CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

FACULTY OF ECONOMICS AND MANAGEMENT
DEPARTMENT OF INFORMATION TECHNOLOGY

Diploma thesis

Market analysis of independent chip model poker application

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

DIPLOMA THESIS ASSIGNMENT

Kryštof Hereš

Economics and Management

Thesis title

Market analysis of independent chip model poker application

Objectives of thesis

The main objective of this thesis is to make a market analysis for specialized poker application.

The partial goals of the thesis are:

1) to characterize poker games and its rules
2) to describe the poker independent chip model
3) to design a training ICM application for smartphones
4) to create a market research for designed application

Methodology

Methodology of the thesis is based on the study of information resources and analysis consisting of both quantitative and qualitative research.

The practical part is focused on development of market analysis and business plan for given application.

The final conclusions will be formulated based on the theoretical knowledge and results of analysis.

The proposed extent of the thesis

60 – 80 pages

Keywords

Online poker, poker, independent chip model, ICM, application, poker software

Recommended information sources

BRUNSON, Doyle. Online poker: your guide to playing online poker safely. 1st ed. New York: Cardoza Pub., c2005, 192 p. ISBN 15-804-2132-6.

CALLINGHAM, Martin. Market intelligence: how and why organizations use market research. Sterling, Va.: Kogan Page, c2004, viii, 223 p. ISBN 0749442018.

MOSHMAN, By Collin. Sit 'n go strategy: expert advice for beating one-table poker tournaments. 1st ed. Henderson, NV, 2007. ISBN 978-188-0685-396.

NAVARRO , Joe. Phil Hellmuth presents Read'em and reap: a career FBI agent's guide to decoding poker tells. [Nachdr.]. New York: Collins, 2008. ISBN 978-006-1198-595.

PARLETT, David. A History of Poker. In: Card Games: History of Poker [online]. [cit. 2014-03-09]. Available at: http://www.pagat.com/poker/history.html#birth-growth

SMITH, Erik. Poker History: Online Poker Eras. [online]. 2011 [cit. 2014-03-11]. Available at: http://www.pokerhistory.eu/history/historic-poker-eras

Expected date of thesis defence

2015/16 SS – FEM

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Prague on 23. 03. 2016

Declaration

I declare that I have worked on my diploma thesis titled "Market analysis of independent chip model poker application" by myself and I have used only the sources mentioned at the end of the thesis.

_____

Kryštof Hereš

Acknowledgements

I would like to express great appreciation to my supervisor Ing. Miloš Ulman Ph.D. for his valuable and constructive suggestions during the planning and development of my thesis. I would also like to thank my family and my girlfriend. They have provided me an excellent moral support and encouragement.

Market analysis of independent chip model poker application

Summary

This thesis focuses on development and market analysis of poker training application that would help to educate players in their decision making during critical phases of poker tournaments. The application is based on the principle of Independent Chip Model (ICM) in Texas hold'em poker variant.

Keywords: On-line poker, poker, Independent chip model, ICM, market research, probability, statistics, Texas hold'em, marketing mix, PEST, SWOT, mobile application

Analýza trhu pro independent chip model poker aplikaci

Souhrn

Tato teze je zaměřena na vývoj a průzkum trhu pro tréninkovou poker aplikaci, která by pomáhala hráčům učit se a usnadňovat jejich rozhodování během kritické fáze v poker turnajích. Tato aplikace je založena na principu Independent Chip Model (ICM) v herní variantě Texas hold'em poker.

Klíčová slova: On-line poker, poker, Independent chip model, ICM, průzkum trhu, pravděpodobnost, statistika, Texas hold'em, marketingový mix, PEST, SWOT, mobilní aplikace

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1 Introduction

Poker is an exciting card game that offers a great variety of actions underlined by simple rules. Over the last few years, the game has become an international phenomenon. Today, poker is played by millions of people from all over the world. For some, poker is a pastime entertainment and fun of playing cards with friends. For others, it is a source of livelihood. Poker is currently the most popular card game in the world. The game combines elements of psychology and mathematics and in order to succeed, it is essential to analyse the game and properly react to your opponents. It is an ideal game for competitive people because of the endless strategy possibilities and constant room for improvement.

The only restrictions for playing poker are the local legal requirements. In the Czech Republic, the game of poker falls under the lottery law, therefore all players must be at least 18 years of age in order to participate legally. While live poker is still popular because of its characteristic atmosphere and engagement of social factors, vast majority of poker players prefer playing on-line because of the comfort of playing from their homes and the ability to play at several tables at one time. In addition, there are many other advantages such as playing anonymously under nickname, large selection from many game variants and different limits, and finally the speed of the game, which is incomparably quicker than playing live.

Throughout the time, the game has significantly developed together with the players. Nowadays there are hundreds of educational sites, videos and books that help them in improving their game. On the other hand, author of this thesis believes that there is a gap on the market with poker training applications. This thesis named "Market analysis of independent chip model poker application" focuses on possible development and market analysis of specialized poker application that would help players support their decisions in critical situations during sit and go and multi-table poker tournaments in Texas hold'em poker variant. The author decided to design an application that would help players in future decision making, save their money, serve as an educational tool and free time entertainment as well. The application is intended to be available for smartphone and tablet devices with iOS and Android operating systems.

2 Thesis objective and methodology

2.1 *Thesis objective*

Main objective of this thesis is to make a market analysis for a specialized poker training application for players who would like to improve their skill in crucial phase of online sit and go tournaments and prove or disprove the hypothesis of possible market gap. Partial objectives are: to characterize poker game and its rules, to describe the principle of Independent Chip Model, to design training ICM application for smartphone and tablet devices and to create financial plan for potential business in the market with mobile applications.

2.2 *Methodology*

Methodology of the thesis is based on the study of information resources and analysis conducted using the mixed method research approach. The practical part is focused on development of marketing strategy and business plan for given application. The formulation of final conclusion is based on the theoretical knowledge and results of analyses.

2.3 *Hypothesis*

There is a business opportunity in the market with mobile poker training applications.

3 Literature review – game of poker

3.1 History of Poker

The exact origin of poker is not known. It is believed that the birth of poker is dated to the first decade of the 19th century. It firstly appeared in former French territory in New Orleans, Louisiana and was played with a deck of 20 cards. The name was probably derived from the German card game Pochen, or French game Poque. And it is considered that direct predecessor of poker is a card game called Primero, which enjoyed a great popularity throughout the Europe in the 16th century.[1]

The first dated reference about poker is from James Hildreth's book "Dragoon Campaigns to the Rocky Mountains", published in 1836. But later publications from Jonathan H. Green and Joe Cowell show that poker has been played already in 1829. These two authors independently described poker as a game played with a 20-card pack, where the cards are dealt among four players who bet on their combinations. Green's book "An Exposure of the Arts and Miseries of Gambling" [1] describe, how poker spread to the rest of the country on Mississippi riverboats, on which, gambling was a common form of entertainment. Extension of poker to other countries, particularly to Asia is credited to U.S. Soldiers.

In the middle 1830s the game altered to be played with 52 cards, which made it more attractive, because of more possible card combinations and more people being able to play at one table. Also, bigger card deck lead to more betting intervals, it enabled poor hands to be significantly improved and the role of luck and coincidence in the game decreased.

From the middle of the 19th century poker evolved into many new variants such as Stud poker (Seven-card stud), Lowball poker, Draw poker (Five-card draw) and Community card poker (Omaha, Texas Hold'em) which is, without a doubt, the most popular variant today. Modern poker tournaments are played in casinos and became popular after the start of the first World Series of Poker (WSOP) in 1970 in Las Vegas, Nevada. At that time,

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1 PARLETT, David. A History of Poker. In: Card Games: History of Poker [online]. [cit. 2015-05-09]. Available at:

http://www.pagat.com/poker/history.html#birth-growth

first poker publications discussing the importance of skill and strategy in poker were published.

3.1.1 Online poker

Online poker started in the late 1990's as a terminal poker machine where players competed against virtual opponent. Few years later, in 1998, Planet Poker Company launched the first online real money poker room and the players were finally able to compete against real people for real money via Internet for the first time. Later, large companies with cooperative structures entered the market. Many different networks and poker rooms dominated the market for a various periods of time. Planet Poker era lasted from 1998 to 1999. Paradise Poker dominated from 1999 to 2003 and the years between 2003 and 2006 were era of Partypoker. Nowadays, there are many other big networks such as 888poker or Ipoker but none of them is as dominating as Pokerstars.com. Pokerstars is the biggest online poker company operating with more than 60% [2] of the Worlds online poker traffic. In other words, more than 60% of all online players currently use Pokerstars client software.

3.1.2 Poker boom in 2003

One of the first triggers of the boom was the release of the movie called "Rounders", in 1998. The film showed poker to general public as a game based on strategy and psychology. In addition, first online poker card-room was introduced in the same year. These two events led to the occasional broadcasting of the World Series of Poker (WSOP) in television. But the main cause of the boom came in the spring of 2003, when amateur player Chris Moneymaker beat 839 opponents (including professional players) and won the main WSOP event. Moneymaker won his seat on Pokerstars online room and turned his 39$ buy-in into 2.5$ millions. This fact launched a huge wave of interest in poker and Moneymaker became celebrity overnight. By the next year, the WSOP main event registered significantly larger field and by 2006, the tournament had more than 1000% increase in the number of players. The boom primarily influenced the no limit Texas hold'em poker variant because of its simple rules and wide space for action. Today, the popularity is still higher than in the pre-boom period but it is no longer significantly

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2 Amaya Q1 figures rocket as PokerStars increases market share [online]. iGaming Business [cit. 2016-03-20]. Available at:

http://www.igamingbusiness.com/news/amaya-q1-figures-rocket-pokerstars-increases-market-share

increasing. The number of WSOP main event tournament attendants remains stabilized near the 2007 level. The effect of the boom is demonstrated in the number of World Series of Poker main event entrants in the graph below.

Number of WSOP main event entrants by year
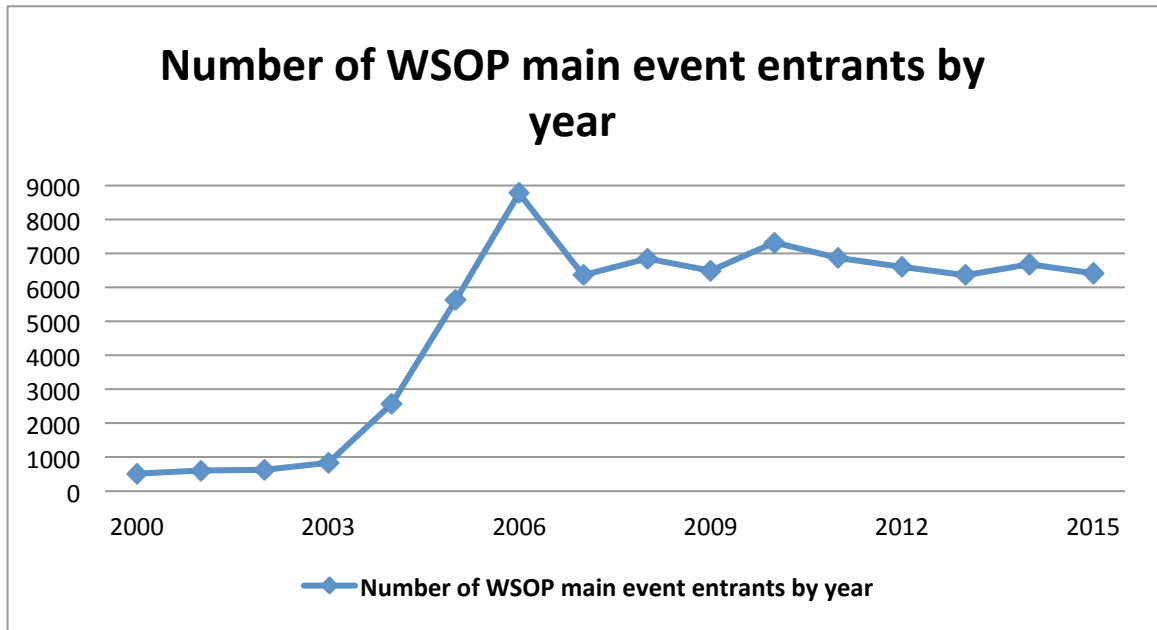
Graph 1: Number of WSOP main event players from 2000 – 2015, data source: WSOP.com

3.1.3 Black Friday

Black Friday of poker, also known as the case "United States v. Scheinberg" is a lawsuit by the United States against three largest poker companies Pokerstars.com, Fulltilt poker, Absolute poker and their associates. The defendants were alleged of criminal money laundering and bank fraud. The prosecution came down on Friday April 15th, 2011. At this point the Department of Justice took control over the defendant's websites and froze more than 76 accounts in 14 countries. Players were not only unable to play on the site, but also they could not withdraw their funds from the poker clients.

Pokerstars and Fulltilt were later permitted to regain control of their domains in order to pay out the United States players. Pokerstars was able to redeem players from a separate account but Fulltilt failed to reimburse their players because the company was running on

illegal Ponzi scheme and it came to light that the owners stole more than 440 millions [3] dollars from the customer money. U.S. government later put into effect the UIGEA (Unlawful Internet Gambling Enforcement) legislation which *"prohibits gambling businesses from knowingly accepting payments in connection with the participation of another person in a bet or wager that involves the use of the Internet and that is unlawful under any federal or state law."* [4] This means that UIGEA does not directly prohibit online poker playing but it makes illegal for gambling sites to receive funds from players and vice versa. This law made the online poker illegal in the United States.

In July 2012, Pokerstars arranged to buy Fulltilt under condition of compensating all their players. The U.S. Federal government approved the deal and charges against these two sites were dismissed. Criminal charges related to bank frauds and money laundering against individuals such as Isai Scheinberg (founder of Pokerstars) or Raymond Bitar (CEO of Fulltilt) remained in effect and has yet to be solved.

Absolute poker was mainly focused on American customers, meaning that this case completely destroyed their business and the site is now insolvent. But Pokerstars and Fulltilt had large bases of real money players throughout the World so they were able to continue in successful operating. As of 2016, Pokerstars regained approval to operate in New Jersey and it is expected to enter into more U.S. states by the end of next year.

3.2   Rules of poker

The game of poker has many variations but most of them share similar rules. The differences are usually in the number of betting rounds, hand values and in the number of cards each player is dealt. This part describes the rules of the most popular form of poker, no limit Texas hold'em.

3 BENNETT, Dashiell. Full Tilt Poker Accused Of Stealing $440 Million Of Player's Winnings In Giant "Ponzi Scheme" [online]. 2011, 2011-09-20 [cit. 2014-03-09]. Available at: http://www.businessinsider.com/full-tilt-poker-stealing-players-winnings-2011-9

4 Federal government of the United States. Unlawful Internet Gambling Enforcement Act of 2006. In: US Government, 2006. Available at: http://www.fdic.gov/news/news/financial/2010/fil10035a.pdf

3.2.1   No limit Texas hold'em

Texas hold'em poker is played with a deck of 52 cards, containing 13 cards of different values in 4 different colours (spades, hearts, diamonds and clubs). Dealer controls and monitors the game and players compete against each other. Generally, poker is played by 2 to 10 participants at one table. Before the game starts, dealer randomly draws which of the players will receive the button. This player has an advantageous position because it plays as a last person in every betting round. Therefore, this player can see opponent's actions before its own turn. After each hand, button is moved in a clockwise direction to another player.

Before the dealer deals the cards, players sitting to the left side of the button and the player two to the left of the button are required to put mandatory bets on the table. The mandatory bets are called small blind (left to button) and big blind (two to the left of button). Blind bets are used in order of certainty of money in the pot. Also, these mandatory bets have a great significance in tournament poker because they help to eliminate and put pressure on players. In some Texas hold'em rules players can meet with mandatory bet ante. Ante bet is an obligatory bet for everyone sitting at the table and it usually represents one eighth of a big blind.

At the beginning of the game the dealer deals out two hole cards to every player, starting with the one sitting on the small blind. The first betting round starts right after. Player sitting to the left of the player who posted big blind is first to act. This player can either lay down the cards (fold), even up the amount of the big blind (call) or increase the big blind bet by certain amount of its own choice (raise). The amount of raise has to be at least twice of the value of a big blind. All the following players can also express their action by one of the above stated moves. Plus, if the bet was already raised by some of the previous players, they can decide to increase the bet again (re-raise).

If all the players made a decision, dealer lays out three community (flop) cards on the table. The second betting round follows. The first expresses the player who is one to the left of the dealer button. Players decide to check, fold or bet. If someone bets before them, players can increase the bet again.

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After second betting round, the dealer lays the fourth community card on the table (turn). The third betting round has the same rules as second.

When the third round is finished, the fifth and last community card is revealed by the dealer and fourth betting round is under way. Once again, the fourth betting round follows the same principles as the two previous ones. If two or more players remained in the game, they reveal their cards (showdown). The winner is determined by the value of his poker hand. The winner gets the money or chips in the pot. Often, it may happen that players have the same hand ranking and the pot needs to be split equally. The pot can be also obtained any time during the game when one of the players forces others to fold and give up. Also, at anytime, the player can move all-in and play for all of his money or chips. When the fourth betting round is finished and winner is determined, dealer moves the dealer button clockwise and the next game is ready to start.

3.2.2 Winning combinations values

Texas hold'em distinguishes ten winning combinations. The order is written according to the probability of their creation, from lowest to the highest probability. Meaning that the hands are sorted in descending order from the best to the worst combination. The combination is created by combination of player's hole cards and community cards on the table. The player might, but doesn't necessarily have to use his two hole cards in order to make a combination (player's combination can be created by community cards).

