

## ICE CHAIN Gross Profit Model

This model helps to answer the following questions on ICE CHAIN project:

1. Where revenue comes from
2. What are operational expences
3. How they depend on market situation
4. How gross profit is calculated
5. How much money are needed for working capital
6. How long the payback period could be

### Important notes:

This model poses schematic representation of key business processes of ICE CHAIN as if the company was established in one of 3 regions (Europe, USA, Russia). We aim to show you the basic concept. To make this model simple and comprehensible, we set aside the following questions:

- 1) Structure and value of initial capital expences. They may include the costs of developing, testing and bringing the product to the market. To take this factor into account and calculate the payback period, you may type an assumed value of capital expences in the Dashboard.
- 2) Taxation details. We try to build a one-size-fits-all model which could be adopted for any country, so we put aside taxation details. You may set the total taxation level as % of gross profit in the Dashboard.
- 3) Some other operational or non-operational costs which lie outside of our business model and depend on the exact business situation. Nevertheless, you may set the value of additional monthly operational costs in the Dashboard.

### Instructions

**The Dashboard** is to set basic assumptions and drivers and display some key results.

**Market Inputs** are to type in the market conditions and to edit Market Share Scenarios and Franchisee's Contribution Scenarios.

**Direct Costs** are to calculate the cost of production of temperature logger device.

**MODEL** displays the calculations of total revenue, total operational expenditures and gross profit. Green cells are editable. Change the values in green cells to see how it affects the other measures.

### Key drivers

**Country.** By choosing country, you choose the relevant market volume, production costs and average TDL market price which are taken from Market Inputs.

**Annual market growth.** The market volume grows every quarter by 1/4 of annual growth.

**Coldchain multiplier.** Equals an average number of subjects in cold chain, or, in other words, how many smart contracts are created per one vaccine batch on its way to consumer. This driver helps to calculate the total value of delivery contracts to be serviced by ICE CHAIN.

**Market share scenario.** Choose how fast ICE CHAIN should conquer its market share. The scenarios may be edited in Market Inputs.

**Taxation level.** Decreases the total gross profit.

**TDL price.** The price on our TDL compared to average market price.

**Smart contract fee.** Average fee size, % of smart contract value.

**Buyback price.** The % of TDL price paid to customer to get the used TDL back

**Franchisee's contribution scenario.** Choose how big is the role of franchisees' in business

**% of TDL repeated usage.** How many TDLs will be used repeatedly after arriving at the destination point.

**% of TDLs buyback.** How many TDLs will be bought out after arriving at the destination point

MARKET ASSUMPTIONS	
Country	European Union
Base market volume, USD mln	7,800.00
Market volume, x1000 doses	3,200,000
TDL production cost, USD	19.89
TDL average market price, USD	40.00
Annual market growth	4.0%
Coldchain multiplier	3.5
Market share scenario	Realistic (66% after 4 years)
Taxation level, % of gross profit	30%

