

**Czech University of Life Sciences Prague**

Faculty of Economics and Management

*Department of Information Technologies*



DIPLOMA THESIS

# Search Engine Optimization

**Bc. Pavel KREJČÍ**

Advisor: Ing. Miloš Ulman, Ph.D.

© 2011 CULS

***Official assignment***

This page will be replaced with a copy of the thesis assignment.

***Declaration***

I declare that I have worked on my diploma thesis titled “Search Engine Optimization” by myself and I have used only the sources mentioned at the end of the thesis.

In Prague on date 1.4.2011

.....

Pavel Krejčí

### *Acknowledgement*

I would like to thank Miloš Ulman and all other persons, for their advice and support during my work on this Thesis.

**Optimalizace pro internetové vyhledávače**

**Search Engine Optimization**

## Souhrn

Tato diplomová práce analyzuje aktuální trendy a metody používané v oblasti optimalizace pro internetové vyhledávače (SEO) a problematiku internetových vyhledávačů obecně. Část práce je pak tvořena případovou studií, která zahrnuje analýzu internetové prezentace realitní kanceláře z pohledu SEO a následně vytvoření nové a komplexní strategie optimalizace.

## Klíčová slova

SEO, Optimalizace pro internetové vyhledávače, Internetový vyhledávač, SEM, Search Engine Marketing, PPC, Pay per Click, SERP, Search Engine Results Page

## Summary

This diploma thesis analyzes actual trends and methods used in the area of Search Engine Optimization and generally Search Engines. The practical part consists of the case study concerning analysis of existing website and developing complete new overall SEO strategy for this site.

## Keywords

SEO, Search Engine Optimization, Search Engine, SEM, Search Engine Marketing, PPC, Pay per Click, SERP, Search Engine Results Page

## Content

1.	Introduction .....	1
2.	Objectives of thesis and methodology.....	2
3.	Characteristics of search engine optimization.....	3
3.1	History of search engines .....	3
3.1.1	First research .....	3
3.1.2	Project Xanadu .....	3
3.1.3	Archie Query Form.....	4
3.1.4	World Wide Web Wanderer .....	5
3.1.5	Yahoo! .....	5
3.1.6	Seznam .....	5
3.1.7	Google .....	6
3.1.8	Goto.com – Sponsored Links and paid search .....	7
3.1.9	Google AdSense .....	7
3.1.10	Youtube.....	7
3.1.11	Bing.....	8
3.2	Market share of search engines .....	9
3.3	Search Engine Marketing (SEM).....	10
3.3.1	Pay Per Click (PPC) .....	10
3.3.2	Classical Banners.....	12
3.4	Human goals of searching.....	14
3.4.1	Types of queries .....	15
3.4.2	Eye-tracking .....	16
3.5	How search engines work .....	19
3.5.1	Crawling and indexing .....	19

3.5.2	Ranking of the page.....	20
3.6	Search engine optimization.....	22
3.6.1	Keyword research.....	23
3.6.2	On-Page factors.....	24
3.6.3	Off Page Factors.....	31
3.7	Black hat SEO.....	35
3.7.1	Cloaking.....	35
3.7.2	Doorway page.....	35
3.7.3	Deceptive redirect.....	35
3.7.4	Hidden content.....	35
3.7.5	Alt spam.....	35
3.7.6	Keyword stuffing.....	36
3.7.7	Link farms.....	36
4.	Analysis of methods and technologies used in search engine optimization.	37
4.1	Analysis of current situation.....	37
4.1.1	Audit of existing site.....	37
4.1.2	Visit rate.....	38
4.1.3	Keywords.....	41
4.1.4	Competitor analysis.....	43
4.2	New SEO Strategy.....	46
4.2.1	On-Page Factors.....	46
4.2.2	Off page factors.....	56
4.2.3	Projected budget 2011.....	59
4.3	Future of SEO.....	60
5.	Conclusion.....	61
6.	Bibliography.....	62



7. Supplements .....	65
7.1 List of keywords.....	65

# 1. INTRODUCTION

Internet becomes more and more important; it spreads into all areas of our lives. It's a great place for communication, finding information, media and new friends. But internet is especially a great place for doing business. People can simple start their own business, like e-shops, with minimal costs. But this simplicity causes, that there are hundreds and thousands of similar web pages, even in small countries like the Czech Republic and only a few of them can be successful. It means that you have to make your web pages better and different than the other web pages to be prosperous in this area.

One of the primary key to be successful is to have high visit rate. Pages without visitors are absolutely useless; they basically can't be successful. Another important thing is to have the visitors from the proper segment, i.e. the market. One way to achieve these two goals is to pay for advertisement, but there is a need to pay it permanently. If you stop, your visit rate will probably decrease. The second way is to make your web pages friendly with search engines. It means that your web page will be perfectly findable in organic ("free") search for the right keywords. Organic search results are listings on a search engine results pages that appear because of their relevance to the search terms. This optimization is called Search Engine Optimization, SEO.

Search Engine Optimization began in mid-1990s, when the first search engines were cataloging the early Web. At the beginning, all a web creator needed to do was to submit the address of a page to the search engines which would send a spider to index that page. Lately, in 1997, search engines recognized that webmasters were trying to "cheat" to rank well in their search engines by filling their pages with excessive or irrelevant keywords. Some of them, for example Infoseek, adjusted their algorithms in an effort to prevent webmasters from manipulating rankings. That's why today's SEO is much more complex, difficult and it is no longer a group of activity of cheating on search engines. It is much more about creating high quality web sites with rich content and good structure. Therefore, there are high demands on people who are making it, because they must have wide knowledge in many areas.

## **2. OBJECTIVES OF THESIS AND METHODOLOGY**

This diploma thesis opens area of SEO (Search Engine Optimization), which has recently become very popular and its role in the world of e-business becomes critically.

The first part of this work is dedicated to the description of mechanisms and function principles of search engines. Then, there is a characterization of search engines marketing and SEO itself, coming from the paper research and analysis of electronic resources.

Theoretical knowledge is then utilized in the specific case study. It comprises analysis of current SEO strategy of an existing company, which is conducting real estate business, using the knowledge gained in the first part. Main criteria are efficiency and cost of these optimizations. Then, new complex SEO strategy is developed.

Last part is dedicated to importance of SEO today and its future development. All conclusions are formulated on the basis of theoretical knowledge gained through the literature overview and case study.