- **Royal flush**

"Described: Five cards of consecutive ranks from ace down to ten, all the same suit. (Royal flush is merely the best straight flush.)" [5]

Picture 1: Royal flush

Source: Holdem-poker.wz.cz

5 BRUNSON, Doyle. Online poker: your guide to playing online poker safely. 1st ed. New York: Cardoza Pub., c2005. ISBN 15-804-2132-6

- **Straight flush**

"Described: Five cards of consecutive ranks, all the same suit. (Ace can be used low to form a five-high straight flush.)" [5]

Picture 2: Straight flush
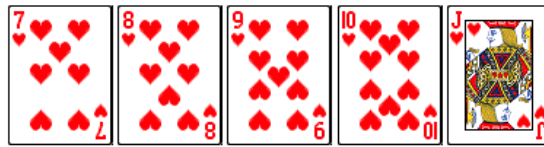
Source: Holdem-poker.wz.cz

- **Four of a kind (poker)**

"Described: Four cards of a matching rank, plus an extra card.
Ties: Highest ranking four of a kind wins." [6]

Picture 3: Four of a kind
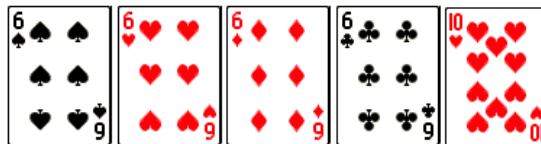
Source: Holdem-poker.wz.cz

- **Full house**

"Described: Three cards of matching rank, plus two cards of a different matching ranks.
Ties: Higher rank of the three of a kind within the full house wins." [6]

Picture 4: Full house

Source: Holdem-poker.wz.cz

- **Flush**

"Described: Five cards of the same suit that do not qualify as a straight flush or royal flush.

Ties: Highest ranking card wins. If those are the same, next highest card wins, and so forth." [6]

6 BRUNSON, Doyle. Online poker: your guide to playing online poker safely. 1st ed. New York: Cardoza Pub., c2005. ISBN 15-804-2132-6

Picture 5: Flush
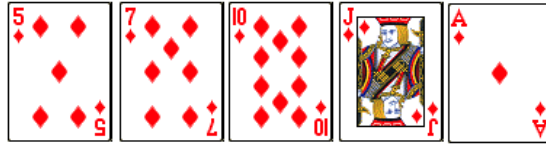
Source: Holdem-poker.wz.cz

- **Straight**

"Described: Five ranks in sequence. (Ace can be used low to form a five-high straight.)

Ties: Higher rank beginning the sequence wins." [7]

Picture 6: Straight
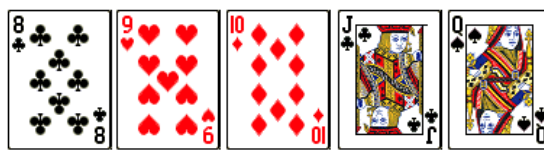
Source: Holdem-poker.wz.cz

- **Three of a kind**

"Described: Three cards of a matching rank and two extra cards whose ranks do not match.

Ties: Higher rank of the three of a kind wins." [7]

Picture 7: Three of a kind
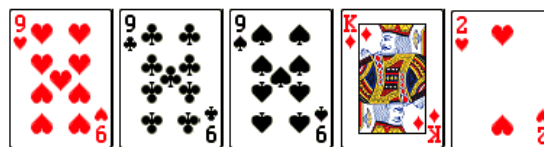
Source: Holdem-poker.wz.cz

- **Two pair**

"Described: Two cards of a matching rank, plus two cards of another matching rank, plus one extra card.

Ties: Highest pair wins. If tied, higher second pair wins. If still tied, higher extra cad wins." [7]

Picture 8: Two pairs

Source: Holdem-poker.wz.cz

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[7] BRUNSON, Doyle. Online poker: your guide to playing online poker safely. 1st ed. New York: Cardoza Pub., c2005. ISBN 15-804-2132-6

- **One pair**

"Described: Two cards of a matching rank, plus three extra cards of all different ranks.

Ties: Higher pair wins. If ranks are the same, highest ranking extra card not matched by opponent wins." [7]

Picture 9: One pair
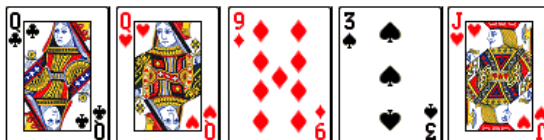
Source: Holdem-poker.wz.cz

- **High card**

"Described: Any hand that does not qualify for one of the categories listed above.

Ties: Highest card wins. If the hands tie for high card, the second highest cards are compared, and so forth." [8]

Picture 10: High card

Source: Holdem-poker.wz.cz

3.3   Formats of play

3.3.1   Cash game (ring game)

In cash game, players can enter and leave the game whenever they want. The chips the players buy in directly represent real money. For example if a player makes a buy in for 50$, it receives chips in 50$ value. Most of the games are limited by minimal and maximal buy in.

3.3.2   Sit & Go (SnG) tournament

In sit and go tournaments, players are obliged to pay a certain entry fee in order to participate. The number of players is limited (for example: 6, 9, 27 seats). SnG ends at the moment when one player possesses all the tournament chips and every other player is eliminated. Number of paid places and entry fee value is given in advance by the

8 BRUNSON, Doyle. Online poker: your guide to playing online poker safely. 1st ed. New York: Cardoza Pub., c2005. ISBN 15-804-2132-6

tournament rules. The buy in fee does not directly represent amount of tournament chips. Players receive a fixed amount of chips (for example player pays 5$ entry fee and receives 1500 chips) and they are ranked accordingly to their elimination. The name of these tournaments is derived from its fast enrolment process where players literally register (sit) and play (go) within few seconds or minutes because of the small players field required in order to start.

3.3.3 Multi-table tournaments

This format doesn't differ very much from the sit and go tournament rules. The main difference is that these tournaments have a scheduled date and time of start and the number of players is either unlimited or limited by large field of players. It means that the tournaments are played on multiple tables, there are generally more paid places and the tournament usually takes several hours to finish.

3.4 *Position at the table*

Post-flop (when the first three community cards are dealt) position at the table plays a very important factor, which is quite often underestimated by many beginners. The position of a player is determined by the position of the dealer button. The ability to play properly on different table positions can be the difference between winning and losing session. Bad players make mistakes by playing good-looking combinations in bad positions and on the contrary, great players know how to play poor cards in strong positions.

Players who are one of the first to act are in so-called "early position", players who act after them are in the middle position", and players who are the last to act are in the "late position". The players in late positions hold the biggest advantage. They obtain extra information about their opponents in earlier positions because they see how they reacted. Also, the more opponents fold, the bigger is the probability of your hand combination to be the best. The most favourable position is the button, which gives the player a benefit in responding as a last player with the exception of the first betting round. The blind bets are the least favourite positions because players siting on these spots have to mandatorily contribute to the pot and they are always first to act in post flop action.

3.4.1 Early position

In early positions, it is recommended to be selective about the card combinations we play. It is the worst possible position at the table. Players raising bets from early position are assumed to have a good hand combination. Some clever players use this fact and raise the bet even with poor combination trying to scare opponents by representing strong cards. The seat which is first to act in the first pre-flop betting round is called "Under the gun" which refers to the fact of being sat on the most unsuitable position and also being under a gunfire of opponents.

3.4.2 Middle position

In middle positions, players can afford to play little bit looser (more combinations) but still have to be cautious because there are few players to play after them. It is not as advantageous as late positions but players at least have an idea how players sitting on late positions reacted.

3.4.3 Late position

Player sitting in late position has the benefit of being one of the last to act. The information that is gained by players sitting in late position allows them to play weaker combinations or make a decision based on the actions of other players that made their moves ahead of them. The seat one to the right from button is in poker terminology called "cut-off" and the seat two to the right from button is named "hijack".

For better idea about poker positions, see picture below where a ten-seated poker table was used as a demonstration.

Picture 11: Positions at the table; source: stonecoldbluff.co.uk

3.5   Playing styles

"One interesting thing of big bet poker is that we can see players use so many different styles. What's especially remarkable is that so many of these styles can be played effectively." [9] This chapter examines some of the most common styles and looks what makes each style bad or effective. According to the frequency of certain actions we differentiate various types of players and divide them into five theoretical categories according to their style of play.

3.5.1   Tight passive (The rock)

The tight passive player plays only very few starting hands and only rarely bets or raises a bet. If such player is in the game, it is very likely that it is holding a strong card combination. This player rarely bluffs and plays fearfully. Limitation of his card range and passive play can lead into loses from medium strong cards. *"Very tight players will win less than their fair share of pots, but they gain by playing only in those situations in which they have a substantial edge."* [9] Aggressive players easily force this type of a player to fold his or her cards. On the other hand, this player doesn't necessarily waste money on poor hand combinations, it raises with only high value cards and plays with minimum risk.

3.5.2   Loose passive (the calling station)

The calling station is a player who likes to play many starting combinations but doesn't raise the bet very often. This kind of player prefers calls and checks over the aggressive moves. This style is usually adhered by beginners, or unskilled players, who call the bet with almost any two cards in hope to see improvement after the community cards are dealt. Even if the loose passive player misses the flop it calls bets anyway, hoping for a card that is most likely not going to be dealt because of low probability. With strong card combination, the loose passive player is afraid to raise or bet properly because it is afraid of scaring his opponents out of the game. Same as the tight passive, the calling station player loses money by not getting maximum profit from the good hands, and in addition, it is not able to protect his combinations by its passive actions and senselessly invests money into poor cards.

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9 CHRISTENSON, Nick and FOX Russell. Winning strategies for no-limit hold'em. 1st ed. Pittsburgh, PA: ConJelCo LLC, 2008. ISBN 9781886070301.

3.5.3 Tight aggressive (TAG)

Tight aggressive players tend to play only few starting hands but usually very aggressively. It means that they enter the game with a bet or raise and don't call very often. *"When a player bets or raises, it forces the opposition to make decisions. When they're forced to make decisions it gives them an opportunity to make mistakes. We make money when our opponents make mistakes, so we should give them every opportunity to do so."* [10] By the combination of tight opening card range and aggressiveness a TAG player can either win by holding the best hand or it can often seize the pot by making the opponents fold. Many profitable professionals are classified as tight aggressive, therefore this strategy can be very successful when played properly. On the other hand, TAG player's card range gets easily revealed by opponents since they play only very few combinations. Also there is a risk of losing big pots of money when tight aggressive player has a strong cards but not as strong as opponent.

3.5.4 Loose aggressive (LAG)

"This style of play has become more popular in recent years, especially among a generation of internet-trained poker professionals. The idea here is to play aggressively, but to play relatively large number of hands. If successful, such a player may lose a fairly large number of small pots, but should make up for it by winning more than their fair share of large pots. A successful loose aggressive player is playing a lot of hands, taking down pots that nobody else wants, and then getting paid off with his big hands because his opponents have no idea where he's at." [10] It is extremely hard to read or estimate LAG player's card range. It can also intimidate opponents or make them sometimes wrongly assume that a certain player is bluffing.

Some of the LAG players are marked as maniacs because they play outrageous number of hands, but in all cases, players have to be cautious because some of these maniacs can be very skilled players who play lot of hands because they know that they have an edge over other players in the post-flop game. A good loose aggressive player needs to know exactly where to stop his aggression and give up the game.

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10 CHRISTENSON, Nick and FOX Russell. Winning strategies for no-limit hold'em. 1st ed. Pittsburgh, PA: ConJelCo LLC, 2008. ISBN 9781886070301.

3.5.5 Maniac

Maniac is an extremely aggressive and loose player, even more than LAG players. They play very wild and their presence might influence the dynamic of the whole table. They are involved in majority of hands and their moves very often do not make much sense. Sometimes, maniacs could be decent players who are having bad losing streak and play extremely aggressively because they are in anger. These players play in too many hands and in a long run, therefore it is almost impossible for them to stay in profit.

3.6 Probability in poker

Poker is a game full of odds, probabilities and fast decisions. It is a game about managing money, thus good players have to be able to estimate their chances of winning the pot and correctly assess the degree of risk when they're investing their money. *"Odds give you the bad news up front, in unavoidable black and white; they are brutally honest."* The odds are written as a ratio.*" By convention, the first number states how many times something will not happen, while the second number states how many times it will happen. Usually the second number is reduced to 1. If the odds are known, the probability can easily be calculated and vice versa. Probability, as relates to Hold'em poker, tells the player the chances of an event happening in terms of a fraction, a number, or a percentage."* [11] Sometimes it is more suitable to use odds, sometimes it is more convenient to use the chances expressed in percentage.

All of the computations in this chapter relate to Texas hold'em poker.

3.6.1 Pot odds

One of the most important factors in poker decision making is the ability to quickly estimate the pot odds, in other words, the ratio of the pot size to the bet amount. It is one of the most basic skills of a successful poker player. It is a mathematical method that eases player's decision, whether to fold or call a bet. It's like with any other type of investment, in order to find out whether player should accept a certain risk, it also needs to know corresponding reward. Generally, the lower the pot odds are, the more suitable it is to fold

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11 PETRIV, Mike. Hold'em's odd(s) book. 1st ed. Toronto, Ont: Objective Observer, 1996. ISBN 0968122302.

your card and give up the game. *"Pot odds are defined as the size of the pot (your reward) divided by the size of the best (what you must risk)."[12]*

$$Pot\ odds = Total\ pot\ size : bet\ to\ call$$

Formula 1: Pot odds; source: [12]

3.6.2 Hand outs

Hand outs are all available unseen cards that might help player create a combination which is likely to win. Knowing the exact number of outs is a crucial part of a good poker strategy. Outs can be easily converted into probability and help players estimate their chances of winning.

3.6.3 Hand odds of possible winning combination

Hand odds are defined as a number of all unseen cards in the deck minus the outs, divided by outs. Hand odds can be expressed in percentage or ratio in x:1 format or in percentage. Counting the hand odds is convenient especially in a situation, when you're holding a weak card combination after the flop has been dealt, but that combination has a potential to improve further on the turn or river.

$$Hand\ odds = \frac{Number\ of\ unseen\ cards\ -\ outs}{outs}$$

Formula 2: Hand odds; source: [13]

Since it can be hard to make such computations in a short time, players often use so called 4-2 rule which advise to multiply number of outs by 4 after the flop or by 2 after the turn in order to get hand odds quickly in percentages. So, if player holds combination, which has 7 outs, the estimated chance of winning is 28% on the flop and 14% on the turn.

For a better idea of what pot odds, hand outs, and hand odds are, see example below. In this example, the player's name is replaced with alias Hero.

12 MOSHMAN, Collin. Sit 'n go strategy: expert advice for beating one-table poker tournaments. 1st ed. Henderson, NV: Two Plus Two Publishing, 2007. ISBN 9781880685396.

13 PETRIV, Mike. Hold'em's odd(s) book. 1st ed. Toronto, Ont: Objective Observer, 1996. ISBN 0968122302.

3.6.3.1 Example 1:

Hero is holding [A♦][K♦] and the flop and turn has been dealt [7♣][2♦][8♦][Q♠]. At this moment, Hero is holding only high card ace. But it is evident that its card combination can be significantly improved by completing flush (five cards of the same colour). Opponent bets 5$ and the total pot is now 25$. It is hero's move and it has to decide whether to call the bet or fold his cards. Firstly, it easily works out the pot odds, which are 5:1 (25:5). This ratio says that you have to win at least one out of six games to remain at zero profit.

In order to complete the flush, player needs certain card to be dealt on the river. One of those cards is [3♦][4♦][5♦][6♦][7♦][9♦][Q♦][J♦][Q♦].. As you can see, Hero has 9 cards, which can improve its hand. It means it has 9 outs. Now, the goal is to assess the probability of completing flush (assuming that the flush will be a winning combination). We use formula from above to make our estimation.

$$Hand\ odds = \frac{37}{9} \doteq 4.11$$

<div align="right">

Computation 1: Hand odds; source: author

</div>

The hand odds for this situation are 4.11:1 or 19.57% of making the flush combination. Next step is to compare the pot odds with hand odds. When pot odds are higher than hand odds (this situation), it is in terms of statistics recommended to call the bet because in a long term Hero will complete winning combination more frequently than it is required by the pot odds. We can be sure that this decision will be profitable in a long-term, therefore it is recommended to call the bet in this situation.

3.6.4 Hand equity against opponent's range

In texas hold'em poker, there are in total 1326 two-card combinations that might be in opponent's hand, but the suit of each combination is only relevant whether the cards are either suited (such as Ace of hearts and King of hearts) or non-suited (such as Ace of clubs and King of diamonds). That leads us to 169 non-equivalent possible combinations pictured below.

Picture 12: All possible two-card combinations; source: macropoker.com

Poker is a game of incomplete information and you can never be 100% sure what cards are in the hands of your opponent. But after keeping an eye on your opponent's moves for some time, you might be able to deduce a rough estimate about his card range. Now, lets suppose that you are holding a pair of sixes and you would like to know what are the chances of beating your opponent who just moved all of his money or chips to the middle of the table (all-in). Suppose that the opponent has the same amount of money or tournament chips as you.