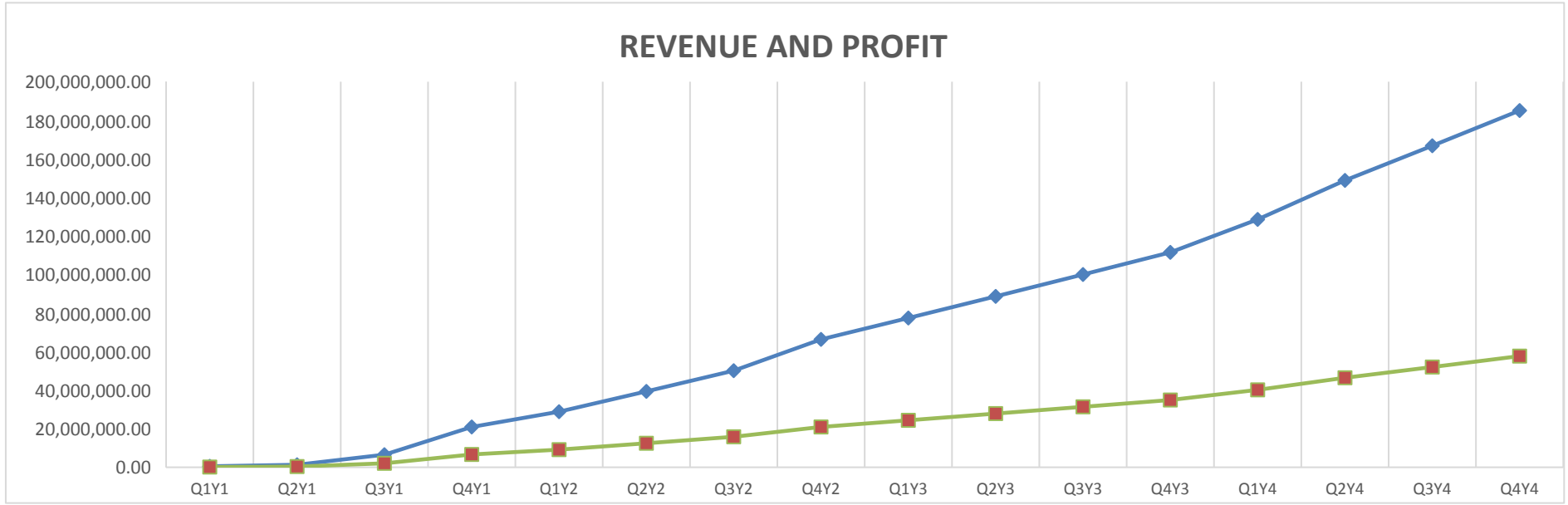
WORKING CAPITAL ANALYSIS	
Required working capital investments, USD	0.00

TOTAL INVESTMENTS	500,000.00
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PROFIT ANALYSIS	
Other monthly operational costs, USD	20,000.00
Initial CapEx, USD	500,000.00
CapEx payback period	Q2Y1
Total investments payback period	Q2Y1
Gross profit margin (after 4 years)	31.20%

MARKET STRATEGY	
TDL price, % of average market price	95.00%
Smart Contract fee, % of smart contract value	0.30%
Our share in franchisee’s fees, %	50.00%
Discount on TDLs for franchisees	15.00%
Buyback price, % of TDL price	50.00%
Frachisee's contribution scenario	Medium (70% after 4 years)
Marketing costs, % of income from head company	6.00%

TECHNICAL	
Doses per one TDL (pack size)	100
% of TDL repeated usage	20%
% of TDLs buyback	33%