## 3. CHARACTERISTICS OF SEARCH ENGINE OPTIMIZATION

### 3.1 History of search engines

History of search engines is very long and complicated, so this chapter contains only the most important milestones.

#### 3.1.1 First research

The first concepts of search engines were published in 1945, when, after the WWII, Vannevar Bush's *As We May Think* was published in *The Atlantic Monthly*. The main idea of this document was to urge scientists to work together to help build a body of knowledge for all mankind. He described the need of a virtually limitless, fast, reliable, extensible, associative memory storage and retrieval system.

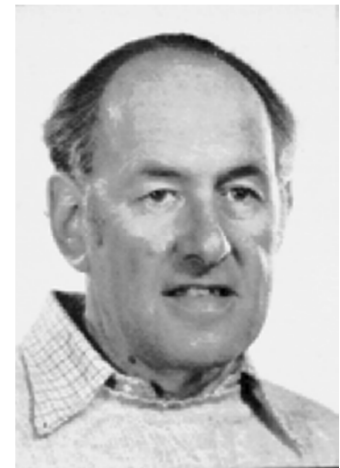


FIGURE 1 - GERARD SALTON, SOURCE: [HTTP://WWW.CS.CORNELL.EDU](http://www.cs.cornell.edu)

The next important scientist in this area was **Gerard Salton** (1927-1995). Generally speaking, he is considered the father of modern search technology. In 1960s, his team developed at the Cornell University the Salton's Magic Automatic Retriever of Text (SMART), which is an information retrieval system. Many important concepts in information retrieval were developed as part of research on the SMART system, including the vector space model, relevance feedback, and Rocchio Classification.

#### 3.1.2 Project Xanadu

The first hypertext project in the world, Project Xanadu, was founded in 1960 by Ted Nelson. Administrators of this system have declared it an improvement over the World Wide Web, saying:

*"Today's popular software simulates paper. The World Wide Web (another imitation of paper) trivialises our original hypertext model with one-way ever-breaking links and no management of version or contents." [1]*

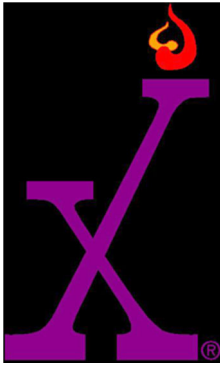


FIGURE 2 - PROJECT  
XANADU SOURCE:  
XANADU.COM

According to the Wired Magazine [2], “Xanadu is the longest-running vaporware story in the history of the computer industry. It has been in development for more than 30 years.” The first attempts to implementation began in 1960, but the software was released in 1998 (and still incomplete). In the meantime, big part of inspiration to create WWW was drawn from Project Xanadu.

### 3.1.3 Archie Query Form

The first search engine in the world was Archie. Archie was created in 1990 by Alan Emtage while he was a student at McGill University in Montreal. The original intent of the name was "archives," but it was shortened to Archie.

*“The author originally wanted to call the program "archives," but had to shorten it to comply with the Unix world standard of assigning programs and files short, cryptic names such as grep, cat, troff, sed, awk, perl, and so on. Archie-that's archive without the "v"-stands for "Archie servers". Archie servers are programs which maintain databases of Anonymous FTP host directories. They are used to find specific file titles. The files can be texts, images, software etc. Archie works by regularly connecting to remote public hosts and automatically downloading directory listings of public files.” [3]*



FIGURE 3 - ARCHIE QUERY FORM SITE: [HTTP://ARCHIE.ICM.EDU.PL](http://archie.icm.edu.pl)

### 3.1.4 World Wide Web Wanderer

First robot (more about this term in in chapter 3.5) was introduced by Matthew Gray three years after Archie, in 1993. This program was named World Wide Web Wanderer and its initial function was to measure the growth of the web. So, the original function was only to count active web servers, but it was upgraded to capture actual URL's. This database became known as the Wandex.

### 3.1.5 Yahoo!

Yahoo! Project began as a student hobby and evolved into a global brand and worldwide known search engine. The two founders of Yahoo!, David Filo and Jerry Yang, Ph.D., students of Electrical Engineering at Stanford University started their guide in a campus trailer in February 1994 as a way to keep a track of their personal interests on the Internet.

The main reason for developing Yahoo! was fact, that Jerry and David's list of favorite links became by the course of a time too long and complicated, so they broke it into categories. When the categories became too full, they developed subcategories - the core concept behind Yahoo! was born. [4]



FIGURE 4 – YAHOO! HOMEPAGE, DECEMBER 1996 [5]

### 3.1.6 Seznam

Seznam.cz is the most visited web portal in the Czech Republic. It was founded in 1996 by Ivo Lukačovič in Prague and it was the first web portal in the Czech Republic. It became market leader in this area, although his market share is still decreasing by Google. [6]

Seznam runs more than 15 different web services and associated brands, the most known are Seznam Email, Firmy.cz, Sreality.cz and Lide.cz.



FIGURE 5 - SEZNAM HOMEPAGE. 1996 [5]

### 3.1.7 Google

In 1996, Larry Page and Sergey Brin, Stanford computer science grad students, begin collaborating on a search engine called BackRub. BackRub was operated on Stanford servers for more than a year—eventually taking up too much bandwidth to suit the university. In 1997, BlackRub was renamed to Google - a play on the word “googol,” a mathematical term for the number represented by the numeral 1 followed by 100 zeros. The use of the term reflects Larry’s and Sergey’s mission to organize a seemingly infinite amount of information on the web. [7]



FIGURE 6 - GOOGLE HOMEPAGE IN 1998 [5]

Today, with world market share more than 85% [8], Google is the search engine number one in almost all the countries over the world.

Google runs over one million servers in data centers around the world, and processes over one billion search requests and about twenty-four petabytes of user-generated data every day. [9]

Google is also, according to BrandZ [10], the most powerful brand in the world. But the dominant market position of Google's services is criticized over issues including privacy, copyright, and censorship.

### **3.1.8 Goto.com – Sponsored Links and paid search**

In February of 1998, Goto.com made the first successful attempt at a pay for placement search engine. Advertisers bid on Goto.com to have better organic search results which were powered by Inktomi. The biggest problem for Goto.com was that while it had advertisers willing to pay for clicks on a bid-per-click basis, they had very low search volume, and they were unable to generate enough revenue.

