people's tendency to foreign diet, potato chips market is increasing rapidly and full of potential. A new producer entering into this market has great chance to success.