	Q1Y1	Q2Y1	Q3Y1	Q4Y1	Y1	Q1Y2	Q2Y2	Q3Y2	Q4Y2	Y2	Q1Y3	Q2Y3	Q3Y3	Q4Y3	Y3	Q1Y4	Q2Y4	Q3Y4	Q4Y4	Y4
REVENUE MODEL																				
Total market volume, x1000 USD	6,825,000.00	6,893,250.00	6,962,182.50	7,031,804.33	27,712,236.83	7,102,122.37	7,173,143.59	7,244,875.03	7,317,323.78	28,837,464.77	7,390,497.02	7,464,401.99	7,539,046.01	7,614,436.47	30,008,381.47	7,690,580.83	7,767,486.64	7,845,161.51	7,923,613.12	31,226,842.10
Total market volume, x 1000 doses	800,000	808,000	816,080	824,241	3,248,321	832,483	840,808	849,216	857,708	3,380,216	866,285	874,948	883,698	892,535	3,517,466	901,460	910,475	919,579	928,775	3,660,289
Market share, %	0.2%	0.5%	2.5%	8.0%		11.0%	15.0%	19.0%	25.0%		29.0%	33.0%	37.0%	41.0%		47.0%	54.0%	60.0%	66.0%	
Doses per one TDL	100	100	100	100		100	100	100	100		100	100	100	100		100	100	100	100	
% of TDLs repeated usage	20%	20%	20%	20%		20%	20%	20%	20%		20%	20%	20%	20%		20%	20%	20%	20%	
% of TDLs buyback	33%	33%	33%	33%		33%	33%	33%	33%		33%	33%	33%	33%		33%	33%	33%	33%	
Market share volume, x1000 USD	13,650.00	34,466.25	174,054.56	562,544.35	784,715.16	781,233.46	1,075,971.54	1,376,526.26	1,829,330.94	5,063,062.20	2,143,244.13	2,463,252.66	2,789,447.02	3,121,918.95	10,517,862.76	3,614,572.99	4,194,442.79	4,707,096.90	5,229,584.66	17,745,697.34
Market share volume, x 1000 doses	1,600	4,040	20,402	65,939	91,981	91,573	126,121	161,351	214,427	593,472	251,223	288,733	326,968	365,939	1,232,863	423,686	491,656	551,748	612,992	2,080,082
Total TDLs required, pcs	16,000	40,400	204,020	659,393	919,813	915,732	1,261,212	1,613,511	2,144,271	5,934,726	2,512,228	2,887,329	3,269,681	3,659,392	12,328,630	4,236,862	4,916,563	5,517,476	6,129,916	20,800,817
Total TDLs sales, pcs	12,800	32,320	163,216	527,515	735,851	732,586	1,008,970	1,290,809	1,715,416	4,747,781	2,009,782	2,309,864	2,615,745	2,927,513	9,862,904	3,389,489	3,933,251	4,413,981	4,903,933	16,640,654
preowned TDLs sales, pcs	5,280	13,332	67,327	217,600	303,539	302,192	416,200	532,459	707,609	1,958,460	829,035	952,819	1,078,995	1,207,599	4,068,448	1,398,164	1,622,466	1,820,767	2,022,872	6,864,269
new TDLs sales, pcs	7,520	18,988	95,889	309,915	432,312	430,394	592,770	758,350	1,007,807	2,789,321	1,180,747	1,357,045	1,536,750	1,719,914	5,794,456	1,991,325	2,310,785	2,593,214	2,881,061	9,776,385
Franchisee's contribution, %	0.0%	14.0%	23.0%	31.0%		37.0%	44.0%	48.0%	51.0%		54.0%	57.0%	60.0%	63.0%		66.0%	68.0%	69.0%	70.0%	
Head company's contribution, %	100.0%	86.0%	77.0%	69.0%		63.0%	56.0%	52.0%	49.0%		46.0%	43.0%	40.0%	37.0%		34.0%	32.0%	31.0%	30.0%	
Discount on TDLs for franchisees, %	15.0%	15.0%	15.0%	15.0%		15.0%	15.0%	15.0%	15.0%		15.0%	15.0%	15.0%	15.0%		15.0%	15.0%	15.0%	15.0%	
Our share in franchisee's fees, %	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	
TDL price, USD	38.00	38.00	38.00	38.00		38.00	38.00	38.00	38.00		38.00	38.00	38.00	38.00		38.00	38.00	38.00	38.00	
Smart Contract fee, %	0.30%	0.30%	0.30%	0.30%		0.30%	0.30%	0.30%	0.30%		0.30%	0.30%	0.30%	0.30%		0.30%	0.30%	0.30%	0.30%	
New TDL sales to customers, USD	285,760.00	620,527.84	2,805,712.14	8,125,971.30	11,837,971.28	10,303,632.36	12,614,145.60	14,984,996.00	18,765,366.34	56,668,140.30	20,639,457.56	22,174,115.30	23,358,600.00	24,181,990.84	90,354,163.70	25,727,919.00	28,099,145.60	30,548,060.92	32,844,095.40	117,219,220.92
New TDL sales to franchisees, USD	0.00	85,863.74	712,359.38	3,103,178.90	3,901,402.01	5,143,638.69	8,424,447.24	11,757,458.40	16,601,604.71	41,927,149.05	20,594,589.17	24,984,555.50	29,782,215.00	34,998,529.99	110,359,889.66	42,451,066.35	50,754,081.74	57,794,960.42	65,140,789.21	216,140,897.72
Preowned TDL sales, USD	200,640.00	506,616.00	2,558,426.00	8,268,800.00	11,534,482.00	11,483,296.00	15,815,600.00	20,233,442.00	26,889,142.00	74,421,480.00	31,503,330.00	36,207,122.00	41,001,810.00	45,888,762.00	154,601,024.00	53,130,232.00	61,653,708.00	69,189,146.00	76,869,136.00	260,842,222.00
Total TDL sales, USD	486,400.00	1,213,007.58	6,076,497.52	19,497,950.20	27,273,855.29	26,930,567.05	36,854,192.84	46,975,896.40	62,256,113.05	173,016,769.35	72,737,376.73	83,365,792.80	94,142,625.00	105,069,282.83	355,315,077.36	121,309,217.35	140,506,935.34	157,532,167.34	174,854,020.61	594,202,340.64
Income from franchisees' smart contracts, USD	0.00	7,237.91	60,048.82	261,583.12	328,869.86	433,584.57	710,141.22	991,098.90	1,399,438.17	3,534,262.86	1,736,027.75	2,106,081.02	2,510,502.32	2,950,213.41	9,302,824.50	3,578,427.26	4,278,331.64	4,871,845.29	5,491,063.89	18,219,668.09