In 2003, Goto.com (renamed in 2001 to Overture) was acquired by its biggest customer, Yahoo!, for \$1.63 billion. The old brand name of Overture has been re-branded into many of products under the Yahoo! name. [11] [12] [13]

### **3.1.9 Google AdSense**

In March 2003, Google announced a new content-targeted advertising service, enabling people access to Google's network of advertisers. Then, on April 23<sup>rd</sup>, they acquired Applied Semantics, whose technology led into develop of the service named AdSense. Today, Google AdSense is a free service that empowers online publishers to earn revenue by displaying relevant ads on a wide variety of online content, including: site search results, mobile webpages, apps and websites. [13] [14]

### **3.1.10 Youtube**

YouTube is a video-sharing website where users can upload, share, and view videos, created by three former PayPal employees in February 2005. In 2006, Google acquired YouTube for \$1.65 Billion which ultimately becomes the 2nd most used search property in the world. Today, Youtube is integrated into Google Adwords advertising system. [13]



### 3.1.11 Bing

Bing (formerly Live Search, Windows Live Search, and MSN Search) is a web search engine developed by Microsoft. Bing was introduced by Microsoft CEO Steve Ballmer on May 28<sup>th</sup>, 2009 at the All Things Digital conference in San Diego. It went fully online on June 3<sup>rd</sup>, 2009, with a preview version released on June 1<sup>st</sup>, 2009. [15]

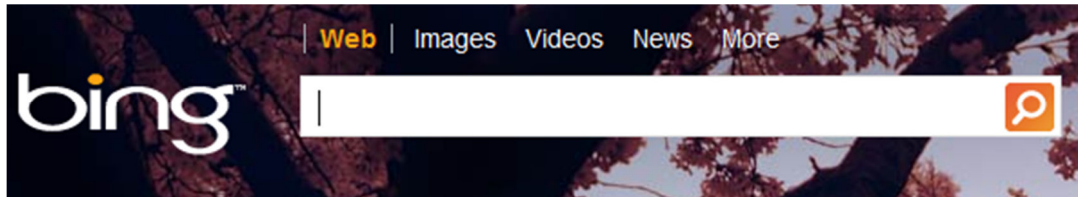


FIGURE 7 - BING.COM HOMEPAGE [5]

### 3.2 Market share of search engines

Figure 8 shows global market share for search engines in December 2010, according to [marketshare.hitslink.com](http://marketshare.hitslink.com). As you can see, Google.com is the global dominant search engine with more than 84% of all searches in the world. The rest is divided among Yahoo, Baidu (China), Bing and several smaller engines.

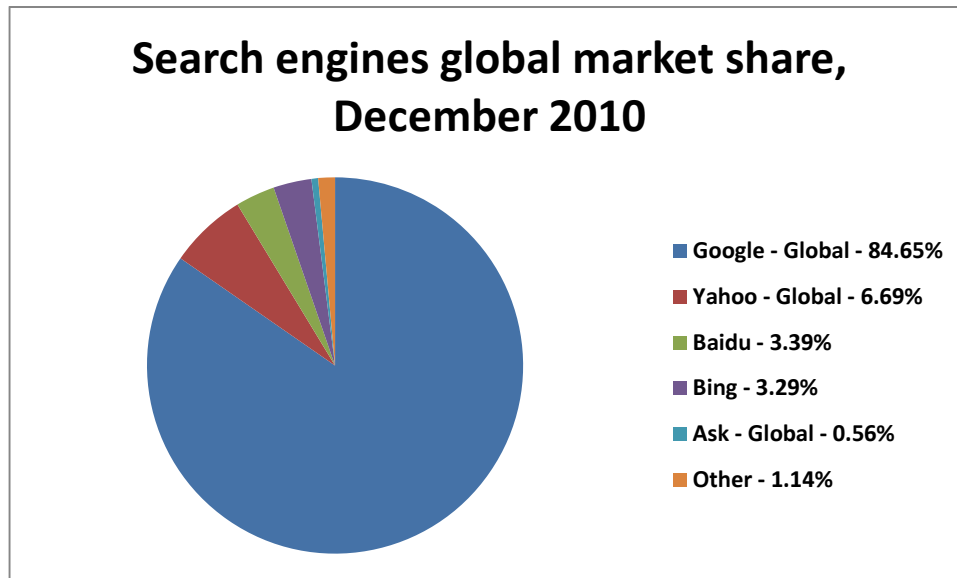


FIGURE 8 - SEARCH ENGINE GLOBAL MARKET SHARE, SOURCE: [MARKETSHARE.HITSLINK.COM](http://MARKETSHARE.HITSLINK.COM)

As shown on Figure 9, the situation in the Czech Republic is completely different. Together with China (Baidu), Russia(Yandex), Japan and South Korea, Google is not the most dominant search engine, number one is Seznam.cz with about 62% of market share. However, these results are provided by Navrcholu.cz and the used measurement method is very inaccurate, so the real values could be completely different. Therefore it is possible, that Google is already number one. Moreover the market share of Seznam.cz is constantly decreasing, so we can expect that Google position will still grow in the future. [16]

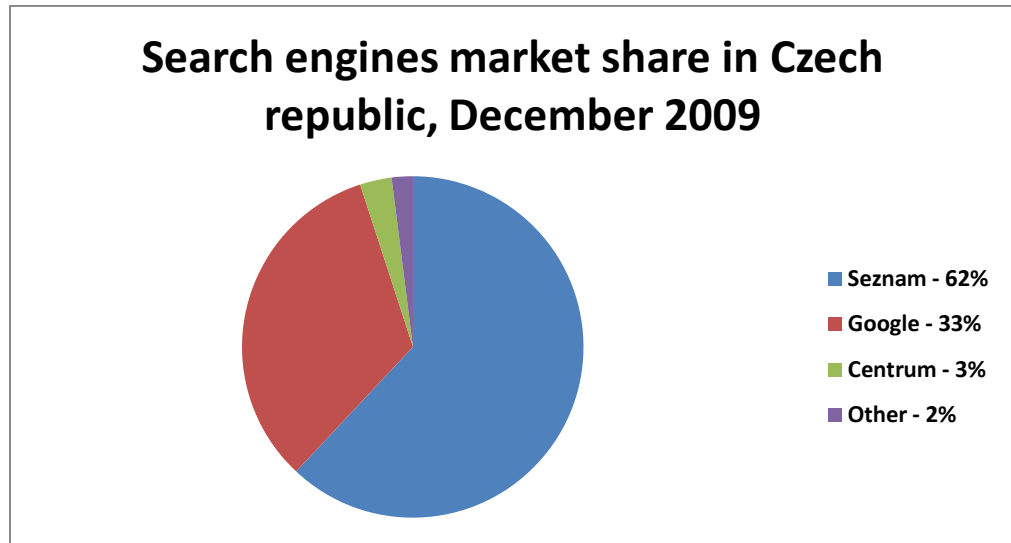


FIGURE 9 - SEARCH ENGINES MARKET SHARE IN CZECH REPUBLIC, DECEMBER 2009, SOURCE: [WWW.IINFO.CZ](http://WWW.IINFO.CZ)