From previous observation, it was noticed, that the opponent does not play very aggressively and it is willing to play just about 5% of his hands. So how does the pair of sixes stand against its 5% range? Since it is virtually impossible to calculate such thing right in hand, this is where specialized poker software comes in handy. We insert our hand and estimated hand range of our opponent and the software runs series of random board simulations and compare your combination with every possible combination of your opponent. Based on the output of Macropoker calculator, five percent hand range represents following combinations highlighted in green color:

Picture 13: Opponent's range estimation, source: macropoker.com

As we can see, the opponent is most likely holding a strong combination. It is important to note that the highlighted combinations are approximate and we assume that our opponent is willing to play with top 5% of the combinations, not random 5%. To conclude this example, author included pair of sixes and let the software calculate how it stands against top five percent combinations. The result was that the pair of sixes has only 30.21% of winning in the long-term average. In real time play there is not enough time to let the software generate such outputs, but revising these situations help players to remember approximate hand equities and use that knowledge in future play.

3.7 Chip and money expected value

The concept of expected value tells us what average profit or loss the player can expect in a particular game. Acronym EV+ indicates a profitable game in which we expect long-term money gain. The EV- stands for a long-term losing of funds. It is obvious that main objective of every good player is to participate in games with the highest expected value. The basic calculation of poker EV consists of multiplying all possible results of a specific game according to their probability of occurrence and their subsequent comparison. This definition may look very complicated, but in fact, the computation is very simple.[14]

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14 LITTLE, Jonathan. Secrets of professional tournament poker. Hove, UK: D & B Pub, 2011. ISBN 9781904468561.

$$cEV = \sum x_i p_i$$

<div align="right">**Formula 3: Expected value; source: [15]**</div>

The "x_i" in the formula stands for a possible outcome and the "p_i" represents probability of the outcome. It can be explained as a sum of all outcomes multiplied by probability of winning or losing. It tells us how many tournament chips player should expect to gain or lose on average in particular situation.

3.8 Variance

Variance in statistics and probability theory is described as a measure of spread of sample from its expected value. It is an indicator of how close the data are to the mean. In this thesis, author is using the formula of variance of discrete random variable, because poker is a game of random occurrence. It is defined as:

$$\sigma^2 = \sum p_i (x_i - \mu_x)^2$$

<div align="right">**Formula 4: Variance of a discrete random variable; source: [15]**</div>

In this formula, the "x_i" represents possible outcome, "μ_x" is the mean or average value of the sample and "p_i" stands for probability of occurrence.

Since poker is a game with an element of chance, the concept of variance is used here to denote the player's deviation from the expected profit. This element is the main reason why some people believe that poker is a game of luck. But it is just a misunderstanding of variance. It can happen that good player loses many times in a row while inexperienced beginner has a winning streak but poker players have to accept variance as a fact and be patient. It is important to realize that it doesn't matter whether the player wins particular game or not, the most relevant thing is to make a good long-term decision. Because in a long-term variance is suppressed and the results get closer to average (expected) profitability.

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15 HENDL, Jan. Přehled statistických metod zpracování dat: analýza a metaanalýza dat. Vyd. 2., opr. Praha: Portál, 2006. ISBN 80-7367-123-9.

Variance can be either positive or negative. Positive variance is called upswing (being more in profit than expected) in poker terms and the negative is downswing (losing more money than expected). But *"there is one problem with the variance as a measure: it gives a measure in units squared."* [16] Which in some cases make only little sense, so we often use square root of variance and this measure is known as the standard deviation.

3.9   Standard deviation

In statistics and probability theory, standard deviation represents how much dispersion from the average exists. In other words, it measures an extent of how much are the numbers spread out from the normally expected result. Standard deviation is the square root of variance. A small standard deviation (relative to the value of the mean itself) indicates that the data points are close to the mean. A large standard deviation (relative to the mean) indicates that the data points are distant from the mean."

$$\sigma = \sqrt{\sum p_i (x_i - \mu_x)^2}$$

Formula 5: Standard deviation; source: [16]

3.10 Independent chip model (ICM)

ICM model is a widely accepted poker concept used by especially those players, who focus on already mentioned, sit and go and multi table tournaments. Proper understanding of this model is crucial for every player that takes this poker format seriously and wants seize control over its game and become a winning player.

The ICM model includes two very important tournament factors. Firstly, the payout structure of given tournament and secondly, the stacks (amount of chips) of other players in the game. *"The Independent Chip Model is a procedure that takes the chip stacks of all remaining players as an input, and produces each player's corresponding equity as an output."* [17] In other words, it can be explained as a way of converting value of each

16 FIELD, Andy. Discovering statistics using IBM SPSS. 4th ed. London: SAGE, 2013. ISBN 1446249174.

17 COLLIN MOSHMAN. Sit 'n go strategy: expert advice for beating one-table poker tournaments. 1st ed. Henderson, NV: Two Plus Two Publishing, 2007. ISBN 9781880685396.

tournament chip into money equity based on the prize pool. That is why ICM is mostly used in tournament play and not in cash games, where each chip represents real value.

Based on the size of player's stacks, Independent Chip Model calculates the likelihood of each player to finish in the random (or desired) place, and it compares these values with the payout structure for each of these places in the tournament. It is quite easy to calculate what is the probability of a player finishing in the first place, the only thing we need to know is the number of player's chips and the total number of chips. But calculating player's likelihood of finishing in the second, third, fourth and other places is bit more difficult. And with more players in the game and more paid places available, the calculations are getting more and more complex.

It is important to notice the difference between ICM's money expected value ($EV) and chip expected value (cEV) we discussed in one of the previous chapters. *"The Independent Chip Model allows you to think in terms of sit and go equity rather than chip expected value".* [18] $EV tells us how much extra value we expect to gain in prize pool equity, therefore it is widely used in late tournament phases when the payout jumps matter more. While chip EV finds its use during cash games or early tournament phases because it doesn't work with payout structure and relative stacks of remaining players.

Computing an ICM for 4 players might require more than 20 steps, and for a calculation for 10 players, you might need about one million steps. Obviously, players cannot calculate these numbers during the game because of the limited time for action and complexity of this model. Therefore they prefer to use calculators or special poker software for post game analysis and then, they try to remember and automatize the correct decision.

3.10.1 Example: calculating money equity using ICM

Lets demonstrate on a simple, yet common example. Suppose there are only 3 out of 10 players left in a tournament. The first place wins 1000$, second takes 600$ and the third

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18 COLLIN MOSHMAN. Sit 'n go strategy: expert advice for beating one-table poker tournaments. 1st ed. Henderson, NV: Two Plus Two Publishing, 2007. ISBN 9781880685396.

place cashes out nothing. The stacks are as follows:

Player A: 5000 chips

Player B: 6500 chips

Player C: 2000 chips

If this tournament was a "winner takes all", the calculation of each player's chances of winning would be easy – simply by dividing each player's stack by total number of chips (under condition that all players are equally skilled).

$$\textbf{Player A } \text{wins: } \frac{5000}{(5000+6500+2000)} = \mathbf{0.37}$$

$$\textbf{Player B } \text{wins: } \frac{6500}{(5000+6500+2000)} = \mathbf{0.48}$$

$$\textbf{Player C } \text{wins: } \frac{2000}{(5000+6500+2000)} = \mathbf{0.15}$$

Now lets solve this situation from Player's A perspective. Hypothetically, If Player A knew that Player B was going to win, then the stack of Player B can be temporarily ignored and we can focus on A's present stack versus C's stack in order to determine their relative second versus third place probabilities. [19]

$$\textbf{Player A } \text{finishes second, while B wins: } \frac{5000}{(5000+2000)} = \mathbf{0.71}$$

As you can see, if Player B wins the tournament, there is a 71% chance that player A finishes in the second place. And the same can be applied for a situation where Player C wins the tournament.

$$\textbf{Player A } \text{finishes second, while C wins: } \frac{5000}{(5000+6500)} = \mathbf{0.43}$$

And if player C wins the tournament, there is a 43 percent chance that Player A finishes second. With these numbers computed, we can now calculate the probability of Player A

19 COLLIN MOSHMAN. Sit 'n go strategy: expert advice for beating one-table poker tournaments. 1st ed. Henderson, NV: Two Plus Two Publishing, 2007. ISBN 9781880685396.

in given tournament with no other assumptions. This is where the expected value formula is convenient.

Player A finishes second:

(Probability B is 1st)*(Probability A beats C for 2nd) + (Probability C is

1st)*(Probability A beats B for 2nd)

$$= (0.48)*(0.71) + (0.15)*(0.43) = \mathbf{0.41}$$

Now we can say that Player A has 41% chance of ending up in the second place. And since this player has to finish exactly 1st, 2nd, or 3rd, all three possibilities summed together must equal 1 (100%). Therefore we can now easily deduct the probability of Player A finishing in the third place.

Player A finishes third: $1 - 0.37 - 0.41 = \mathbf{0.22}$

Applying similar principle to players B and C as well results into following probabilities:

Player	Stack	Probability of 1st place	Probability of 2nd place	Probability of 3rd place	Equity
A	5000	37%	41%	22%	?
B	6500	48%	37%	15%	?
C	2000	15%	22%	63%	?

Table 1: Example probabilities; source: author; based on: [20]

Now we are able to tell the probability of any player finishing in each place. But we still need to find out what does that mean in terms of actual money equity. According to Moshman, the equity of Player X is:

Eq(Player X) = Probability(X 1st)(First place prize money) + Probability(X

2nd)(Second place prize money) + Probability(X 3rd)(Third place prize money)

20 COLLIN MOSHMAN. Sit 'n go strategy: expert advice for beating one-table poker tournaments. 1st ed. Henderson, NV: Two Plus Two Publishing, 2007. ISBN 9781880685396.

And since we already computed all unknown figures, we can complete the equation for Player A as follows.

$$Eq(Player\ A) = (0.37)*(1000\$) + (0.41)*(600\$) + (0.22)*(0\$)$$

$$\underline{Eq(Player\ A) = 616\$}$$

Once again, using the same principle, we apply the formula for players B and C and we get the following results.

Player	Stack	Equity in 1st place	Equity in 2nd place	Total equity
A	5000	370$	246$	616$
B	6500	480$	222$	702$
C	2000	150$	132$	282$

Table 2: Example, ICM money equity computation; source: author

Now, we see that using ICM, we were able to work out the prize pool equity, known as $EV. In other words, we computed the amount of money we expect to win on average in this particular tournament, with this particular amount of chips and with this particular prize money distribution. With that information in mind, each player can now use it as an advantage. For instance, Player B knows that it can apply a lot of pressure on Player C and can afford to steal blind bets from it quite often. If Player C decides to risk all its chips against Player B and wins, it will have 4000 chips, while Player B remains in the game with solid 4500 chips. Following the same principle of calculation, the ICM money equity would change like this:

Player	Stack	Total equity
A	5000	575$
B	4500	535$
C	4000	490$

Table 3: Example, ICM money equity computation; source: author

As could be seen in Table 3 above, even though Player C doubled its stack, it did not double its money equity. Meaning that according to the ICM model, it will have to win in

more than half cases against Player B to make a long-term profitable move. That is why Player B can be so confident in playing aggressively against Player C. It is then up to each player to decide how aggressively to play and what cards are worth calling the bets. That is where author's potential mobile application would come in handy, because it would be able to combine these equities with opponents estimated hand range (as it was introduced in chapter 3.4.4) and calculate whether it is profitable for a player to call or bet with specific card combinations.

3.10.2 ICM and deal making

The ICM equity can be also helpful in so-called "deal making", when remaining tournament players discuss the possible re-distribution of prize pool more evenly, because they are aware of huge money gaps between each paid place given by tournament structure. The deal is usually done when last 2, 3 or 4 players are remaining in multi table tournament with large field and ICM is a good way of evaluating the value of your tournament chips. Sometimes, tournament rules might prohibit deal making.

3.10.3 Limitations of the Independent Chip Model

To this day, Independent Chip Model is one of the most accurate ways of analyzing current values of chip stacks in sit and go tournaments. *"But there is one very important caveat that must be considered whenever the ICM is used: The Independent Chip Model does not take player skill and relative positions into account."* [21] So lets suppose there is very skilled and complex player at the table surrounded by five other weak players. According to the ICM, at the beginning of the tournament (when all players have identical chip stacks) all players have the same starting equity. While in reality, the equity of the skilled players should already be higher.

Another problem is that ICM does not take into consideration current position (such as proximity to blinds) at the table and the playing style of other players. These table conditions might cause slight deviation of your equity and result into leaks in our game if we focus blindly on ICM calculations. Also it does not account for blind bets increase,

21 COLLIN MOSHMAN. Sit 'n go strategy: expert advice for beating one-table poker tournaments. 1st ed. Henderson, NV: Two Plus Two Publishing, 2007. ISBN 9781880685396.

therefore it does not recognize possible danger of imminent stack drop. Simply, players need to make sure they understand the concept correctly and realize that ICM is purely mathematically based and has some limitations.

3.10.4 ICM algorithms

Regarding the ICM, there are several algorithms for estimating the value of the stacks. The most popular models are Malmuth-Harville(MH) and Ben Roberts (BR) algorithms. For many years, people used mainly the MH algorithm. The problem is that this approach might overvalue equity of short stacks and on the contrary, undervalue the equity of large stacks. For this reason, in 2011, a Phd graduate from Cambridge University Ben Roberts posted a new suggestion for approximation of ICM equities on one of the most frequented poker forums twoplustwo.com.[22]

Ben Roberts stated that ICM calculations have essentially two sources of error: in realistic factors and inaccuracies in the estimation procedure [23]. Obviously, the first error cannot be fixed mathematically, but the second error is allegedly reduced in BR algorithm. In his forum thread, Ben Roberts also published a study justifying his approach. The paper included a comparison between both models and their proximity to the values of "real" ICM equities. The real equities in the study were derived from a simulation with 1 000 000 samples. "*In each sample, blocks of 1000 chips were iteratively moved from a random player to another until enough eliminations occurred.*" [24] The results of the simulation can be seen in Picture 14 below.

22 ROBERTS, Ben. New algorithm for approximating ICM equities. In: TwoPlusTwo.com [online]. 2011 [cit. 2016-01-24]. Available at: http://forumserver.twoplustwo.com/15/poker-theory/new-algorithm-approximating-icm-equities-1112777/

23 ROBERTS, Ben. A new algorithm for the approximation of ICM equities in tournament poker [online]. 2011 [cit. 2016-01-12]. Available at: http://www.pdf-archive.com/2014/08/04/benrobertsequitymodel/benrobertsequitymodel.pdf

Player	Chip stack	Equity ($)		
		MH algorithm	BR algorithm	ICM equity
1	2000	115.6	108.4	108.1
2	4000	206.9	207.8	206.8
3	3000	164.7	160.9	159.9
4	6000	271.0	277.0	279.0
5	5000	241.8	246.0	246.3

Picture 14: MH and BR algorithm comparison; source: [24]

From this example, it is evident that BR equities were, in most cases, closer to the real equities represented in the third column. Ben Roberts states that he is convinced that his algorithm works better at estimation under the ICM assumption because it improves the accuracy of equities for short and large stacks. On the contrary, he admits: "*it is not clear whether or not it produces more realistic results, as it still contains the weaknesses inherent in the ICM model*". [24]

It didn't take long and Ben Roberts's post drew attention of few poker companies who were interested his calculations and wanted his algorithm to be part of their software. Nowadays, the most widely used ICM software let you choose whether you prefer your computation to be calculated with the use of classic MH approach or new BR algorithm as a part of their service. Author's proposed application will include this feature as well.

24 ROBERTS, Ben. A new algorithm for the approximation of ICM equities in tournament poker [online]. 2011 [cit. 2016-01-12]. Available at:

http://www.pdf-archive.com/2014/08/04/benrobertsequitymodel/benrobertsequitymodel.pdf

4 Literature review – market analysis

4.1 Market research

Market research is *"the systematic collection, analysis and interpretation of information relevant to marketing decisions."* [25] The aim is to evaluate the possibility of how to sell your products, define the degree of competition, describe consumer behavior, point out possible risks, and estimate future trends and demands. Based on the sources of information, the research approach techniques can be divided into three basic groups.

4.1.1 Quantitative research

"Quantitative research is an approach for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures." [26] Quantitative method is usually focused on data collection, which can be aimed on a large number of respondents. These respondents often answer questions in the forms of questionnaires, which are then processed and statistically analyzed. The quantitative research is mostly used for its simplicity, time efficiency and accuracy. On the other hand, it has few disadvantages as well. The results of quantitative research might be too broad and general because it is not always able to describe given problem in depth.

4.1.2 Qualitative research

"Qualitative research is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem." [26] Qualitative research

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25 HAGUE, Paul N, Nick HAGUE a Carol-Ann MORGAN. Market research in practice: a guide to the basics. Sterling, VA: Kogan Page, 2004. Market research in practice series.

26 CRESWELL, John W. Research design: qualitative, quantitative, and mixed methods approaches. Fourth edition. Los Angeles: Sage, 2014. ISBN 978-1-4522-7461-4.

focuses on unstructured research plans and the analysis is based on large amount of information from smaller group of individuals. The respondents are not restricted by researcher or by specific variables. The goal of this research method is to create a holistic image of the object and capture how participants interpret situations. It consists of emerging questions, procedures and the data is typically collected in the participant's setting. In majority of cases, it is conducted in a form of focus groups, experiments or personal interviews and it is based on social perspective. During qualitative research, the hypotheses are not tested, but rather created. The result is not reflected in numbers but words. A big advantage of qualitative research is that it allows us to examine the problems in depth and provides a lot of information. On the contrary, this method of research is time consuming and the information is obtained from a small sample of respondents, therefore it might have lower reliability.