Income from head company's smart contracts, USD	40,950.00	88,922.93	402,066.04	1,164,466.80	1,696,405.76	1,476,531.24	1,807,632.19	2,147,380.96	2,689,116.49	8,120,660.87	2,957,676.91	3,177,595.93	3,347,336.43	3,465,330.04	12,947,939.29	3,686,864.45	4,026,665.07	4,377,600.12	4,706,626.19	16,797,755.84
Total smart contract fees, USD	40,950.00	96,160.84	462,114.86	1,426,049.92	2,025,275.62	1,910,115.81	2,517,773.40	3,138,479.86	4,088,554.66	11,654,923.73	4,693,704.65	5,283,676.95	5,857,838.75	6,415,543.44	22,250,763.79	7,265,291.71	8,304,996.71	9,249,445.41	10,197,690.09	35,017,423.93
Total income from head company, USD	527,350.00	1,216,066.77	5,766,204.18	17,559,238.10	25,068,859.04	23,263,459.60	30,237,377.79	37,365,818.96	48,343,624.83	139,210,281.17	55,100,464.47	61,558,833.23	67,707,746.43	73,536,082.88	257,903,126.99	82,545,015.45	93,779,518.67	104,114,807.04	114,419,857.59	394,859,198.76
Total income from franchisees, USD	0.00	93,101.65	772,408.21	3,364,762.02	4,230,271.87	5,577,223.26	9,134,588.46	12,748,557.30	18,001,042.88	45,461,411.91	22,330,616.92	27,090,636.52	32,292,717.32	37,948,743.39	119,662,714.15	46,029,493.61	55,032,413.38	62,666,805.71	70,631,853.10	234,360,565.81
TOTAL REVENUE	527,350.00	1,309,168.41	6,538,612.38	20,924,000.11	29,299,130.91	28,840,682.86	39,371,966.24	50,114,376.26	66,344,667.71	184,671,693.08	77,431,081.39	88,649,469.74	100,000,463.75	111,484,826.27	377,565,841.15	128,574,509.06	148,811,932.05	166,781,612.75	185,051,710.70	629,219,764.56
OPEX MODEL																				
Direct costs per 1 TDL, USD	19.89	19.89	19.89	19.89		19.89	19.89	19.89	19.89		19.89	19.89	19.89	19.89		19.89	19.89	19.89	19.89	
TDLs produced, pcs	7,520	18,988	95,889	309,915		430,394	592,770	758,350	1,007,807		1,180,747	1,357,045	1,536,750	1,719,914		1,991,325	2,310,785	2,593,214	2,881,061	
Total direct costs, USD	-149,572.80	-377,671.32	-1,907,232.21	-6,164,209.35	-8,598,685.68	-8,560,536.66	-11,790,195.30	-15,083,581.50	-20,045,281.23	-55,479,594.69	-23,485,057.83	-26,991,625.05	-30,565,957.50	-34,209,089.46	-115,251,729.84	-39,607,454.25	-45,961,513.65	-51,579,026.46	-57,304,303.29	-194,452,297.65
TDLs buyback price, USD	19.00	19.00	19.00	19.00		19.00	19.00	19.00	19.00		19.00	19.00	19.00	19.00		19.00	19.00	19.00	19.00	
Total buyback costs, USD	-100,320.00	-253,308.00	-1,279,213.00	-4,134,400.00	-5,767,241.00	-5,741,648.00	-7,907,800.00	-10,116,721.00	-13,444,571.00	-37,210,740.00	-15,751,665.00	-18,103,561.00	-20,500,905.00	-22,944,381.00	-77,300,512.00	-26,565,116.00	-30,826,854.00	-34,594,573.00	-38,434,568.00	-130,421,111.00
Marketing costs, USD	-31,641.00	-72,964.01	-345,972.25	-1,053,554.29	-1,504,131.54	-1,395,807.58	-1,814,242.67	-2,241,949.14	-2,900,617.49	-8,352,616.87	-3,306,027.87	-3,693,529.99	-4,062,464.79	-4,412,164.97	-15,474,187.62	-4,952,700.93	-5,626,771.12	-6,246,888.42	-6,865,191.46	-23,691,551.93
Other operational costs, USD	-60,000.00	-60,000.00	-60,000.00	-60,000.00	-240,000.00	-60,000.00	-60,000.00	-60,000.00	-60,000.00	-240,000.00	-60,000.00	-60,000.00	-60,000.00	-60,000.00	-240,000.00	-60,000.00	-60,000.00	-60,000.00	-60,000.00	-240,000.00
TOTAL OPEX	-341,533.80	-763,943.33	-3,592,417.46	-11,412,163.64	-16,110,058.22	-15,757,992.24	-21,572,237.97	-27,502,251.64	-36,450,469.72	-101,282,951.56	-42,602,750.70	-48,848,716.04	-55,189,327.29	-61,625,635.43	-208,266,429.46	-71,185,271.18	-82,475,138.77	-92,480,487.88	-102,664,062.75	-348,804,960.58
PROFIT MODEL																				
Gross profit (before taxes)	185,816.20	545,225.09	2,946,194.92	9,511,836.48	13,189,072.69	13,082,690.63	17,799,728.27	22,612,124.62	29,894,197.99	83,388,741.52	34,828,330.69	39,800,753.70	44,811,136.46	49,859,190.84	169,299,411.69	57,389,237.88	66,336,793.28	74,301,124.87	82,387,647.95	280,414,803.99
Taxation	-55,744.86	-163,567.53	-883,858.48	-2,853,550.94	-3,956,721.81	-3,924,807.19	-5,339,918.48	-6,783,637.39	-8,968,259.40	-25,016,622.46	-10,448,499.21	-11,940,226.11	-13,443,340.94	-14,957,757.25	-50,789,823.51	-17,216,771.37	-19,901,037.99	-22,290,337.46	-24,716,294.39	-84,124,441.20
TOTAL GROSS PROFIT	130,071.34	381,657.56	2,062,336.45	6,658,285.53	9,232,350.88	9,157,883.44	12,459,809.79	15,828,487.24	20,925,938.59	58,372,119.06	24,379,831.48	27,860,527.59	31,367,795.52	34,901,433.59	118,509,588.18	40,172,466.52	46,435,755.30	52,010,787.41	57,671,353.57	196,290,362.79