### 3.3 Search Engine Marketing (SEM)

Search Engine Marketing (SEM), is a form of Internet marketing that promotes websites by increasing their visibility in search engine result pages (SERPs). It uses several methods, mostly promoting through the use of paid placement, contextual advertising and paid inclusion. [17]

One of the most powerful tools in SEM are Pay Per Click (PPC) systems.

#### 3.3.1 Pay Per Click (PPC)

Basically, PPC is an internet advertising model, where advertisers pay only if their ad is clicked. This is a big difference compared to classical banner campaigns, which are usually paid for impressions.

PPC can be divided into two groups:

- Ads showed on SERP
- Ads showed in display network

Ads showed on SERP are only in text form and they are linked to the searched keyword. This form of advertising is not disturbing, thus people are more likely to click on these ads. Figure 10 shows the Google SERP for the keyword “real estate”.

There are two big PPC systems in the Czech Republic – Google and their system Adwords, Seznam with Sklik and two smaller ones which has only display network – Adfox and Etarget.

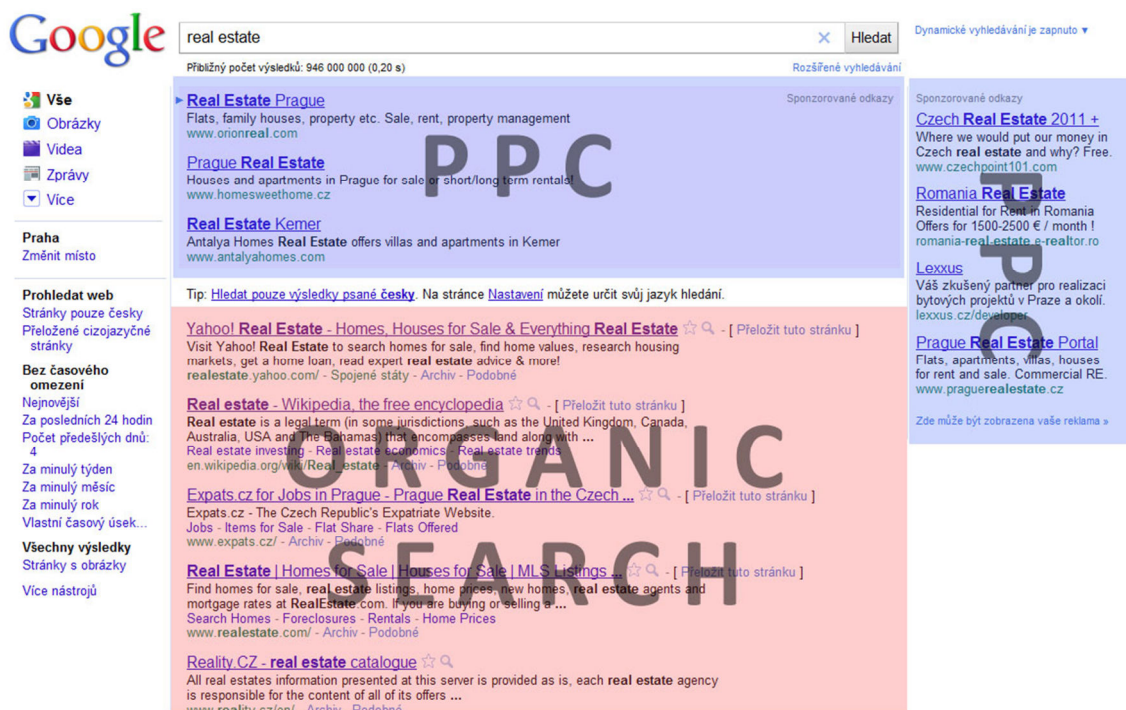


FIGURE 10 - GOOGLE SEARCH ENGINE RESULTS PAGE

As you can see on Google Search Engine Results Page, paid links are distinguished from the organic search and they are marked as „Ads“. In spite of this fact, this form of advertising is still much more successful than classic banners are – the click-through rate is usually in range of 0,5 – 5%. This is because we serve what the people are looking for.

Other form of PPC is adverts in display network. Again, ads are connected to the given keywords, so they are displayed only on the webs with the same contextual meaning. Figure 11 shows the ads on of the real estate pages. These ads have the same context – real estate.

Katalog rodinných domů projekty pro vás.  
 ING Konto pro zhodnocení peněz  
 Chcete nás podpořit? přidejte si odkaz

Výhodná nabídka

**Kříze stlačila ceny bytů**  
 Kupujte za rekordně nízké ceny  
 Byty v Praze za 1,4 mil! Ceník  
 zde.  
[www.ekospol.cz](http://www.ekospol.cz)

**Byty Vrchlického Kolín**  
 nové byty na prodej v centrální  
 části Kolína  
[www.paradnibydeni.cz](http://www.paradnibydeni.cz)

**Reality**  
 Online nabídka z celé ČR. Nákup,  
 prodej, pronájem.  
[Aukro.cz](http://Aukro.cz)

Reklamy Google

Pro realitní kanceláře:

[Přihlášení](#)  
[Nemovitosti pro Vaši RK](#)  
 Ceník a podmínky inzerce

**realitní Jihočeský kraj** (111)  
**realitní Jihomoravský kraj** (199)  
**realitní Karlovarský kraj** (19)  
**realitní Královéhradecký kraj** (372)  
**realitní Liberecký kraj** (47)  
**realitní Moravskoslezský kraj** (294)  
**realitní Olomoucký kraj** (126)  
**realitní Pardubický kraj** (64)  
**realitní Plzeňský kraj** (29)  
**realitní Praha** (2825)  
**realitní Středočeský kraj** (929)  
**realitní Ústecký kraj** (51)  
**realitní Vysočina** (19)  
**realitní Zlínský kraj** (23)