4.1.3 Mixed methods approach

This type of research is based on combination of both qualitative and quantitative approach. In other words, this research integrates two forms of data and uses different designs that may involve theoretical frameworks and philosophical assumptions. *"The core assumption of this for of inquiry is that the combination of qualitative and quantitative approaches provides a more complete understanding of a research problem than either approach alone"* [27] This approach of research was used for the market analysis of author's proposed business. The results can be seen in the analytical part of this work.

4.2 Sample size

In order to find out the relevant sample size of examined group (how many responds are needed), several assumptions need to be stated by. For author's research, the confidence level is set to be 90%. Meaning that author wants to be 90% certain that the sample accurately reflects the population. The margin of error is 5%. [28] This percentage describes how accurate author wants the survey to be and expresses the maximum expected difference between real population and examined sample. Lastly, it is necessary to

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27 CRESWELL, John W. Research design: qualitative, quantitative, and mixed methods approaches. Fourth edition. Los Angeles: Sage, 2014. ISBN 978-1-4522-7461-4.

28 LEBLANC, David C. Statistics: concepts and applications for science. Boston: Jones and Bartlett, 2004. ISBN 9780763717292.

estimate the population size, in other words, state how many people on Earth play poker. Since many players play just for fun in their homes with their friends, it is not easy to discover the exact number of poker players in the World.

One of the most reliable sources of information about number of poker players comes from a study prepared by Poker Players Research Ltd. This study examined a total un-weighted sample of more than 346 thousands respondents and discovered that, as of the year 2010, the total number of people playing any form of poker was approximately 44.5 millions. In reality, the number is most likely higher because of the exponential growth of poker's popularity. [29] It has to be taken into consideration that the information provided by the research is more than 5 years old and that many players could not be monitored by the research. Because of the stated reasons, author decided to estimate the population number to 60 million poker players.

Now using the formula below, we can calculate the needed sample size.

$$Sample\ Size = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1+(\frac{z^2 \times p(1-p)}{e^2 N})}$$

Formula 6: Sample size formula for large population; source: surveymonkey.com

Where the z-value for 90% confidence level is 1.645 [30]. The "e" represents the margin of error in decimal form, "N" is the population size, and "p" for large population is stated to be 0.5 (50%).

$$Sample\ Size \cong 270$$

Computation 1: Sample size computation

As could be seen in computation 2, in order to fit into 90% confidence level and 5%

29   Pokerplayersresearch.com. Topline   Trends   Poker   2010 [online].   2010   [cit.   2016-01-24].   Available   at: http://www.pokerplayersresearch.com/Documents/ToplineTrendsPoker2010.pptx

30 MARK A. MCKIBBEN. Student solutions manual to accompany Statistics: principles and methods, sixth edition. Hoboken, NJ: John Wiley & Sons, 2010. ISBN 9780470535219.

margin of error, author needs to collect responses from at least 270 respondents.

4.3 Marketing Mix

The term "mixer of ingredients" [31] was in the context of marketing theory firstly introduced by James Culliton who used this phrase in 1948. Some references mistakenly state that the groundbreaker of the theory was Neil Borden. In fact, Borden continued in Cullinton's work and stressed out the importance of mixing individual instruments. Later on, professor Jerry McCarthy extended their findings even more and introduced the concept of tactical tools mix, nowadays known as the so-called 4 P's. The four P's stand for product, price, promotion and place. The marketing mix and four P's are here to help and ensure the success of a product, service or brand in its market.

Today, the concept has variety of interpretations from different authors. Philip Kotler who is considered to be the father of modern marketing defined that marketing mix is a *"combination of four elements, called the 4P's (product, Price, Promotion, and Place), that every company has the option of adding, subtracting, or modifying in order to create a desired marketing strategy"* [32]. Other definition by Kotler and Armstrong says that marketing mix is *"the set of controllable tactical marketing tools – products, price, place and promotion – that the firm blends to produce the response it wants in the target market"*.[33] Traditional 4P model soon received various modifications in various industries, and was extended to 6P, 7P and 8P versions.

4.3.1 Product

Product is anything that is offered to the target market in order to satisfy human needs and wants. Product can be both, tangible or intangible. Tangible products are goods such as car, food, clothing, computer or furniture. Intangible products are services like insurance, haircut or legal advice. The main message towards your potential customers should be the benefits of your product or service. Because benefits are what makes consumers motivated

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31 CULLITON, James W. The management of marketing costs. Division of Research, Graduate School of Business Administration, Harvard University, 1948.

32 KOTLER, Philip and Gary ARMSTRONG. Principles of marketing. 15th ed. Upper Saddle, N.J.: Pearson, c2014. ISBN 0133084043.

33 KOTLER, Philip and Gary ARMSTRONG. Principles of marketing. 15th ed. Upper Saddle, N.J.: Pearson, c2014. ISBN 0133084043.

into buying and creates sensation of wants and needs. In order to succeed at the market, you should also provide information why is your product more interesting than competitor's commodity and highlight the valuable properties it brings to buyers. Keep in mind that customers usually appreciate advantages such as: saving money or time, opportunity to earn money, satisfying their comfort or feeling of being unique.

4.3.1.1 Product lifecycle

Each product or service goes through a certain life cycle. Product lifecycle management is one of the key tasks in the management of marketing and sales. The model describes the relationship between the volume of sales and profit from the product over a certain period of time. Product lifecycle has several phases. At each stage, we use different marketing tools, based on the reaction of consumers, markets and competition alone. Life cycle theory is not complicated, but its application to a specific product might be challenging because it is difficult to determine exactly at what stage the product is, and therefore what strategy to apply.

The model defines five stages of product life. *"In each of the five phases, the product is in a different state. During the imagination phase, the product is just an idea in people's head. During the definition phase, the ideas are being converted into a detailed description. By the end of the realization phase, the product exists in its final form (for example, as a car) in which it can be used by customer. During the use/support phase, the product is with the customer who is using it. Eventually the product gets to a phase in which it's no longer useful. It's retired by the company, and disposed of by the customer."* [34]

4.3.2 Price

Price is the amount of money customer has to spend in order to acquire a product or service. And pricing policy is a very important process of each newly introduced product. It must take into account many factors influencing the market. Factors such as prices of competitors, expected number of customers and their buying behavior, the type of the business, size of the company, product image, distributions costs, price elasticity,

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34 STARK, John. Product lifecycle management: 21st century paradigm for product realisation. 2nd ed. New York: Springer, c2011. ISBN 0857295454.

negotiating power towards suppliers and many others. In other words, the policy takes into account a number of variables, and it is not easy to determine suitable price without detailed market research.

The concept of pricing might change throughout the product's lifecycle and it also includes discounts, terms and conditions of payment or refunds.

4.3.3 Place

Place tells us where and how the product will be sold, including information about distribution channels, availability of distribution networks, supply and transportation. There are two basic models of distribution, direct and indirect sales. While the direct model sells products and services directly to the end consumer, indirect model offers their goods through third parties such as resellers or dealers. [35]

If you choose direct selling method, you will also be the one who decides on how to present and sell your products and services to customers. You can consider in which location you place your store, how it's going to look like and who is your sales team. You can also opt for different ways of how to sell (e-shop or store). Direct sales approach has cost advantages when there is a high concentration of demand with lower number of customers.

The indirect approach will require some extra work with business partners because there is a need to define appropriate conditions and strategy of sale. *"If goods are distributed indirectly, a substantial amount of customer information that the manufacturers receive is pre-filtered through the sales partner, which makes it considerably more difficult to gain customer-related information in this way than in direct sales."* [35] On the other hand, indirect sales have cost advantages if there is a high number of a potential customer base.

In broader context of "place" strategy, you can also include other aspects of the sales process such as: defining your customers, what is their shopping behavior like, what is

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35 STRAUSS, Ralf E. Marketing planning by design: systematic planning for successful marketing strategy. Hoboken, NJ: Wiley, c2008.

typical or expected size of orders and how to establish after sale customer support.

4.3.4 Promotion

In this part, it is essential to describe the marketing tools that will be used for attracting potential customers. The purpose of defining the promotion is to consider key direction of your marketing communication that will be elaborated in specific marketing activities. Frequent mistake is to limit marketing activities solely on advertising. Advertising may be only one form of promotion. There are other tools as well, such as coupons, gift cards or giveaways. For start-up businesses, it is important to launch more marketing activities simultaneously. Reaching consumers from several directions leads to better brand awareness. Carry out promotional activities systematically and focus on long-term campaigns. Differentiate from your competitors – if you use the same methods and tools as others, you probably won't attract consumer's attention. Lastly, be sure you prefer such promotional tools, which effectiveness can be measured or evaluated, otherwise it can end up putting money into inefficient ways of marketing communication.

4.3.5 Four C's of marketing

The problem with the classical 4 P's concept of the marketing mix lies in the fact, that some projects failed even though they were strictly following the principles and recommendations based on this theory. The reason of failure might be caused by the simple fact, that back in the day, marketing mainly focused on selling products that have already been made, not which products are needed or desired. Shortly after the war, demand was leveling or exceeding the supply therefore it was not much of a big problem to sell almost anything. On top of that, there was no free trade, no Internet nor informed consumer.

The market conditions have changed significantly over the past years. Customers often have a very clear idea of what they want, what is available and how much they're willing to pay. The task of marketing is becoming rather to determine individual needs of each customer and the presentation of products or services that correspond as closely as possible to their wants. A major role is also played by the so-called customization. A phenomenon, that allows consumers modifying or adjusting the products and services

according to their personal preference. With the trend of giving more importance to customer, Robert Lauterborn suggested that these following 4P's corresponds to the customer 4 C's. [36]

4.3.5.1 Consumer wants and needs (vs. Product)

Instead of concentrating on product itself, Lauterborn suggests focusing on selling only goods and services that consumers specifically want to buy. A key element is also the value it delivers. It could be a sense of uniqueness, comfort or already mentioned customization. It is crucial that marketers spend time studying their target audience and create an in-depth analysis of customer's needs and wants in order to success.

4.3.5.2 Cost to the customer (vs. Price)

Complex products often require considerable care and more importantly, additional costs. A great example of such product is a car. When customer buys a car, it is aware of the fact that there will be other future investments in the form of regular check-ups, repairs or gas. Rather than price, managers should therefore focus on total costs of ownership, cost of customer's time and cost of selecting an alternative.

4.3.5.3 Convenience to buy (vs. Place)

Convenience to buy is another important element of the marketing mix that has undergone many changes with the introduction of Internet. The onset of online stores, credit card payments, e-catalogues and smartphone applications has shifted the importance of customer comfort to a whole new level. Customers are no longer bound to go to physical stores and waste their time picking up orders. Marketers have to be aware how their target market likes to make purchases, decide whether they'll need help after purchasing good or service and figure out how to make the buying experience as much comfortable as possible. There is a difference whether you're shopping in unattractive confusing online store or in an e-shop with appealing design, simple user interface and guaranteed fast delivery.

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36 LAO JR., Felix M. Marketing management: Concepts and Applications for Strategic Marketing Planning. First edition. Philippines: Rex Book Store, 1998. ISBN 971-23-2390-0.

4.3.5.4 Communication (vs. Promotion)

While the traditional concept stated the significance of promotion, the new approach focuses on the importance of communication as a two-way process between the consumer and supplier. Although, advertising campaigns and promotions are effective in the short-term perspective, they won't work without proper customer communication in the long-term. Communication is crucial in creating a meaningful relationship with the customer and helping marketers better understand consumer behavior. The fact is that marketing mix is constantly changing. It is important to realize that today's consumer has a variety of buying options, it has an access to all necessary information and it is capable of independent and qualified decisions.

Despite the importance of new versions of marketing mix approaches. The author of this thesis will use mix of both, the original and new approach of the marketing mix into account when conducting practical part of this thesis.

4.4 Situational analysis

Situational analysis is critical, impartial, thorough and systematic examination of the position of the company in the environment. It serves to capture all critical and important factors (both internal and external), which create certain conditions for business. In other words, it is a comprehensive analysis for capturing all relevant information that affects the present and future situation of the organization.

4.4.1 PEST analysis

PEST (sometimes called STEP) analysis is a widely applied tool for strategic analysis, especially in situations where we need to identify the impact of external factors on our business or company. PEST analysis examines all relevant factors of the company's external factors that directly influence company's performance, but there is only little the firm can do about them. The name is derived from the initial letters of the factors the tool deals with: political, economic, social and technological. PEST analysis is based on past developments and seeks to anticipate and analyze the future impacts in already mentioned

four key areas. [37]

The list of individual factors allows us to minimize the risks and possibly use these forces into our advantage. PEST analysis is also a suitable tool for situations where we plan to enter a new market (or area) because it helps to adapt quickly to the new environment and conditions.

4.4.1.1 Political

Analysis of political factors is not concerned with the issue of political parties, but rather with the stability of the political scene (government changes) and legislature. That is, because these factors have direct impact on the businesses. It identifies current state of trade law, environmental measures and new law proposals, as well as the behavior of regulators for the areas where given company operates. Political aspects can limit enterprises, change conditions of employment and result into swings in firm's expected results, therefore it is crucial to properly analyze these requirements.

4.4.1.2 Economic

The economic environment is particularly important for estimating the cost of labor and to estimate the prices of products and services. It covers and determines economic issues that can play role in firm's success. This part of the analysis examines the question of taxes (value added tax, excise taxes, property transfer taxes etc.), custom duties, interest rates, currency stability, considers macroeconomic indicators (GDP, GDP per capita), level of inflation, unemployment policies, and conditions for potential foreign investors, exports and others.

4.4.1.3 Social

Social factors include information about demographic and cultural aspects, such as birth rates, cultural background of potential consumers, ideological characteristics, social trends or income gaps among social segments. The social environment is probably the most exact part of the analysis because the data can be obtained from statistical offices. This factor is

37 BABETTE E. Benssousan, Craig S. FLEISHER. Analysis without paralysis: 12 tools to make better strategic decisions. 2nd ed. Upper Saddle River, N.J: Financial Times/Prentice Hall, 2012. ISBN 0133101029.

particularly important for companies operating in the retail area (sales to end customer). It also examines the perception and influence of advertising, local ethics (levels of corruptions, law enforcement) and monitors social events such as trade shows and conferences. All these factors help company better meet consumer wants and needs. [38]

4.4.1.4 Technological

In case of technological factors, the PEST analysis deals with the aspects like the pace of technological advance, manufacturing maturity and capacity, technology of our competition, investments into technological research, development and innovation, automation of production, trends in product lifecycle, impact of new technologies, infrastructure and telecommunications or technological legislation.

In some resources, we can find extended versions of this analysis, where other factors are added. For example PESTLE (added legislative and environmental factors), similarly PESTEL, PESTLIED (effects of political, economic, socio-cultural, technological, legislative, environmental, demographic and international factors) or SLEPT (factors of social, legal, economic, political and technological). These are mostly variations of a basic model of PEST analysis and represent more detailed breakdown of basic four categories, which are described above. The analytical part of this thesis will make use of the basic PEST model.

4.4.2 SWOT analysis

Swot analysis is a versatile analytical technique focusing on the evaluation of internal and external factors affecting the success of an organization or a particular project (for example a new product or service). The name of this structured method is derived from the first letters of four basic sections it involves, the strengths, weaknesses, opportunities and threats. SWOT analysis is mainly used as a situational analysis in the context of strategic management. Author of this technique is Albert Humphrey [38] who designed it in 1960's. The method is based on the classification and evaluation of individual factors, which are divided into 4 above-mentioned groups. By interaction of all stated factors we can get a

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38 BABETTE E. Benssousan, Craig S. FLEISHER. Analysis without paralysis: 12 tools to make better strategic decisions. 2nd ed. Upper Saddle River, N.J: Financial Times/Prentice Hall, 2012. ISBN 0133101029.

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new qualitative information that characterizes and evaluates the level of their mutual conflict. [39]

Picture 15: Graphic representation of the SWOT analysis, source: wikimedia.org

The essence of SWOT analysis is to identify key internal factors, more specifically strengths and weaknesses of the organization in the light of external environment of opportunities and threats. This classification is very important because we know that the internal environment can be changed and influenced by management. Unlike the external environment, which cannot be influenced directly by authorities. But in all these areas, management seeks for significant factors that best characterize given section. SWOT analysis is subjective and it should be conducted in simple, specific way and it should be primarily based on facts and evidence. When SWOT analysis is conducted properly, it can comprehensively evaluate the functioning of the company, find possible problems and new opportunities for growth. [40]

4.4.2.1 Strengths

"Strengths are elements of an organization that positively influence its development and its competitive position." [41] When analyzing the strengths, it is crucial to determine the

39 BARKSDALE, Susan a Teri LUND. 10 steps to successful strategic planning. Alexandria, Va.: ASTD Press, 2006. ISBN 1562864572.

40 KIME, Lynn F. a Winifred W. MCGEE. SWOT Analysis: A tool for making better business decisions. 2008.

41 50MINUTES.COM. The SWOT Analysis: Develop strengths to decrease the weaknesses of your business. Lemaitre Publishing, 2015. ISBN 978-2-8062-6932-4.

internal forces of the company. Think about what the company is doing better than the competition or what advantages are held over your competitors. Try to realize how is the company or project perceived by employees, customers or market competitors. Any useful experience, uniqueness, skilled staff or loyalty can be considered a strength.

4.4.2.2 Weaknesses

In this section, we determine the potential internal weaknesses of the company. This stage is about realizing the factors you need to address in order to run a successful organization. Once again, look at the company from customers and employee perspective. Although we may not like it, it is essential to mention and seek for all weaknesses because the inconvenient truth might save a lot of money and trouble in the future. An example might be lack of qualified employees, inefficient marketing strategy, staffing shortage, lack of experience in the selected industry or company's bad reputation.