	USA	Russia	European Union
<b>Components prices, USD per 1000 pcs</b>			
Atmega328	2,600.00	1,630.00	2,790.00
Resonator AT49S	54.00	157.00	43.00
MT3608 DC-DC conv	756.00	250.00	530.00
MCP73831	100.00	97.00	109.00
ICSP	150.00	100.00	100.00
DS18B20	1,300.00	570.00	1,057.00
JDY-08	1,820.00	1,730.00	3,316.00
micro-usb connector	755.00	76.00	437.00
li-pol 900 mAh	6,160.00	2,500.00	8,900.00
resistor 4.7 KOhm	20.00	13.00	20.00
resistor 1 KOhm	20.00	13.00	20.00
resistor 2 KOhm	20.00	13.00	20.00
resistor 470 Ohm (x2)	40.00	26.00	40.00
resistor 2.2 Kohm (x2)	50.00	26.00	50.00
resistor 100 Kohm	20.00	13.00	20.00
resistor 10 Kohm	20.00	13.00	20.00
condensators 22 pF (x2), 10 uF (x2), 28 uF (x2)	120.00	104.00	120.00
inductor 22 uH	66.00	65.00	66.00
microswitch	26.00	15.00	26.00
<b>Subtotal</b>	<b>14,097.00</b>	<b>7,411.00</b>	<b>17,684.00</b>
<b>Total material costs per one TDL</b>	<b>14.10</b>	<b>7.42</b>	<b>17.69</b>

<b>Assemble costs, USD per 1000 pcs</b>			
Manufacturing services	1,955.00	924.00	2,199.00

<b>TOTAL DIRECT COSTS, USD per 1 TDL</b>	<b>16.06</b>	<b>8.34</b>	<b>19.89</b>
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