**lomů**  
[ok Garsoniera, 1+1,](#)  
[ok, 3+1, 3+kk, 4+1,](#)  
[-1 a větší,](#)  
[nerační, Ostatní,](#)

**pronájem bytů**  
[0+1, 1+kk, Garsoniera, 1+1,](#)  
[2+1, 2+kk, 3+1, 3+kk, 4+1,](#)  
[4+kk, 5+1 a větší,](#)  
[Dvougenerační, Ostatní,](#)

FIGURE 11 - PPC DISPLAY NETWORK

### 3.3.2 Classical Banners

Although classical banners are not directly connected to the area of search engines, their role on overall marketing is very important. The history of internet advertising began on October 27<sup>th</sup>, 1994, when the magazine Wired24 placed first web banner on their webpage HotWired.com (Figure 12). The submitters of these ads were 14 companies including MCI, Volvo, Club Med, 1-800-Collect and Zima, but legend has it that the first HotWired banner ad was from AT&T, with text: “*Have you ever clicked your mouse right here? You will.*” [18]

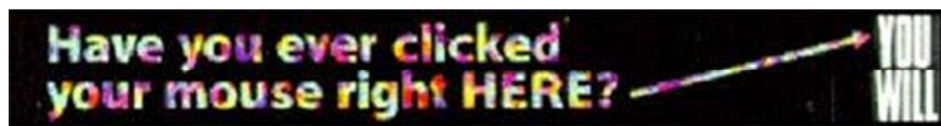


FIGURE 12 - FIRST BANNER FROM WIRED.COM, SOURCE:WIRED.COM

Banners are usually paid for impressions (officially, but there is always scope for negotiation). Unlike the PPC, banners are more like classical advertising in traditional media.

Big problem of banners is phenomenon called “banner blindness”. This term was innovated by Benway and Lane in 1998, and it is basically the tendency of people to ignore

banner ads on Web sites. This phenomenon makes banners unusable for a substantial part of the Internet community.

Figure 13 shows heatmaps (more discussed in chapter 3.4.5 -Eye-tracking) representing banner blindness – areas with banner ads have no “hits”.

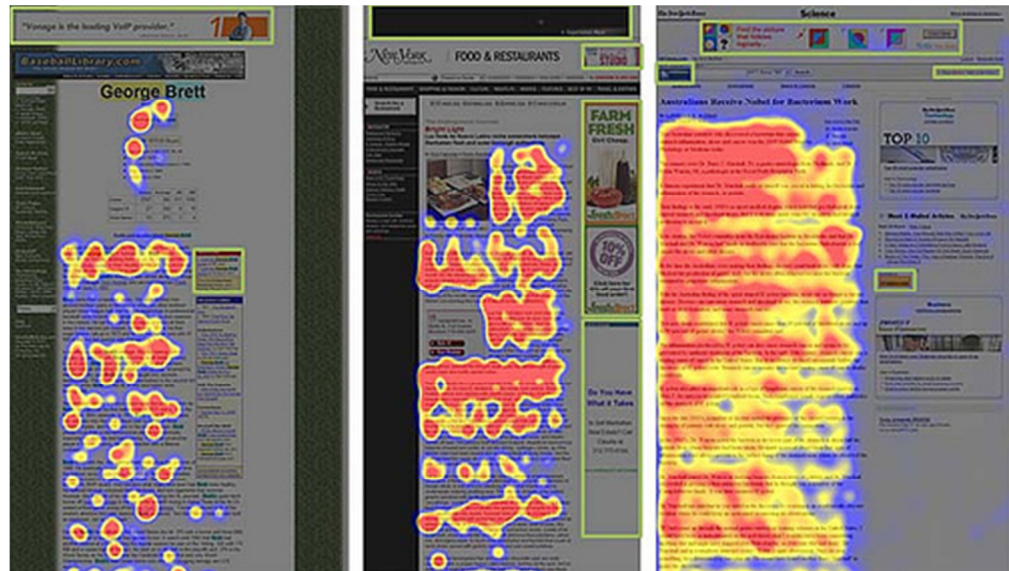


FIGURE 13 - BANNER BLINDNESS - HEATMAPS, SOURCE: TECHNOLOGYEVANGELIST.COM

Therefore, banners are more suitable for image (brand-building) marketing purposes than for performance marketing, mainly because of low CTR\* of banners. Besides there is a problem with targeting to the target marketing segment.

\* CTR - Click Through Rate = number of users who clicked on an ad divided by the number of times the ad was displayed (impressions).

### 3.4 Human goals of searching

Basic goal of a human searcher is to obtain information relevant to the given keyword (inquiry). However, searcher's inquiries can take many different forms.

*“One of the most important elements to building an online marketing strategy for a website around SEO and search rankings is developing a thorough understanding of the psychology of your target audience. Once you understand how the average searcher, and more specifically, your target market, uses search engines, you can more effectively reach and keep those users.” [19 p. 3]*

Search consists of one or more words. Figure 14 shows length of search queries. It follows, that almost 85% of searches consists of 1-4 words queries.

Words	Percent of searches
1	25,32%
2	24,96%
3	19,80%
4	13,17%
5	7,53%
6	4,04%
7	2,15%
8	1,19%

FIGURE 14 - LENGHT OF SEARCH QUERIES, SOURCE: COMSCORE

It is very important for every search engine to understand, how people search, therefore, they invest a lot of money into research of these processes. Result of one of these researches - user query session, conducted by Microsoft is on Figure 15.

## Inside a real query "session"

Example decision: Which shoes to buy?