4.4.2.3 Opportunities

Opportunities are external chances for company's growth. Try to find where can the company or project take advantage. For example entering a new market, collaboration with other companies, changes in the business environment (political, legislative), outsourcing, improving logistics, development of new technologies, utilizing money from grants or using the opportunity of new consumer trends. If you cannot find any opportunities for your organization, look at the internal factors and try to deduce some possibilities from them.

4.4.2.4 Threats

Threats are all risks from outside of your organization that have directly impact on you but you may have only very little control over them. This includes dissolution of markets, loss of major customer, unexpected weather conditions, strengthening of competition (such as acquiring new technology), changes in the political environment (such as political, legal, control mechanisms), general economic trends, demographic changes and transitions in social trends like alteration in consumer behavior.

4.4.3 Porter's five forces model

Michael E. Porter, economist of the Harvard School of Business, firstly introduced the five forces model in 1979. [42] This model defines the competitive forces, pressure and the overall competition level in the market. According to this model, market rivalry depends on the action and interaction of fundamental forces (competitors, suppliers, customers and substitutes) and the result of their mutual actions is the profit potential of the industry. In combination with the SWOT and PEST analysis, the Porter's model can be used to comprehensively analyze the situation of the business environment.

It is appropriate to update and conduct this model every year to see if you still have your substantial market position. The model *"focuses on five forces that shape competition within an industry: (1) rivalry among existing competitors; (2) threat of new entrants; (3) the bargaining power of buyers; (4) the bargaining power of suppliers; and (5) threat of substitute products or services."* [43]

Figure 1: Porter's Five Forces model; source: http://masonmyers.com

42 NEMATI, Hamid R a Christopher D BARKO. Organizational data mining: leveraging enterprise data resources for optimal performance. Hershey, PA: Idea Group Pub., c2004. ISBN 1591401356.

43 CHARLES W.L. HILL, GARETH R. JONES., Charles W.L. Hill, Gareth R. Jones. Strategic management: theory : an integrated approach. 11th edition. 2014. ISBN 9781285184494.

4.4.3.1 Existing rivalry

The first force in Porter's models is the rivalry established among competitors. It examines how strong and intense the competition currently is in the marketplace. That is determined by the number of existing competitors and their capability. It helps to evaluate how much we would have to invest in order to get noticed, how to exploit our competitive advantages, discover the market dynamics and realize whether we will be able to keep up with our rivals.

4.4.3.2 Threat of new entrants

Another area examined by Porter's analysis is the threat of new entrants. This section of the analysis determines how difficult it is to enter particular market. It is especially important in the new, progressively developing industries, where the market volume isn't completely clear or where the market volume is growing rapidly. Typical example of such market can be smartphone industry, which was dominated by Nokia in the past, but later, the company could not keep up with their rivals, which then radically reduced its share in this market.

4.4.3.3 Threat of substitutes

The threat of substitutes covers anything that can somehow replace product or service that you're providing. And it certainly does not have to be a perfect substitute. In other words, these are all different products and businesses that can satisfy similar customer needs and wants. The extent of the threat depends upon various factors such as the product price, performance, quality, customer loyalty and the consumer's cost to switch.

4.4.3.4 Bargaining power of buyers

"The bargaining power of buyers refers to the ability of buyers to bargain down prices charged by companies in the industry or to raise the cost of companies in the industry by demanding better product quality and service." [44] The buyer's power is an important factor, which should not be underestimated. Nowadays, it is common that customers can, and significantly affect the price of commodities such as insurance, banking, vehicle, electronics or telecommunication services.

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44 CHARLES W.L. HILL, GARETH R. JONES., Charles W.L. Hill, Gareth R. Jones. Strategic management: theory : an integrated approach. 11th edition. 2014. ISBN 9781285184494.

4.4.3.5 Bargaining power of suppliers

The last of Porter's competitive forces is the bargaining power of suppliers. This area examines the organizations that supply organizations with inputs such as raw materials, labor or services. It also describes the technological dependence, presence of alternative suppliers (both home and abroad) and level of competition between suppliers. The more dependent you are on suppliers, the higher their bargaining power is.

4.5 Market segmentation

Market segmentation is one of the methods of marketing management, more specifically, method of market analysis. The aim of segmentation is to identify the structure of the market where given organization wants to introduce their products or services. The market is divided according to certain aspects into homogeneous groups of customers. It is obvious that most of today's businesses do not create products and services for the entire market, but rather for one or more specific segments. There are many different segmentation criteria, but the most commonly used are geography, demography, socio-economic state, psychological or customer's buying patterns.

Firms use market segmentation so they can better adapt their marketing activities to individual customer groups. Each homogeneous group is characterized by specific needs and shopping behavior, and segmentation gives us an optimal portfolio of customers. It is advised that organizations focus only on those market segments, which are in compliance with their strategy and in which are companies able to operate in long-term efficiency. Market segmentation usually consists of market research, market separation and selection of target segment.

4.5.1 Target marketing approaches

Target market can be defined as "*a group of people or organizations for which an organization designs, implements, and maintains a marketing mix intended to meet the needs of that group, resulting in mutually satisfying exchanges*". [45] In other words, it is

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45 LAMB, Charles W, Joseph F HAIR a Carl D MCDANIEL. Essentials of marketing. 7th ed. Mason, Ohio: South-Western Cengage Learning, c2012. ISBN 0538478349.

essential to clearly determine the market segment that fits best with our company's goals and objectives. There are three basic approaches to targeting strategy: an undifferentiated targeting, concentrated targeting and so-called multi-segment strategy.

4.5.1.1 Undifferentiated targeting

When implementing undifferentiated strategy, a company does not distinguish between customers, but rather adopts a mass-market philosophy. Meaning that the firm does not target its product and services to a selected range of customers but focuses on all possible consumers instead. Therefore, it tries to reach high amount of people with common needs that can be met with a similar marketing mix. Companies adopting this strategy might benefit from potential savings on production and marketing cost. On the other hand, the firms may be more susceptible to competition.

4.5.1.2 Concentrated targeting

This approach requires specific consumer segmentation where we try to reach groups of customers who have common needs, but are different from other groups. Firms address good and services, which are exclusively produced and designed for given market niche – one market segment. An advantage is that by implementing this strategy, companies can better meet the needs of narrowly selected segment and more efficiently concentrate their resources. It also allows some small firms to better compete with big companies. On the contrary, some segments might be too small or changing and it can be fatal for a firm that is not successful in clearly defining its target market. Also, larger firms may target market niche more effectively.

4.5.1.3 Multi-segment targeting

Multi-segment targeting is a strategy, where companies choose two or more clearly defined market segments and implement a distinct marketing mix for each of them. For example clothing companies that try to increase sales and market share by targeting multiple age groups (Ralph Lauren producing clothes for both adults and kids). Another instance could be banks offering special credit-card programs for students and teens. Multi-segment targeting brings many potential benefits, such as larger market share, greater volume of sales, higher profits and economies of scale in marketing and manufacturing. It is advised that before deciding to apply this strategy, companies should

compare the costs to those of undifferentiated and concentrated marketing. The potential risks of this approach are high costs and possibility of so called "cannibalization", which occurs when sales of new product cut into sales of firms other existing products (however, the cannibalization scenario is still generally better than losing sales to a competitor).

5 Analytical part

The analytical part of this thesis is based on practical knowledge gained from literature review and mixed method market research, which was conducted by the author of this thesis. Some chapters make use of external studies as well. The aim of the analytical part is to interpret the results of market analysis and accept or reject hypothesis of possible market gap for given application. The partial aim is to design a poker training application named "Sit and Go Manager", describe its principle, purpose and create a business revenue model for the first five years after the application introduction.

5.1 Market research

The research was carried out in a form of questionnaire, which was assigned both online, and in hand. The questionnaire was designed using Google Forms application and then posted to various online poker forums, communities and distributed to poker players in one licensed casino in Prague. The research was conducted from the 5th of January 2016 to 5th of March 2016.

The author collected a total of 311 responses, meaning that the sample is big enough to fulfill the assumptions of 90% confidence level and 5% margin of error as it was proposed in the literature review (4.1.4). The survey was designed to be easy to answer and with the prevalence of multiple-choice answers and only few open-ended questions. The full version of the questionnaire can be found in the appendix section of this thesis.

5.2 Market segmentation – target audience

Choosing the right target audience is crucial in order to better focus on the needs and wants of consumers who are most likely to acquire the product. For this work, author uses the concentrated targeting strategy, that is, because the proposed application is intended for a very specific group of customers – the poker players. Author's research was focused on all people playing tournament poker in Texas hold'em variant, and owning a smartphone or tablet device.

The survey showed that 81% of all respondents play tournament poker, at least to certain extent in combination with cash games. Out of this proportion, 78% of respondents stated that they own a "smart" device and nearly 11% of interviewees were females. The graph below demonstrates countries with the highest representation in author's market research.
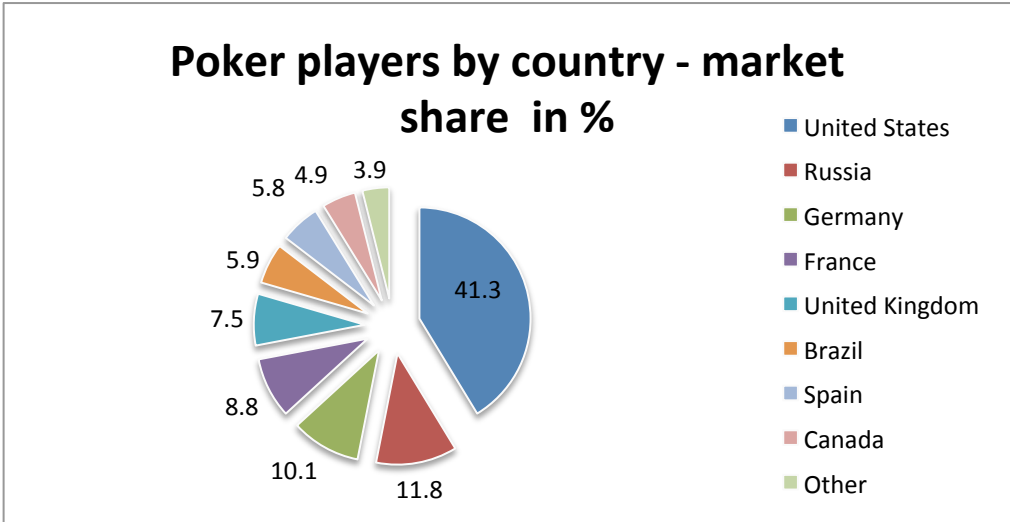
Graph 2: Distribution of poker players by country; source: author's research

By far, the biggest market for poker gaming is the United States with the prevalence of over 40% of market share, followed by Russia, Germany, France, United Kingdom, Brazil, Spain and Canada. Other countries make all together a market share of 3.9 percent. Another inquiry included in author's research was about the age of respondents. The age re-distribution can be seen in the following table.

Age category	Representation in sample
18 – 34 years	61 %
35 – 54 years	28 %
55 years +	11 %

Table 4: Age re-distribution of respondents; source: author

As could be seen, players between 18 to 34 years of age represent the biggest age category in author's sample. On the other hand, remaining two categories make up to 39%, which isn't a negligible number and it also represents large base of potential customers. It has to be taken into consideration that people of different age might have different consumer

taste in terms of both promotion and the product itself.

5.3 *Marketing mix of "Sit and Go Manager" application*

In this section, author uses a blend of two approaches of the marketing mix, the classic McCarthy's 4P's model, combined together with Lauterborn's 4 C's model. That is because of current trend in high customer orientation and focus on emphasis of consumer's perspective rather business alone. The use of both tools gives us the benefits of the traditional marketing mix model enhanced by consumer's point of view as well.

5.3.1 Product, consumer wants and needs

Author of this thesis decided to call the application "Sit and Go Manager" because the name is fairly easy to remember and it characterizes the potential of training poker software. Sit and Go Manager is a specialized poker training application that is designed for players who would like to improve their skill in late phase of online sit and go and multi-table tournaments. Sit and Go Manager trains skills in so called "preflop push/fold" tournament phase, where the mandatory bets are very high relatively to the stacks of players and therefore, they are forced to either bet all their chips, fold their cards or call the bet of other players. Making correct and mathematically justified decisions in these late tournament phases is a crucial aspect of the tournament game. Also, it can be very time consuming and sometimes nearly impossible to compute certain situations in hand. The application would simulate various realistic situations (or custom ones) including opponent's card ranges, give instant feedback about user's decision under the independent chip model assumption and it would serve as an ultimate training tournament poker tool.

According to author's research, 89% of respondents believe that ICM concept is an important factor of successful tournament strategy, 75% of interviewees would be interested in new ICM training simulator for smartphones and tablets, and 72% is convinced that there is not enough ICM training software on the marketplace with mobile applications. This creates a great potential for the application to acquire a great popularity among poker players, and the application could represents a new wave of software that players actually need and want.

The big benefit of this application is that it educates poker players and allows them to train

crucial decisions in entertaining way and without the risk of loosing their money in real tournaments. Sit and Go manager is intended to be available for devices using the Android and iOS operating systems. The market research showed that 76% of respondents currently use device with Android, 21% iOS and the remaining 3% use different operating system (mainly Windows phone). The initial release of author's proposed application is planned to be simultaneous for both operating systems.

5.3.1.1 Application features and design

The application is designed for devices with generally smaller screen dimensions and to be controlled by user's finger motions and tapping. Therefore it is important not to overfill the software with too many tabs, features and create a simple, attractive interface that reduces the number of clicks (or taps) and the risk of miss clicking (clicking on the wrong spot of the screen by accident). To avoid these possible drawbacks, the author added specific questions about the features and design into the questionnaire. The first concern was which features would potential customers like in the software and which of the features they find important.
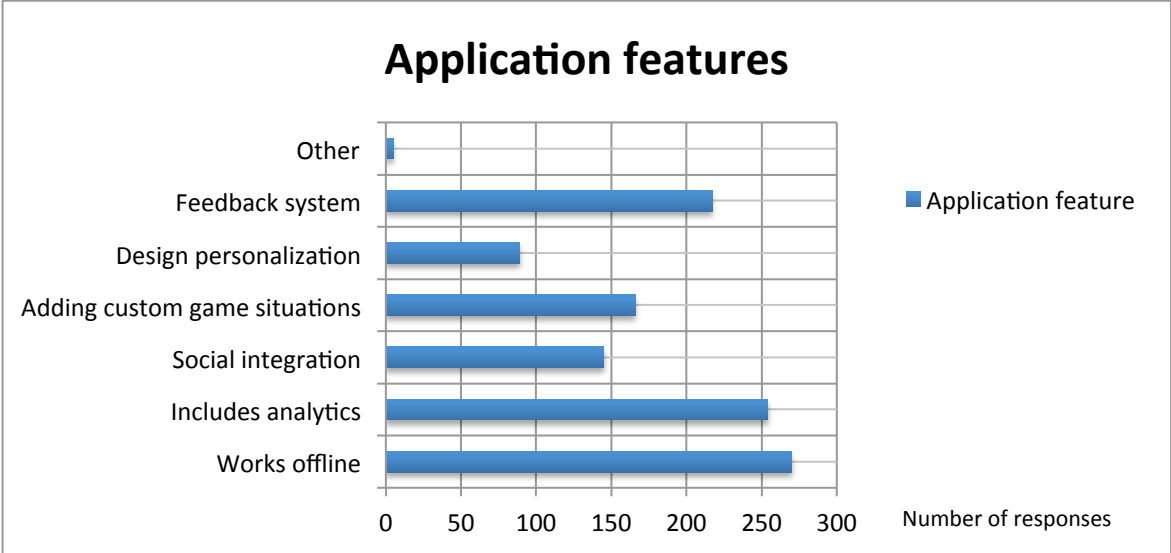
Graph 3: Proposed application features; source: author; based on conducted research

As could be seen in the graph 3 above, there were in total seven proposed application features. Each respondent could pick maximum of 4 options. According to the research, the four most important are: ability to work offline, incorporation of analytics, feedback

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system and ability to add own custom poker situations. Even though all of the seven features will be included in the software (at least to certain extent), the market analysis helped us to understand which of the features are perceived as the most necessary and how much attention, time and resources should we invest into each feature during the implementation phase.