Total task time: 55 minutes and 44 seconds

Dwell time

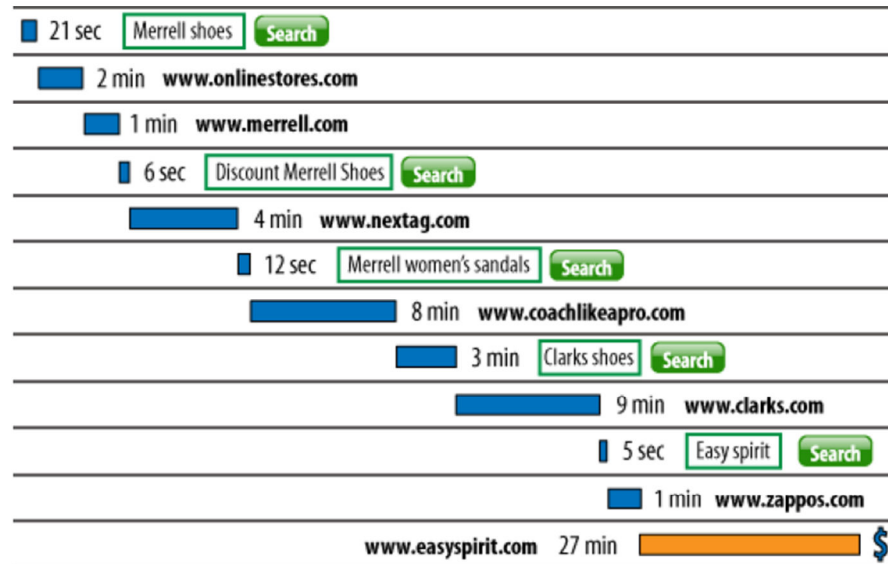


FIGURE 15 - REAL QUERY SESSION, SOURCE: [19]

It is obvious, that tested user performed five searches over a 55 minute period before making a final decision and he was thinking about his task in stages.

Moreover, it is increasingly common that search sessions of this type can take place over days, so the web developers should take this fact into account.

### 3.4.1 Types of queries

Search queries can be divided into three main groups [19]:

- Navigational Queries
- Informational Queries
- Transactional Queries



#### ***3.4.1.1 Navigational Queries***

Navigational searches are performed in case where the user is looking for a specific website. Sometimes the user may not know the exact URL, and the search engine serves as the “White Pages.” Value of these queries is generally low, with the exception of navigational searches on the publisher’s brand where the value is very high as these types of searches tend to lead to very high conversion rates.

#### ***3.4.1.2 Informational Queries***

This type of search involves a huge range of searches – for example weather, looking for the nearest pub, maps or looking for the info about new cars. Although these queries are primarily non-transaction oriented, goal and no interaction beyond clicking and reading are required. Brand searchers with positive impressions of your site, information or company and they can later come and make desired action on your site. These queries have medium value.

#### ***3.4.1.3 Transactional Queries***

Transactional searches are the most valuable type of queries, although they don’t necessarily involve a credit card or wire transfer. Transaction query can be for example registration of newsletter, trying a demo version of some software, creating an email account or finding the best local pizzeria for tonight dinner.

It follows, that this type of queries is most valuable.

### **3.4.2 Eye-tracking**

There are usually a lot of questions about the actions users take on webpages. Do they go directly to the title of the first result? Do they first check the terms in boldface? Or maybe the images capture their attention? All these data can be derived from gazemaps and heatmaps. Eye-tracking technology follows and records a reader’s eye movements as the person reads a page. From these data a “gaze map” is derived, where the person’s eyes move and where they stop to look closer. Gaze maps are then plotted on a “heat map”, which highlights the areas where readers looked the most. [20] [21]

Yahoo! eye-tracking studies reveal a general pattern to the way people browse webpages:

- People scan the main sections of a page to determine what it's about and whether they want to stay longer.
- They make decisions about the page in as little as three seconds.
- If they decide to stay, they pay the most attention to the content in the top part of the screen.

*When people do decide to read a page, their eyes sweep horizontally from left to right, often focusing on a roughly triangular area in the upper-left corner of a webpage, or the upper-left corner of the webpage's main block of content. But this pattern varies depending on a page's layout and purpose. For example, a person's eyes will move differently over a photo-heavy slideshow, a text-heavy blog, or a page with a two- or three-column layout. [21]*

Figure 16 shows heatmap. The darker (red) the pattern is, the more time people spent looking at that part of the page.

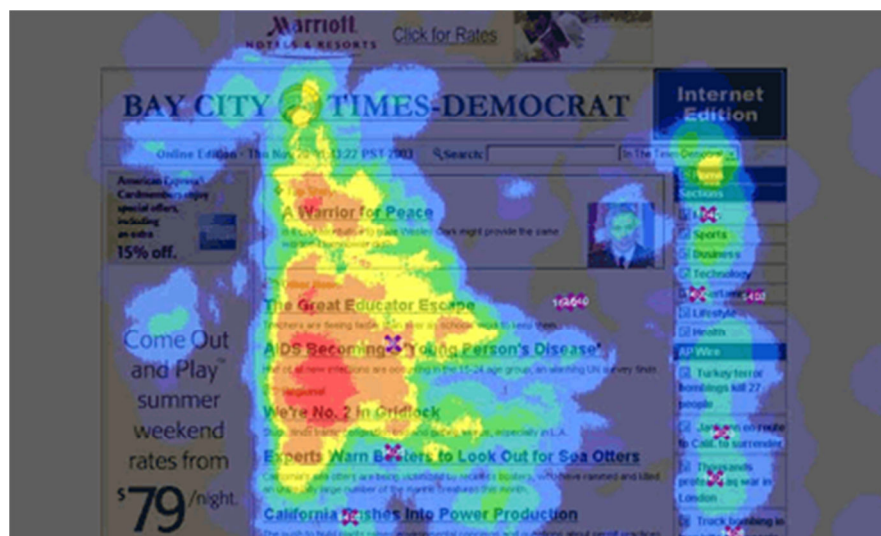


FIGURE 16 - HEATMAP, SOURCE: SYMBIO.CZ

Generally speaking, there are two methods how to obtain heatmaps - eye tracking and using specialized software, which is trying to algorithmically simulate user behavior.

The most known software in this area is Feng-GUI. According to the [feng-gui.com](http://feng-gui.com), their software simulates human vision during the first 5 seconds of exposure to visuals, and creates heatmaps based on an algorithm that predicts what a real human would be most likely to look at. Although its manufacturer claims, that these results are 75% identical in compare with real eye-tracking results, some researches revealed, that results can be very different.

### **3.5 How search engines work**

Today's search engines are very powerful and sophisticated tools used for finding information on the internet.

According to Google blog [22], there were 4500 queries processed by Google engine every second and there were 1 trillion (1 000 000 000 000) indexed URL in 2007. Today, in January 2011, these numbers are certainly much higher.

Functions of search engines can be divided into two main groups:

- **Crawling and indexing the billions of pages and files on the web**
- **Responding to user queries by providing lists of relevant pages**

#### **3.5.1 Crawling and indexing**

Search engines use automated programs, usually called spiders or crawlers.

*A crawler is a program or automated script (often called a bot, short for robot) that scuttles around the Web visiting URNs. Crawlers navigate from URL to URL by following links on the pages of the websites that they visit. [23 p. 2]*

For example, Google has Googlebot and Seznam has Seznambot. Once these crawlers find a webpage, their job is to parse the code and files from them and store pieces of these pages into massive arrays of hard drives. Because these arrays holding billions of pages and they need to be ready to access in a few milliseconds, the search engines have conducted massive data centers to deal with this. The crawlers also search for the links. They use these links for ranking the pages and for finding these pages, because crawler doesn't know the webpage until he finds link to it. So, when the crawler finds the link, he follows it and crawl the linked page.

This crawling is still repeated and updated. Some sites are crawled more frequently than the others, mainly depending on the content of the website, how often are they updated and on page rating.

One of the very important things to understand about search engines from the SEO point of view is that crawlers are only software programs. It means that they are only smart as the algorithms used and implemented in them are and they are not able to read pictures, music, videos etc. Although there are some algorithms that can partially interpret this content, they still don't have the adaptive intelligence of human beings.

When the page is processed by the crawler, we can say it is indexed. The purpose of indexing is to optimize performance in finding relevant documents for a search query. Without an index, the search engine would have to scan every document, which will be much slower.

### **3.5.2 Ranking of the page**

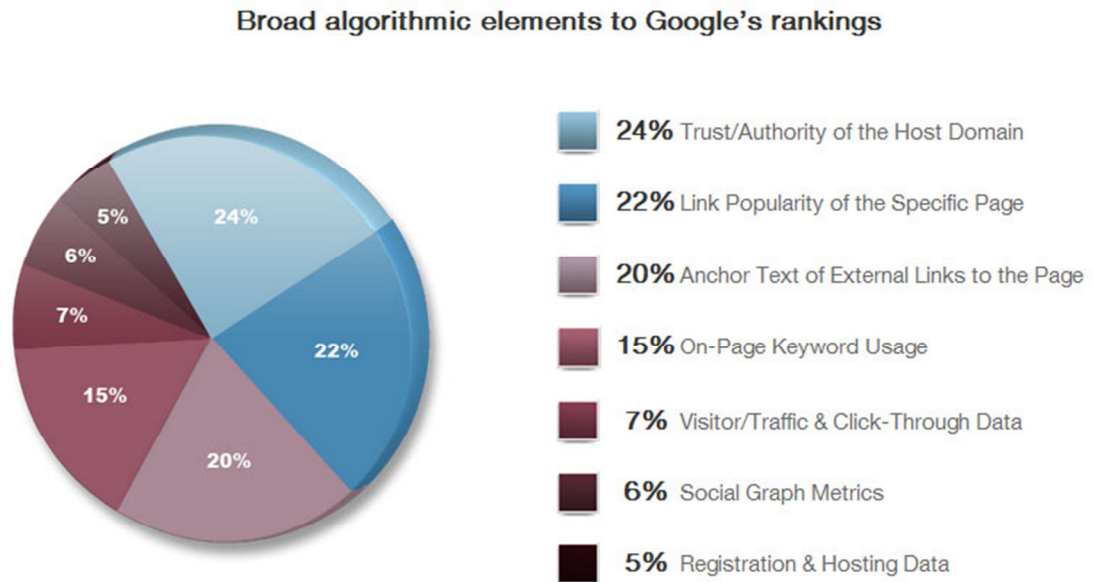
When the user types something into the search engine, it must search the whole database in a few seconds and return only the results that are related to the searcher's query. These results also have to be sorted by perceived importance. This is done by taking into account the relevancy of the word in relation to the searched query and trust and authority associated with the site.

*Relevance is the degree to which the content of the documents returned in a search matches the user's query intention and terms. The relevance of a document increases if the terms or phrase queried by the user occurs multiple times and shows up in the title of the work or in important headlines or subheads, or if links to the page come from relevant pages and use relevant anchor text. [19 p. 31]*

For example, a Google ranking is computed mainly on the basis of:

- Trust/Authority of the Host Domain
- Link Popularity of the Specific Page
- Anchor Text of External Links
- On-Page Keyword Usage
- Traffic and Click-Through Data
- Social Graph Metrics
- Registration and Hosting Data

Figure 17 shows estimated weight of these particular factors provided by Seomoz.org.



**FIGURE 17 - BROAD ALGORITHMIC ELEMENTS TO GOOGLE'S RANKINGS, [24]**

All these particular factors are more described in detail in chapter 3.6 - Search Engine Optimization, On Page and Off Page factors.

### **3.6 Search engine optimization**

Search engine optimization (SEO) is recently much discussed topic in the world of internet. This crucially important factor in the world of internet business is to have enough visitors on our webpages. There are several possibilities how to make it, but the most common way, with more than **12 billion searches** performed every month as of January 2009 (1), is to get the traffic from search engines.

**Basically, SEO is a set of techniques supposed to provide higher positions on the search engine results page (SERP) ensuring more site visitors.**

In last years, search engines were not smart as today, so the SEO was relatively easy. It means that there were simple ways how to get good positions on search engine results page only by changing some text on our website.

Situation is far away complicated today. Search engines generate their revenues primarily through paid advertising and they need as much visitors as possible, so their mission is to provide relevant, fast and fresh information to be attractive for the users. Therefore, the search engines companies are developing more and more sophisticated algorithms for determining the relevancy of the page in relationship with the searched keyword.

Today's SEO is not only about changing the text on the website and acquiring new backlinks (links pointed to your Web site from other Web sites), but it is much more complex activity, which involves methods how to develop user friendly website with rich content, using of new media like social networks, blogs etc.

*“One of the most important elements to building an online marketing strategy for a website around SEO and search rankings is developing thorough understanding the psychology of your target audience. Once you understand how the average searcher, and more especially, your targer market, uses search engines, you can more effectively reach and keep those users.” (1)*

Generally speaking, the SEO optimization techniques can be divided into two different interdependent groups – On page and Off page SEO. Both are crucial ranking factors that need proper attention to secure top ranking for your website.

The first step of each SEO strategy is to have a list of keywords. Keyword is a word that a search engine user might use to find relevant web page and it can be obtained using several techniques.

### **3.6.1 Keyword research**

Keyword research is the most overlooked task for SEO, but it is also the most important. Keywords are basically words and phrases that are related to given business, and which are assumed to be searched by prospective customers.