Another part of the research was focused on actual design, attractiveness and user comfort. The very last three questions of the form asked potential consumers about their personal preferences. First question from this section dealt with the menu interface preference and respondents could choose from two distinct menu designs. Both layouts can be seen in the picture below. Approximately 68% of interviewees chose the option number two as more appealing or convenient.
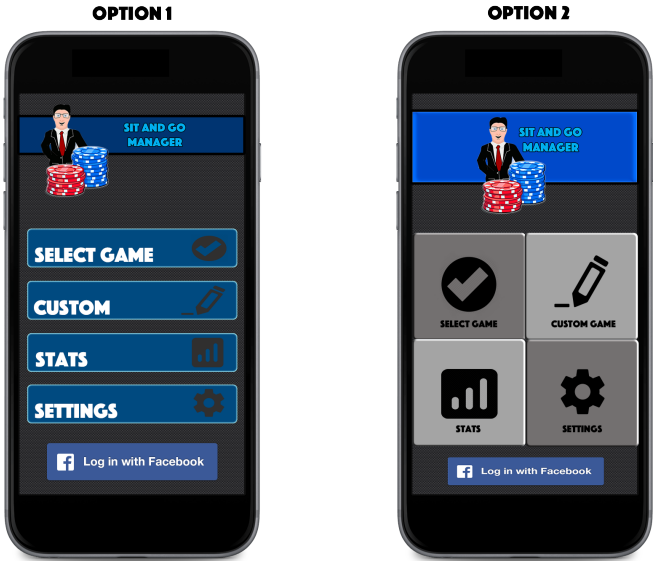
Picture 16: Main menu interface; source: author

In the "select game" tab, user would be able to choose from already pre-set tournament formats without filling in additional tournament information (such as prize pool distribution and number of players). This makes it fast and comfortable for players to begin with training. In order to find out the most popular tournament selection, the research included one question concerning this issue and asked the respondents about their tournament type preferences. This information will help the author to decide which pre-set

tournaments should be included in the application. The results are represented in the graph below.
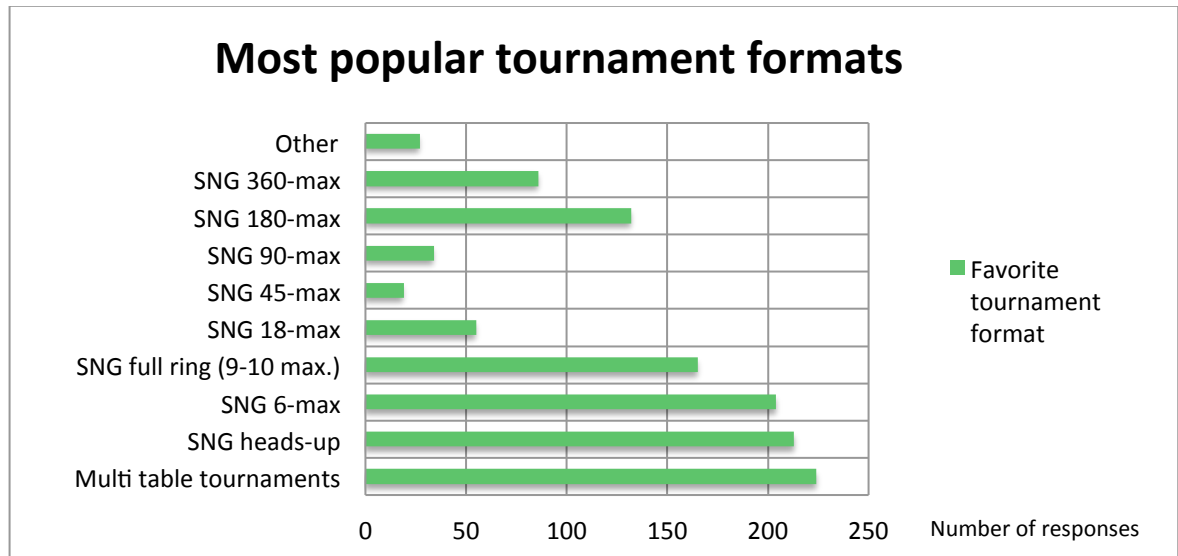
Graph 4: Most popular tournament formats; source: author; based on conducted research

If the desired tournament format isn't present under the first tab, users have the opportunity tap the "custom" button and add format or specific situation of their own. The third tab called "stats" contains a statistics about user's performance and also a feedback system that suggest possible leaks in player's game strategy. The fourth "settings" menu button allows users to make simple alternations such as adjusting the volume, switching between two ICM algorithms, changing table and card skin as well as the possibility of e-mailing customer support. Users will have the choice of logging in with their favourite social media account or logging in through application's registration process.

Another part of the questionnaire focused on the actual training interface, that is, the poker table layout. The form incorporated in total of six designs – two different table shapes and three different colours (blue, red and traditional green) for each of them. The most desired table shape turned up to be the oval, more specifically oval with blue board. Since the polygon-shaped tables did not turn up to be very popular, author decided not to include this shape into the application.

Lastly, the third question was concerned with the preferable device orientation for playing

(training). Vast majority (87 %) of respondents picked the landscape mode. That might be caused by the fact that the landscape resembles more the real online gaming resolution, and also because of many players are already used to this orientation mode from existing poker client applications (such as pokerstars.com client for mobile), which are usually designed that way. Combining the preferable landscape mode, table layout and favoured features, we get the training interface as shown in the example below.

Picture 17: Example of gameplay interface; source: author, based on result of analysis

5.3.2 Price and cost to the consumer

According to a recent report [46], consumers are getting more and more sceptical about paid applications and search for free alternatives instead. Only 4% of Apple app store's revenue came in paid applications. This fact was supported by author's research as well. No matter of the age group or demography, 88% of respondents are not willing to pay for a newly introduced application. The most stated reasons for that was the lack of trust in the application without trying first or without having references. The actual fee for the app does not seem to be a problem but consumers are not willing to pay money upfront for software they're not familiar with.

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46 App Annie & IDC. Mobile App Advertising and Monetization Trends 2012-2017: The Economics of Free [online]. 2014 [cit. 2016-01-13]. Available at: http://blog.appannie.com/app-annie-idc-mobile-app-advertising-and-monetization-trends-2012-2017/#sthash.hwJhJnsM.dpuf

For given reasons, the author decided to launch the application without any fee, but with limited amount of training situations per each day and disabled custom situation mode. In that case, consumers can freely try the software and see what its like. With the no fee politics, the application can reach broader audience to test our entertaining software. Every day user will have the opportunity to give an answer to 30 gaming situations (two sets of 15 question) from desired game format. After that, the application will call upon the user to come back another day, or purchase a set of 120 more generated situations for 0.99$, 300 situations for 1.99$ or 600 games for 2.99$. Unless the user makes the purchase, the free application will contain mobile advertising. Another opportunity how to gain more gaming situations for free is to play frequently. Each user will be rewarded with virtual chip for each correct answer and it will receive special bonuses if it logs into the application for five consecutive days or more. The virtual currency can be then exchanged for prolonged period of playing.

The initial cost to the customer can be either nothing or small amount of money. The software will be designed for the vast majority of current iOS and Android smartphone or tablet devices. However, with the rapid technological progress, potential consumers might need to invest their time into updating their devices or even buying new ones in the future in order to keep up with the new functions.

5.3.3 Place and convenience to buy

Since author's product is not a physical good or service, the only distribution channel of the software is the Internet. More specifically, it is planned to be available on the iOS's App Store and Android's Google Play platforms.

Apple's App Store is an application market place platform for devices with the iOS and Mac OS X operating system. It was launched on the 10th of July 2008 via and update to its predecessor, the iTunes. Within the first four days, App Store reached 10 million downloads and as of June 2015, the platform has surpassed the milestone of 100 billion [47] downloaded content and Apple has paid over 30 billion dollars to the developers. The

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47 INGRAHAM, Nathan. Apple's App Store has passed 100 billion app downloads [online]. 2015 [cit. 2016-01-25]. Available at : http://www.theverge.com/2015/6/8/8739611/apple-wwdc-2015-stats-update

average download rate for every application is approximately 62 500 downloads. Although, the App Store is a global platform, its market is limited with national boundaries and each country has its own App Store based on national legislation restrictions.

Google Play (originally Android Market) serves as the official application market for the devices with Android operating system. Google Play store was launched on 22nd of October 2008. As of 2013, the platform registered over 50 billion downloads and as of the first quarter of 2016, it has nearly 2 millions available applications. The Google Play store is available in more than 130 countries but isn't fully functional for Chinese market (only developers can sell their applications).

Both platforms are easy to use and most users owning tablet or smartphone device are already familiar with their concepts. The application downloads are quickly available and the transactions take place through an online payment gate and system, making it very comfortable and convenient for the end user.

5.3.4 Promotion and communication

As it was mentioned in the market segmentation part of this work, the major target audience is a person playing poker tournaments between 18 and 54 years of age. The conducted research showed that 92% of interviewees use social media. Many players also prefer playing poker online, they often visit poker forums, websites or discussions. That implies that our promotion strategy should be based on online marketing.

The initial plan is to focus on the countries with the highest number of players and create specific campaigns for each of them for a certain period of time. It is important to realize that each area has different consumer taste in social networking and visit distinct poker websites. But the primary tools for online advertising will include search engine optimizations such as Google AdWords, Facebook Ads campaigns, promotional articles on websites, forums and banner advertising. Fairly new, and effective form of promotion is also product placement on Instagram and in Youtube videos.

Naturally, it is essential to set up a website and social network profiles for the new product as well. To raise the awareness among people who don't use social media or visit Internet websites, it is planned to attend various poker festivals, exhibitions and distribute promotional materials. In addition, there is a future plan in sponsorship for few chosen live poker tournament players and sponsored events as well.

The way of communication with potential consumers must clear, concise and complete. It has to be taken in mind that the selling process does not end with the download. It is intended to set up a customer support, create instructions material and be ready for consumer feedback. All of that can help improve the application and build a long-term relationship with customers.

5.4 *Situational analysis*

The situational analysis of given poker training application was conducted in order to realistically explore both internal and external environment, challenges, opportunities and threats that would possibly affect author's potential business.

5.4.1 PEST analysis

5.4.1.1 Political factors

The political factors of poker application are strongly correlated with the game of poker itself. From legal perspective, online poker is usually categorized as an online gambling. In the Czech Republic, both online and live poker is considered gambling and falls under the lottery law. It means that poker can be played only in licensed virtual or regular casinos. The main political issue regarding poker is its regulation. This has been a concern in the past, in the present and most likely will be even in the near future. Especially because of the fact, that online gambling and online poker is relatively new phenomenon.

In most countries, the current trend leans toward regulated legalization of both live and online poker. The motivation behind regulatory process is the possibility to use it as a source of tax revenue. Poker being classified as gambling is something that some poker players don't want to accept because they see poker as a game based on skill. This fact creates a contradiction between lawmakers and legislators who cant agree whether the

element of luck plays role in poker gaming or not. According to a study conducted by PricewaterhouseCoopers International Limited, the tax regime differs for each jurisdiction.

Jurisdiction	Responsible gaming age	Tax regime	
		Taxes paid by casino	Tax on winnings
EMEA: France	18	10%-80% of gross gaming revenue	Yes
EMEA: Germany	18*	Tax and levy system varies with revenue, can go as high as 90% of gross win	No*
EMEA: UK	18	Varies between 15%-40%	No
EMEA: South Africa	18	VAT on gross gaming revenue, corporate tax of 28%	No
Asia-Pacific: Macau	21	Fixed 35% tax of gross gaming revenue, variable 2%-3%	No
Asia-Pacific: Singapore	21	5%-15% of gross gaming revenue	Yes
Asia-Pacific: Australia	18	10%-45%	No
Latin America: Argentina	18	16%	No
Latin America: Chile	18	20% of gross gaming revenue, provisional monthly payment, entrance tax	No
North America: USA	18*	0.25%-70% depending on a state	Yes
North America: Canada	18*	An average of 20% of gross gaming revenue	No

Table 5: Global gaming regulation in selected countries; source: author, based on [48]

As could be seen in table above, countries like France, Singapore or United States apply double taxation on both operators and individual players. It is essential to monitor and control the worldwide political situation in order to keep our application marketing strategy effective. The legislature changes might result into both stagnation and growth of important poker markets, which will directly influence the download rate of and purchases in the application. So far, the political situation in our main target markets remains stable.

5.4.1.2 Economic factors

The Latest statistics [49] show that the number of smartphone devices sold to end users worldwide has been growing significantly in recent years. And similar rate of growth also applies to tablet market. The trend could be seen in graph 4 below.

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48 Knowledge Center Mexico. Global Gaming Industry Regulatory Frameworks [online]. 2015, , 35 [cit. 2016-01-25]. Available at: https://www.pwc.com/mx/es/knowledge-center/archivo/2015-03-kc-global-gaming-industry-regulatory-frameworks.pdf

69
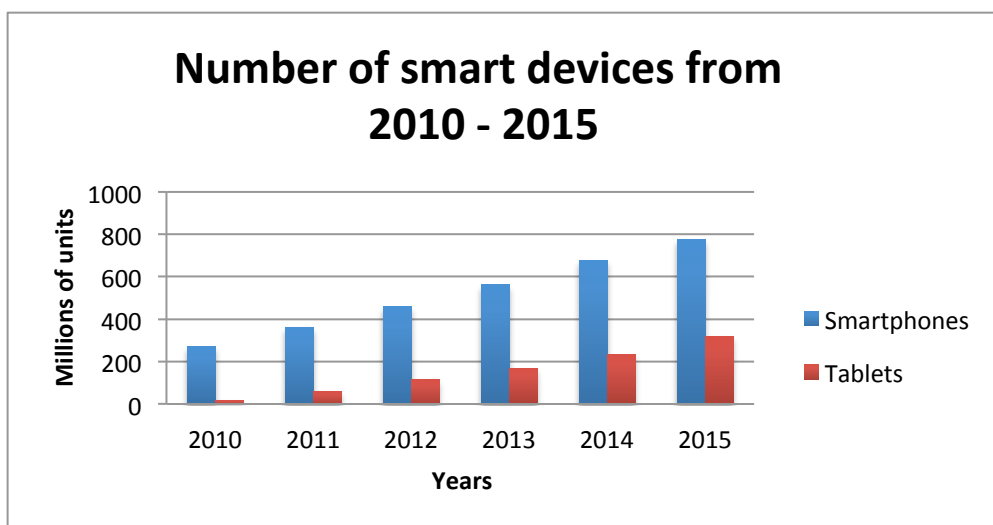
Graph 5: Number of smartphone and tablet devices sold worldwide; data source: author; based on [49]

The number of downloaded applications in Apple [50] and Google Play stores [51] is on its rise as well. In addition, study by Fiedler and Wilcke [52] has proved that the popularity of poker in various regions is correlated to the economical indicators in given area. But the number of online players did not decline even during the time of recession in 2008. The world real GPD growth is expected to be 3.3% in 2016 and 3.2% in 2017 [53], therefore there is no evidence that the poker or smartphone/tablet industry should descend in the near future.

What could make a difference is the change in inflation level, interest rate, currency exchange rate and disposable income of potential consumers. The proposed business has to take into consideration future possible change in the pricing policy based on current exchange rates and inflation.

49 Number of smartphones sold to end users worldwide from 2007 to 2015 [online]. 2016 [cit. 2016-01-25]. Available at: http://www.statista.com/statistics/263437/global-smartphone-sales-to-end-users-since-2007/

50 INGRAHAM, Nathan. Apple's App Store has passed 100 billion app downloads [online]. 2015 [cit. 2016-01-25]. Available at : http://www.theverge.com/2015/6/8/8739611/apple-wwdc-2015-stats-update

51 Number of Android applications [online]. 2016 [cit. 2016-01-25]. Available at: http://www.appbrain.com/stats/number-of-android-apps

52 FIEDLER, Ingo and Ann-Christin WILCKE. The Market for Online Poker [online]. 2011 [cit. 2016-01-25]. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1747646

53 The World Bank. Global Economic Prospects [online]. 2016 [cit. 2016-01-25]. Available at: http://www.worldbank.org/en/publication/global-economic-prospects/summary-table

The taxation issue in regards to poker players was already described in the previous section concerning the political factors. But regarding author's training application, it is naturally a liable subject to value added tax and the potential revenues are liable to income tax as well. *"As of January 1st 2015 all EU companies that sell digital goods online should comply with the following new rule: if the receiving party of the digital goods is a consumer, the company has to charge the VAT percentage from the country of the buyer."* [54]

Meaning that the business is required to register for the VAT in the countries where consumers purchase the application. In European union, the standard tax rate varies between 15% and 27%. So, for example, if author tries to sell the software from the Czech Republic to German market, it will need to charge the customer the German value added tax rate, which is 19%. In our biggest target market – United States, the sales tax differs in each state. Fortunately, Apple App Store and Google Play stores assume VAT liability, so the developers don't have to calculate and send VAT separately.

5.4.1.3 Social factors

The social factors concerning the training application are closely related to the target audience. Conducted market research demonstrated that the potential customers are people playing poker, mainly between 18 and 54 years of age and owning smartphone or tablet device. They are defined as people who are willing to improve their poker skill in tournament play. As it was shown in the economic factors analysis, the demand for "smart" devices and mobile application is on its rise. Also, owning a "smart" device has became a symbol of high social status. The game of poker is currently in the state of "after boom period" where the number of poker players is not expected to rise significantly in the upcoming years, but what is important, it should not fall either and poker still remains an exciting social trend among younger generation.

On the other hand, media and many uninitiated people still see poker as any other form of gambling a have a negative attitude against it. And despite the fact that poker decisions can be mathematically justified and include some degree of psychological thinking, real

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54 DE LAIVE, Patrick. All you need to know about the 2015 EU VAT changes and how we implemented them at TNW[online]. 2015 [cit. 2016-01-13]. Available at: http://thenextweb.com/dd/2015/01/01/need-know-2015-eu-vat-changes-implemented-tnw/#gref

money poker gaming can lead to a gambling addiction, which results into poor perspective on this card game. Some of the major poker sites are currently trying to break up this negative perspective by setting up new educational sites and forums in order to unveil the skill element of the game. Also, some poker clients offer a feature that could limit the amount of money spent each day, week or month in order to save money to players with gambling tendencies. A big advantage of author's proposed training application is the fact, that the users would not use real money in the game, but it would generate real-like situations and actually help players save their finances.

5.4.1.4 Technological factors

The expansion of the Internet and globalization should attract more people to get know about poker and increase the number of both online and live players. The pace of technological progress in tablet and smartphone industry has been fast and there is a high potential for further innovation. In order to keep up with the competitors and maintain the business alive, there is a need in constant technological research and development. Therefore there is a commitment for constant investments. At this point, it is very hard to make any cost estimation but it is essential to have financial reserve for these matters.

Tablets and smartphones might change in terms of how they look and work in the future and the application does not have to be supported by devices anymore if the business doesn't hold on with the technological advance. The way of communication with customers and advertising might change as well with new upcoming technologies. So far, most mobile applications are designed dependent on the operating system. They're so-called "native apps". Such applications come with high initial costs, because software needs to be developed for each platform individually. On the other hand, the reward is the perfect user experience.

Nowadays, there is an effort in developing hybrid applications that would be available on all platforms independent of the operating system. These applications are so-called "cross-platform". The advantage of such application lies in the cost of initial development and maintenance; the disadvantage is particularly incomplete utilization of the potential of the

device and possible problems with the speed of applications. To avoid these drawbacks, author's training application will be designed separately for Android and iOS operating systems.

5.4.2 SWOT Analysis

This chapter evaluates the possible strengths; weaknesses, threats and opportunities of author's intended Sit and Go Manager application.

5.4.2.1 Strengths

- Saves money to the user – main benefit of the application is that it educates players in their long-term decision making in poker tournaments, and as a result, it improves their winning rate and reduces losses.

- Unique software in mobile application market – some poker software and calculators are available in Google Play and Apple App Store but none of them offers same or similar functions as author's training application.

- Basic version available without any fees – unlike other poker software available for mobile devices, anyone can try the application for free for unlimited time and decide whether it's worth unlocking more features or not.

- Convenience – mobile devices can be easily used at almost any place, therefore players can train their poker skill more often than they would with desktop applications

- Attractive design and useful features – author's research discovered user preferences in terms of design and offered features.

- Entertaining – not only the application educates players, it also serves as a free time entertainment because of its instant evaluation system, possibility of collecting virtual currency and ability to compete against friends via social media.

5.4.2.2 Weaknesses

- New brand and product – since the application is a completely new start-up project, the business will lack brand image, trust of consumers, has no loyal customer base and might struggle at some point because of inexperienced management.

- High initial costs – building a new brand and introducing new product comes with the drawback of high early expenditures on marketing and company establishment.

- Need of constant research and development – even if the brand image is established, there is a constant need in research and development because customers needs and wants change over time as well as the technology advances.

- Time to market – the time required for application development and approval process through app stores can take several months.

5.4.2.3 Opportunities

- Potential in growing market of poker and mobile device industry – not only that the market of poker, smartphones and tablets is growing, there is also a great promise in geographical expansion

- Broadening of the product portfolio – if the business is successful, there is an opportunity in expanding our product range

- First of its kind – the application would be the first of its kind in the market with mobile applications

5.4.2.4 Threats

- Legal and political issues – as it was stated in the PEST analysis, poker can face a great threat in the form of excessive regulation, which could lure away players, and as a result, users of our application as well.

- Strong competitors in desktop application market - author's research showed that some people already use similar poker software on desktop computers.

- Economic conditions – recession, fluctuation in exchange rates, cost of labor, disposable incomes and many other economic factors can negatively influence the business

- Risk of failure

5.4.3 Porter's five forces model

According to Porter, the attractiveness of the market and the company's position on it is determined by the following five factors.

5.4.3.1 Existing rivalry

While the proposed "Sit and Go Manager" trainer would be the first of its kind in the market with mobile software, there are three poker applications that work with the ICM concept. One of them is called "Tournament Cruncher", second one is "icm calc" and the third one is called "Poker DealMaker ICM". All three applications allow users to calculate their money equity based on the stack sizes and number of players, this can be helpful in real-time money deal making or post game analysis, but it is far from the author's intention of providing an educational software. None of them has features that are in author's proposed application and all of them have very plain, unattractive design.

Real threat of competition comes from the desktop software applications. There are already two existing competitors who sell similar training software for desktop computers – the "SitNGo Wizard" and "ICMIZER". Author's research showed that 19% of respondents use one of these ICM programs, more specifically, 15% of interviewees already use SitNGo Wizard and the remaining 4% make us of the ICMIZER. SitNGo Wizard has been a longtime staple among poker software. It has a wide, loyal customer base and it is capable of complex calculations, including the ability to generate charts. On the other hand, it might be challenging to learn how to use all of its features. The software costs 99$ for unlimited use with all future updates included.

The ICMIZER is not as complex, but the features are more convenient, easy to understand and the software uses modern, attractive design. It also has an online version of its program, which can be opened in Internet browser (but still requires active connection because the calculations are performed on their servers). All in all, the SitNGo Wizard benefits from the long-term relationship with their devoted users, while ICMIZER is new software, which seems to be more progressive in their marketing, application design and focuses on easy to use software. ICMIZER has three different versions of its software and offers monthly, quarterly, semiyearly and yearly subscriptions. The cheapest (yearly) membership can be bought from 79.99$ to 399$, depending on the type. It also offers a free basic version, which is limited to mere 3 calculations per day. The switching cost to consumers from SitNGO Wizard to ICMIZER is relatively high.

Since there are two big competitors, we can state that the intensity of competition is fairly high but on the contrary, author's business is intended to aim on different market, which is the mobile application industry, where the degree of competition is significantly lower.

5.4.3.2 Threat of new entrants

Entering a market with mobile applications does not necessarily have to be costly. Depending on the type of application (and skill of developers), the entrance costs in terms of time and money can be both, high or low. Because of available businesses devoted to mobile software development, it is no longer needed to know any programming language in order to release an application. Simple applications usually require lower investment and generally take less time to be tested out and published by the seller. The Apple App Store offers three developer membership programs: for individuals, organizations, and enterprises. The yearly subscription fee ranges between 99$ and 299$. Application and in-application purchases are charged by 30% of the total price and the store also charges 30% for any iAd advertisement revenue that the application generates. Apple App Store is careful as to what applications it allows to publish on its store and their average approval time is around six days [55] if it meets their terms and conditions.

Google's Play Store charge developers with a one time registration fee 25$ and also takes a flat 30% fee of all in-application and application purchases. Google isn't that strict in their rules and rejections and their average approval timeline are two hours. Both application stores have some criteria that need to be met in order to be able to publish. These criteria might differ for various applications, depending on its content. For instance, Apple App Store automatically rejects applications that encourage users to use their device in a way that may cause damage to the device, excessively drain the device's battery or generates excessive heat. Also, both Google and Apple stores refuse software that would encourage violence, disseminate hateful comment or disrupt user's privacy settings. The full list of terms and conditions can be found on the official websites of both stores.

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55 FITZGERALD, Brendan. How Long Does it Take for your App to be Approved? [online]. 2014 [cit. 2016-01-13]. Available at: https://www.appmakr.com/blog/how-long-app-approved/

5.4.3.3 Threat of substitutes

This section covers all applications that could somehow replace author's product and meet similar needs and wants of consumers. So far, the biggest threat of substitute comes from the desktop computer applications, which offer similar product, but in slightly different market. In the future, there is a possible danger of someone developing similar software and therefore creating a perfect substitute to our application. In order to bounce off potential competition, author's business has to take an advantage from the early start and build a loyal consumer base through good customer support and high quality software. Other possible threats represent imperfect substitutes like any other mobile quizzes, brain-twisters and games.

5.4.3.4 Bargaining power of buyers

The bargaining power of buyers typically has the strongest effect on the price of product or service. The basic version of author's application will be available for free, so there's no room to bargain the price down. For now, there isn't a perfect substitute for the application in the mobile industry market, therefore there is no power from buyers to force the business into pricing wars with competitors. Also, the competitors in the desktop computer market offer their product for incomparably higher price (though their software is more complex). Nevertheless, dissatisfied consumers, demanding higher quality, better features and lower price of in-application purchases represent possible threat to author's business. These factors can decrease the attractiveness of the application, cause outflow of users and result into lower profitability.

5.4.3.5 Bargaining power of suppliers

In this case, mobile application developers represent the suppliers. More specifically, all application developers located in Prague, because the business in intended to be set up and supervised in this location. There are more than 40 registered firms and individuals devoted to mobile application development. That is a quite high number, which gives author's potential business some room for quality and price selection among developers, and decreases their bargaining power. On the other hand, it is essential to thoroughly select potential developer, because the business is strongly dependent on its performance and the switching cost to a different one in the future could be fairly high.

5.5 Financial plan

The financial plan helps to estimate the money inflows and outflows in the business. The financial plan of given business is based on a 5-year period and incorporates expected future expenditures and revenues. The detailed money flows and calculations can be seen in the appendix section of this thesis.

5.5.1 Equity capital

The equity capital will consist of saved-up funds of the author and owner of the business. The total value of capital intended for the initial operations is set to be 180 000 CZK. The equity capital will be primarily used to cover some initial capital cost and expenditures in the first year.

5.5.2 Expenditures

5.5.2.1 Domain registration and web hosting

For domain name registration and subsequent web hosting, author chose company ACTIVE 24 s.r.o., which ranks among top Czech companies offering web hosting and domain name registrations for reasonable prices. International .com domain registration costs 249 CZK per year. For web hosting, the company offers a wide variety of tariffs. As the most suitable one, author selected tariff " FIRMA" for 79 CZK per month. The tariff offers unlimited space for web storage, hosting up to 5 websites, 5x5 GB of e-mail storage and unlimited FTP usage compatible with Linux or Windows operating systems. The business is intended to register domain SNGMANAGER.com, where the acronym SNG stands for poker sit and go tournaments. This abbreviation is widely used among players and the full URL is should be easy to remember.

5.5.2.2 Telecommunication technology

The business will certainly require Internet and telephone connection as well. For the telephone communication, the business will make use of the "Volání Svět" tariff provided by O2 telefónica Czech Republic available for 549 CZK per month. Since the business is planned to go mainly abroad, author chose tariff that includes 1000 minutes free for international calls, which might be useful for future negotiations and calls to foreign countries. The Internet will be provided by AIRWAYNET a.s. Company, which focuses

on high-speed Internet connection with fixed price and it promises no data download limitations. Their 30 Mb/s tariff cost 590 CZK per month, including wifi router.

5.5.2.3 Marketing

The marketing expenses will be mainly concentrated into online marketing. Approximately 30 000 CZK will be used for PR articles and banners which will be quarterly published on two sites: pokernews.com and cardplayers.com. Both websites figure in the top 20 most visited poker sites[56] and both earned audience from all around the world. The estimated expenditures are based on e-mail conversations with the website management and the banners are intended to be posted up for the period of one year. Another part of the marketing strategy is the search engine optimization and advertising campaigns on social media. In the beginning the optimization and campaigns will be focused mainly on the North American market, because it is our biggest target group and fully aiming on more markets would be too costly in the beginning. Another reason for that is the fact that North America has good base of early innovators, people who are not afraid to try and buy new products or services. The plan is to concentrate most money on this market segment in the first year and then slowly start re-distributing the capital to other emerging target markets such as Russia, Brazil, Germany, France, Spain or United Kingdom.

For the search engine optimization, author chose Google's AdWords software. With the help of in-built keyword planner, author created an Ad group containing 8 keywords, the keyword campaign can be seen in the appendix section of the thesis. Author did not include any keyword terms such as "ICM poker", "Poker calculator", or "Poker quiz" because they had very low search volume and they would not generate sufficient attention. The final campaign was set up with a 250 CZK daily budget. According to the Adword's forecast plan, such campaign should generate approximately 114 000 impressions and 2600 clicks every month with the average position of 2.37. The search engine optimization campaign will be active for the first two years.

Social media advertising will include campaigns on various platforms, depending on the

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56 According to similarweb.com website ranking system

target audience. For North American market, the business will focus on advertising through Facebook.com. In addition, author would like to make use of the growing trend in product placement into Youtube videos and Instagram profiles, which is a relatively cheap, yet effective and progressive form of advertising. The price of product placement on social media profile gets usually higher with the amount of subscribers (Youtube) and followers (Instagram) that given person has, but based on author's prior experience with this form of marketing, the yearly expenses are estimated to be 30 000 CZK.

The amount of money set aside for social media campaigns can be seen in table below. The figures were derived from the Facebook Ads platform, where author set up a detailed targeting campaign on people whose profiles were somehow linked to poker. Author decided to invest fewer resources into emerging markets, because they were generating fairly good daily reach even with lower capital inputs.

Year	1	2	3	4	5
North American market advertising costs (in thousands CZK)	150	100	100	75	75
Estimated daily reach (in thousands of users)	89 - 230	78 - 210	78 - 210	71 - 190	71 - 190
Emerging markets advertising costs (in thousands CZK)	75	100	125	75	50
Estimated daily reach (in thousands of users)	150 - 390	180 - 460	220 - 570	150 - 390	93 - 250

Table 6: Facebook advertising campaigns money distribution; source: author

Lastly, some financial capital will be set aside for offline marketing as well, which is estimated to 120 000 CZK. These costs should cover the sponsorship contracts for two selected players and travelling costs to selected events and festivals as a form of company promotion.

5.5.2.4 Legal services

Legal services will be used as needed. The application stores have certain requirements that have to be met, therefore legal advice might be required before publishing the application. Also, legal services will be needed in order to create a sponsorship contracts,

contracts with employees and online promoters. Contract formulation is priced at 3500 CZK per contract and hourly rate for consultation is expected to be 4000 CZK per hour. The prices were derived from the price list of lawyer Mgr. Jakub Jetmar and the total expenditures are estimated to be 75 000 CZK for the first year and 45 000 CZK for the following periods.

5.5.2.5 Product development and maintenance

The price for initial application development is derived from author's inquiries and requests, which were sent to multiple individual developers and application developer companies. Author demanded native application development for each operating system. Average gross price estimate for author's application was 125 000 CZK for one operating system. The price of development for another platform usually lies between 1/2 and 2/3 of the cost for the first platform. Being pessimistic, the total product development costs for both operating systems will be approximately 210 000 CZK. Later product development and maintenance is to be valued at 40 000 CZK per year.

5.5.2.6 Salaries

The author of the business will receive the minimal gross wage of 9 900 CZK per month. From the sixth month and on, it is expected that the owner of the business will have to hire an assistant, who will help with the customer support and marketing activities. The assistant will be hired as a part-time employee, working 20 hours a week for a fixed wage of 80 CZK per hour.

5.5.2.7 Application store fees

As it was mentioned in the Porter analysis of this thesis, Apple's App Store charges 99$ every year for the developers program for organizations. Google's Play Store membership requires only one time payment of 25$.

5.5.3 Revenues

The application revenues will be generated from two main sources: in-application advertising and in-application purchases. The full-length calculations can be found in the appendix section of this thesis.

5.5.3.1 In-application advertising

One of the few ways of how to gain money from your software is to monetize it. In other words, to insert a commercial message into your application. With the wide variety of applications available, there are also wide assortments of mobile ad providers and formats to choose from. For iOS platforms, the most commonly known provider is iAd, for Android applications, it is the AdMob provided by Google. Each platform has certain rules and specifications regarding the advertisement format that can be inserted into the software, but for Apple and Android, the formats do not differ significantly. Picture below shows a variety of mobile advertising formats that are supported by iAd developers program.

| Standard Banner | Medium Rectangle Banner (MREC) | Double Banner | Large Banner | Interstitial Banner | Pre-Roll Video | Native Banner |
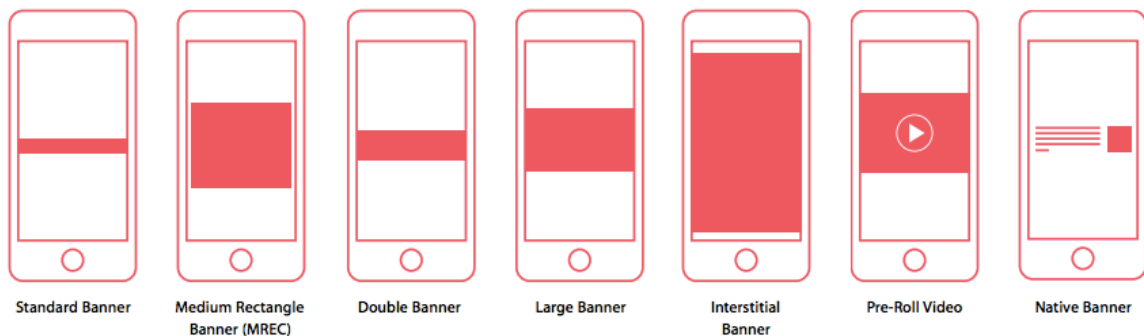
Picture 18: Variety of mobile advertising formats; source: advertising.apple.com

The actual revenues from an application depend on several factors. One of them is the already mentioned advertisement format. Author's application is planned to make use of the interstitial banner and double banner. The interstitial banners are one of the most popular forms of mobile advertising as they generate solid click-through rates and can be easily closed by the user. The double banners are little bit more intrusive because they do not disappear and cannot be closed by the user. The advantage is that they don't require too much space and the advertisement can change over some time period. Other advertisement formats wont be used because they are unsuitable for the design and dimensions of the application or because they could represent too intrusive form of promotion.

Other factors influencing mobile advertising revenue include: total number of installs,

number of active users (every user who log's into the application at least once a month), amount of time users spend in the application, demographic information about users, number of ad requests (when the application generates a request for an ad), number of impressions (when the ad actually responds and appears), the fill rate (the percentage of requests that are displayed to the end user), and lastly, the eCPM, which gives us the expected revenue per 1 000 ad impressions.

Revenue model assumptions

In order to make a gross estimation about the revenues generated from the mobile advertisement in the proposed application, several assumptions had to be stated. The assumptions and figures in the table below are based on numbers that were generated by similar educational software advertising campaigns [57], average number of application downloads, number of active users [58], average fill rates, amount of money paid to developers [59] and author's knowledge gained from literature review. The revenues of author's business are calculated based on the assumptions below.

- The average time spent in our application will be 2 minutes
- There will be one persistent banner ad and 2 interstitial ads per session
- There will be a refresh rate of 30 second for the banner ad (4 banner ads per one session)
- Number of installs will reach 180 000 by the first year and will gradually increase
- Highest install growth is expected between the years 1 and 2
- The number of active user will be 25% from the total installs
- Average number of monthly sessions per active user is 7
- The average fill rate for IAd and Admob is expected to be 40%
- The traffic will consist of 80% of English speaking users and 20% of emerging markets in the first two years, and from the third year on, the ratio will be 75% to

57 App Annie & IDC. Mobile App Advertising and Monetization Trends 2012-2017: The Economics of Free [online]. 2014 [cit. 2016-01-13]. Available at: http://blog.appannie.com/app-annie-idc-mobile-app-advertising-and-monetization-trends-2012-2017/#sthash.hwJhJnsM.dpuf

58 The Real Time Report. 75% of Apps Are Used At Least Seven Times Per Month [online]. 2014 [cit. 2016-01-13]. Available at: http://therealtimereport.com/2014/07/29/75-of-apps-are-used-at-least-seven-times-per-month/

59 LOUIS, Tristan. How Much Do Average Apps Make? [online]. 2013 [cit. 2016-01-13]. Available at: http://www.forbes.com/sites/tristanlouis/2013/08/10/how-much-do-average-apps-make/#45ffb02a12cb

25%

- The average eCPM for double banner is 1.2$ for English speaking users, 0.6$ for others
- The average eCPM for interstitial ads is 4$ for English speaking users, 2$ for others

5.5.3.1 In-application purchases

Author's conducted market research showed that only 1.9 % of respondents is willing to make in-application purchases. But even such small fraction will generate significant part of business's revenue. Author's application will contain three variations of application purchases. The average price for one purchase is 1.99$ and it is assumed that each active user that is willing to spend money in the proposed application will make on average 4 purchases a year. This fact is based on the study conducted by App Annie and IDC companies from 2015 [60].

5.5.4 Financial plan results

The results of planned expenditures and revenues are summarized in the following table. In the first year, it is expected that the business will end up in a loss. That is mainly caused by high initial investments into the application development, marketing and by low traffic, which results into low revenues from in-application advertising and in-application purchases. From the second year, the number of active users will be high enough that the application will start generating revenue.

Year	0	1	2	3	4	5
EBITDA in CZK		-544, 234	107, 919	448, 849	793, 063	997, 539
Depreciation						
Application depreciation		70, 000	70, 000	70, 000	0	0
EBT in CZK		-474, 234	177, 919	518, 849	793, 063	997, 539
Income tax (19%)		-90, 104	33, 805	98, 581	150, 682	189, 532
EAT in CZK		-384, 130	144, 114	420, 268	642, 381	808, 007
Cash flows (EAT + depreciation) in CZK		-314, 130	214, 114	490, 268	642, 381	808, 007

Table 7: Summary of the planned expenditures and revenues; source: author

60 App Annie & IDC. Mobile App Advertising and Monetization Trends 2012-2017: The Economics of Free [online]. 2014 [cit. 2016-01-13]. Available at: http://blog.appannie.com/app-annie-idc-mobile-app-advertising-and-monetization-trends-2012-2017/#sthash.hwJhJnsM.dpuf

6 Results and discussion

The analytical part of this thesis was mainly based on author's mixed method research and the knowledge gained from the literature review. The conducted research was carried out in a form of questionnaire, which was posted to multiple websites, forums, poker discussions, but also distributed in hand. Author collected total of 311 responses.

The market segmentation section of the analytical part allowed author to clearly identify the potential target audience, whether there would be a demand for proposed product and it helped to specify the characteristics of consumers who might be interested in the proposed application. It was shown that the three biggest markets are United States, Russia and Germany, and that the largest target group is a male poker player between 18 and 54 years of age. It also demonstrated that the vast majority of respondents already own a smartphone or tablet device and that people generally do not like to pay for applications because of lack of trust. The segmentation was particularly helpful in later formulation of the marketing mix strategy.

The marketing mix made use of both McCarthy's and Lauterborn's approaches and the 4P's were established in compliance with the results of conducted research. The product design, interface and functions were based on consumer preferences. The pricing strategy, free application with in-application purchases, was based on current customer attitudes towards mobile software and ongoing trend in in-application spending. The place and convenience to buy was derived from the prevalence of users using iOS or Android operating system, therefore author opted for Google Play Store and Apple App Store as the most appropriate distribution channels. The way of promotion and customer communication is primarily based on online marketing tools because the market research proved that the target audience is generally young and middle-aged people who use Internet and social media.

The situational analysis consisted of SWOT and PEST analyses that were helpful in assessing the internal and external environment of the potential business. The PEST analysis revealed possible risks due to political and legal changes, the need for constant technological improvement but it also exposed the potential in growing market with

mobile devices and mobile applications. The SWOT analysis uncovered additional external factors, but also allowed author to review the internal strengths and weaknesses of the business as well. The strengths were evaluated to be in unique software in mobile market, money saving application available for free and the fact that it serves as an entertaining way of education of poker players. The biggest weaknesses are high initial costs, need for constant research and development, the lack of brand image and inexperienced management.

The Porter's five forces model analyzed the degree of competition within the industry. It showed that the existing rivalry and threat of direct substitutes comes mainly from the desktop software but there is only little competition in mobile application market. It also examined the bargaining power of potential buyers and suppliers, which is fairly low. On the contrary, it discovered a threat in a form of easy entrance to the market.

The last section of the analytical part is the financial plan. The plan showed the re-distribution of finances needed for initial and long-term expenditures and incorporated predicted revenues from advertising and in-application purchases. As it was expected, the highest expenditures will be in the first year, mainly due to high initial costs of application development and large investments into promotion. In the first year, it is expected that the application will end up in a loss of 314, 130 CZK. From the second half of the second year, the application will have enough active users to start generating some profit, which should gradually increase until the fifth year, where the earnings exceed 800 thousands CZK.

The analytical part demonstrated that there is a business opportunity for specialized training application in the market with mobile poker education. It revealed the potential of shifting the poker education from desktop computers to mobile devices due to the increasing sales of smartphones and tablets, rise in application downloads and simply higher convenience of portable devices. Since the proposed application would expose the users to various changing situations and immediately evaluate results, it would serve as an entertaining poker tool for informal learning. Based on results of author's analytical part, the hypothesis is this thesis is accepted.

7 Conclusion

The main objective of this thesis was to make a market analysis for a specialized poker application and prove the hypothesis that there is a gap in the market with mobile poker training applications. The partial goals were to characterize poker game and its rules, to describe the principle of independent chip model, to design training ICM application for smartphone and tablet devices and to create financial plan for the potential business.

The poker games and the theory behind independent chip model were described in the literature review part of the thesis. The practical part deals with the market analysis, design of the training application and financial plan of potential business. The market analysis was conducted with the use author's market research, which allowed the potential business to clearly identify its target audience, discover that there would be a demand for intended poker training software and it enabled the author to propose a marketing mix strategy for given application.

The situational analyses (SWOT, PEST) were helpful in the assessment of internal and external business environment and pointed out some of the potential risks and opportunities author's business could possibly face. The Porter's five forces model analyzed the level of competition within the industry, described the market entrance barriers and evaluated the threat of substitutes.

In order to precisely meet customer needs and wants, the application interface and features were based on the data obtained from the respondents. With the use of this information, author was able to design the layout and functions of intended application. The last chapter of the analytical part, the financial plan, represented predicted expenditures and revenues throughout the first five years of the business implementation and demonstrated that there is a promise of future profit generated by the application. The main and partial objectives of this thesis were fulfilled.

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9 Appendix

9.1 Market research

Market research for ICM poker training application
*Required

1. **Do you own smartphone or tablet?** *
   Mark only one oval.

   ◯ Yes
   ◯ No   *After the last question in this section, stop filling in this form.*

2. **Do you play poker tournaments in Texas hold'em variant ?** *
   Mark only one oval.

   ◯ Yes, I play online
   ◯ Yes, I play live
   ◯ Yes, I play both live and online
   ◯ No (I don't play tournaments / I play different variant)   *After the last question in this section, stop filling in this form.*

3. **Please, select your gender:** *
   Mark only one oval.

   ◯ Male
   ◯ Female

4. **Where do you live?** *

5. **Please, specify your age:** *
   Mark only one oval.

   ◯ Under 18 years   *After the last question in this section, stop filling in this form.*
   ◯ 18 - 29 years
   ◯ 30 - 45 years
   ◯ 46 - 55 years
   ◯ 56 - 64 years
   ◯ 65 years +

6. **Which operating systems is supported by your smartphone/tablet? ***

   Mark only one oval.

   ( ) Android

   ( ) IOS

   ( ) Other: _____

7. **Do you use social media? ***

   Mark only one oval.

   ( ) Yes

   ( ) No

8. **What poker client do you use? ***

   Mark only one oval.

   ( ) Pokerstars.com

   ( ) 888poker

   ( ) Bodog

   ( ) IPoker

   ( ) Full tilt poker

   ( ) Other: _____

9. **Which of the following tournaments you play the most? ***

   Tick all that apply.

   [ ] I play multi table tournaments

   [ ] SNG Heads-up

   [ ] SNG 6-max

   [ ] SNG full ring (9 or 10 handed)

   [ ] SNG 18-max

   [ ] SNG 45-max

   [ ] SNG 90-max

   [ ] SNG 180-max

   [ ] SNG 360-max

   [ ] Other:

10. **Do you believe that knowledge of ICM is important in order to be successful tournament player? ***

    Mark only one oval.

    ( ) Yes

    ( ) No

    ( ) I'm not familiar with the ICM concept

11. **Do you think there's enough poker training applications based on ICM available for tablets and smartphones? ***

Mark only one oval.

○ I don't know

○ Yes, there is enough

○ No, there is not enough

12. **Would you be interested in ICM training simulator for your smartphone or tablet? ***

Mark only one oval.

○ Yes

○ No   *After the last question in this section, stop filling in this form.*

○ Maybe

13. **How much time daily would you be willing to train your ICM skills on your smartphone or tablet? ***

Mark only one oval.

○ None

○ 1 - 5 minutes

○ 5 - 10 minutes

○ 10 - 20 minutes

○ 20 - 30 minutes

○ 30 - 60 minutes

○ More than 60 minutes

14. **Would you be willing to pay small amount of money (0.99$ - 1.99$) for ICM trainer application? ***

If not, please specify below.
Mark only one oval.

○ Yes

○ Other: _____

15. **Would you be willing to make in-application purchases?**

Assuming that the application was available for free and you liked it.
Mark only one oval.

○ Yes

○ No

16. **Do you use any ICM based poker software on your desktop computer? ***

Tick all that apply.

- [ ] I don't use any
- [ ] Sit and Go Wizard
- [ ] ICMIZER (icmpoker.com)
- [ ] CHIMP (pokerbank.com)
- [ ] Other: _____

17. **Which of the following application features do you find the most important? Please, pick 4 options. ***

Tick all that apply.

- [ ] Works offline (to certain extent)
- [ ] Includes analytics about performance
- [ ] Social integration (sharing of results, competitions etc.)
- [ ] Ability to add custom poker situations
- [ ] Design personalization (cards, table layout)
- [ ] Feedback system (app evaluates your strengths and weaknesses)
- [ ] Other: _____

18. **Which of the following menu layouts do you prefer the most? ***

Mark only one oval.

- ( ) Option 1
- ( ) Option 2

OPTION 1   OPTION 2

19. **Which of the following table layouts do you prefer the most? (Please, pick 2)** *
Tick all that apply.

- [ ] Option 1 (blue oval)
- [ ] Option 2 (red oval)
- [ ] Option 3 (green oval)
- [ ] Option 4 (blue polygon)
- [ ] Option 5 (red polygon)
- [ ] Option 6 (green polygon)

1

2

3

4

5

6

20. **Would you rather play poker on your smartphone or tablet in portrait or landscape mode?** *

    Mark only one oval.

    ◯ Portrait

    ◯ Landscape

9.2 Financial plan - calculations

Year	Number of installs	Active users	Monthly sessions	Monthly requests	Expected fill rate	Monthly impressions	Monthly advertisement revenue in USD				Year total	
							Double banners English	Double banners non-English	Interstitial banners English	Interstitial banners non-English	Total advertisement revenue in USD	Total advertisement revenue in CZK*
1	180 000	45 000	7	315 000	40%	126000	484	60	806	101	17,418	423,263
2	370 000	92 500	7	647 500	40%	259000	995	124	1,658	207	35,804	870,041
3	500 000	125 000	7	875 000	40%	350000	1,260	210	2,100	350	47,040	1,143,072
4	620 000	155 000	7	1 085 000	40%	434000	1,562	260	2,604	434	58,330	1,417,409
5	700 000	175 000	7	1 225 000	40%	490000	1,764	294	2,940	490	65,856	1,600,301
*Based on current exchange rate (12. 3. 2016)												

Table 8: Total revenues generated from in-application advertisement; source: author

Year	Active users	Number of users willing to pay	Price of average purchase in USD	Number of yearly purchases	Total purchase revenue in USD	Total purchase revenue in CZK*
1	45000	855	1.99	4	6,806	165,381
2	92500	1758	1.99	4	13,990	339,950
3	125000	2375	1.99	4	18,905	459,392
4	155000	2945	1.99	4	23,442	569,645
5	175000	3325	1.99	4	26,467	643,148
*Based on current exchange rate (12. 3. 2016)						

Table 9: Total revenues generated from in-application purchases; source: author

Year	0	1	2	3	4	5
Expenditures in CZK						
Variable costs						
Legal services						
- Contracts		35,000	21,000	21,000	21,000	21,000
- Consultations		40,000	24,000	24,000	24,000	24,000
Fixed costs						
Web hosting and domain		1,197	1,197	1,197	1,197	1,197
Telecommunications		13,668	13,668	13,668	13,668	13,668
Marketing						
Online marketing						

- Search engine optimization		91,200	91,200			
- Social media campaigns		225,000	200,000	225,000	150,000	125,000
- Product placement		30,000	30,000	30,000	30,000	30,000
- PR articles		30,000				
Offline Marketing, sponsorships, events and festivals		120,000	120,000	120,000	120,000	120,000
Product development		210,000	40,000	40,000	40,000	40,000
Application store fees*						
- Apple App store		2,410	2,410	2,410	2,410	2,410
- Google Play Store		610				
Salaries						
- Owner		118,800	118,800	118,800	118,800	118,800
- Assistant		38,400	76,800	76,800	76,800	76,800
Total expenditures		**956,285**	**739,075**	**672,875**	**597,875**	**572,875**

Revenues*						
In-app advertising						
- Double banners		158,724	326,265	428,652	531,528	600,113
- Interstitials		264,540	543,776	714,420	885,881	1,000,188
Total in-app advertising		423,263	870,041	1,143,072	1,417,409	1,600,301
- Revenue after 30% share of advertising platform		**296,284**	**609,029**	**800,150**	**992,186**	**1,120,211**
Full version purchases						
- Revenue from in-app purchases		165,381	339,950	459,392	569,645	643,148

- Revenue after 30% share of app store		**115,767**	**237,965**	**321,574**	**398,752**	**450,204**
Total revenues in USD						
Total revenues in CZK		**412,051**	**846,994**	**1,121,724**	**1,390,938**	**1,570,414**

EBITDA in CZK		-544,234	107,919	448,849	793,063	997,539
Depreciation						
Application depreciation**		70,000	70,000	70,000	0	0
EBT in CZK		-474,234	177,919	518,849	793,063	997,539
Income tax (19%)		-90,104	33,805	98,581	150,682	189,532
EAT in CZK		-384,130	144,114	420,268	642,381	808,007
Cash flows (EAT + depreciation) in CZK		-314,130	214,114	490,268	642,381	808,007
*Based on current exchange rate (12. 3. 2016), derived from table 4						
** Based on current legal situation, source:	http://podnikatele.karlovyvary-region.eu/podnikani/odpisovani-dlouhodobeho-hmotneho-a-nehmotneho-majetku					

Table 10: Calculations of predicted expenses and revenues; source: author

9.3 Google AdWords campaign

Ad Group	Keyword	Keyword Type	Currency	Estimated Clicks (month)	Estimated Impressions (month)	Estimated Cost	Estimated CTR	Estimated Average CPC	Estimated Average Position
SNG Manager	Poker online	Broad	CZK	355.16	12157.9	1160.43	2.90%	3.27	2.25
SNG Manager	poker software	Broad	CZK	8.67	79.8	6.76	10.90%	0.78	2.35
SNG Manager	free poker	Broad	CZK	228.48	22093.29	583.84	1.00%	2.56	1.89
SNG Manager	poker games	Broad	CZK	1091.18	46472.93	3776.29	2.30%	3.46	2.38
SNG Manager	free online poker	Broad	CZK	74.67	3503.33	115.74	2.10%	1.55	2.25
SNG Manager	poker apps	Broad	CZK	44.26	2290.33	192.2	1.90%	4.34	3.22
SNG Manager	online poker	Broad	CZK	550.43	19890.75	838.49	2.80%	1.52	2.23
SNG Manager	free poker games	Broad	CZK	231.41	7968.27	926.25	2.90%	4	2.81

Table 11: Google AdWords advertising campaign estimation; source: author