At first, it is necessary to generate a list of potential keywords, which should be as large as possible, with the keywords organized by search volume. Volume refers to the number of searches performed on a unique keyword over a period of time (usually a month). A large list ensures that you have a healthy mix of keyword terms. The best tools for Czech market are probably Google Adwords ([adwords.google.com](http://adwords.google.com)) and Seznam Sklik ([sklik.cz](http://sklik.cz)) Keyword Tools. Although these tools are designed primarily for PPC systems, there are very useful for standard keyword research too. Other way how to obtain additional words can be competitor's analysis. Competitors usually face the same problem, so the review of their website could be very resourceful.

Second step should be the keyword sort according to their relevance and suitability for a given webpage, part of this activity should be brainstorming, which can reveal some other keywords as well.

At the end, there will be a list of keywords, which contains a few “main” keywords with higher search volume and big number of keywords with smaller volume – long tail keywords.

#### ***3.6.1.1 Long Tail keywords***

Recent researches shown, that less than 30% of the overall searches performed on the web are made of „popular keywords“, which have high search volume. The remaining 70%



are keywords, which are commonly known as the “Long Tail” of search. Long Tail contains big number (hundreds of millions) of unique searches that are conducted only a few times a day, but all these keywords together can generate high visit rate. [19 p. 136]

Besides of that, visitors coming from long tail has usually higher conversion rate (Figure 17). It is caused mainly by better targeting, when user has more specific query. Other advantage of Long Tail is fact, that there is usually small competition, thus it is much easier to optimize to these keywords.

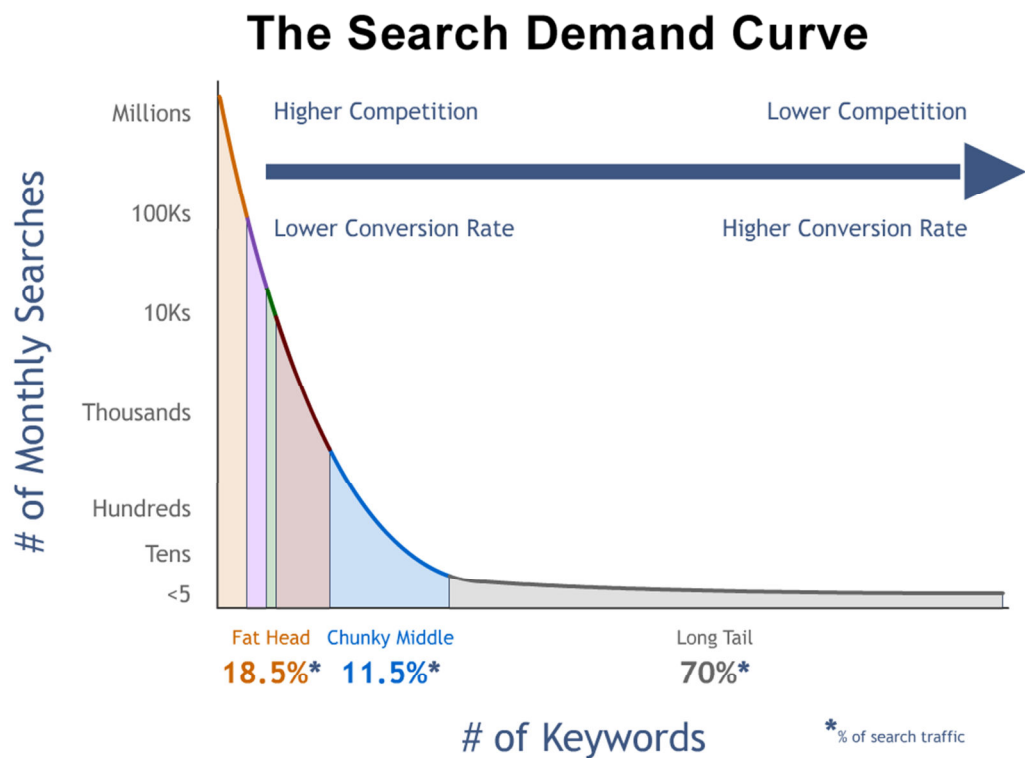


FIGURE 18 - SEARCH ENGINE KEYWORD DEMAND, SOURCE: SEOMOZ.ORG

### 3.6.2 On-Page factors

On-Page optimization factors are related directly to the content and structure of the website. Despite of fact, that Google has greatly increased the importance of off-page SEO ranking factors, it is still very important to use at least fundamental on-page SEO, because you can attract or discourage search engines from the indexing of your webpage.

These optimizations consist mainly of pages written in HTML (Hypertext Markup Language), but also apply to other readable document formats, that are indexed by search engines, like PDF or TXT files.

On Page optimizations can be divided into these sections:

- Title
- HTML Meta Tags
- URL
- HTML Body Tags
- Internal Links Architecture

### **3.6.2.1 Title**

Title is the most important factor (behind overall content), so the keywords should be definitely included.

*Search engines use the text contained within the title tag as a primary factor to determine what the content of a certain Web page is about. The text that makes up your title tag is also the clickable link text that typically appears on the search-engine results pages when your site appears in the rankings. Title tag text also appears at the top of a Web browser when someone is visiting a particular page on your Web site. [25 p. 36]*

Title in HTML has the following code:

```
<HEAD>  
<TITLE>My Home Page</TITLE>  
</HEAD>
```

Title appears mainly on two places, in the browser (Figure 19) and on the result page of search engines (Figure 20).

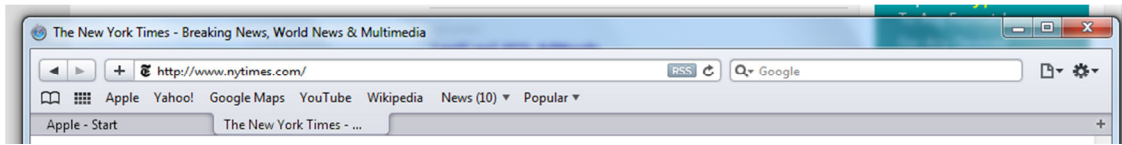


FIGURE 19 - TITLE IN BROWSER



FIGURE 20 - TITLE IN SEARCH ENGINE RESULT

It can appear in some third party applications as well. Basically, it is used for the identification of the webpage. SeoMoz.org in their correlation data studies find out, that using the keyword term/phrase as the very first words in the page title has the highest correlation with high rankings, and subsequent positions correlate nearly flawlessly to lower rankings. This fact is shown on Figure 21.

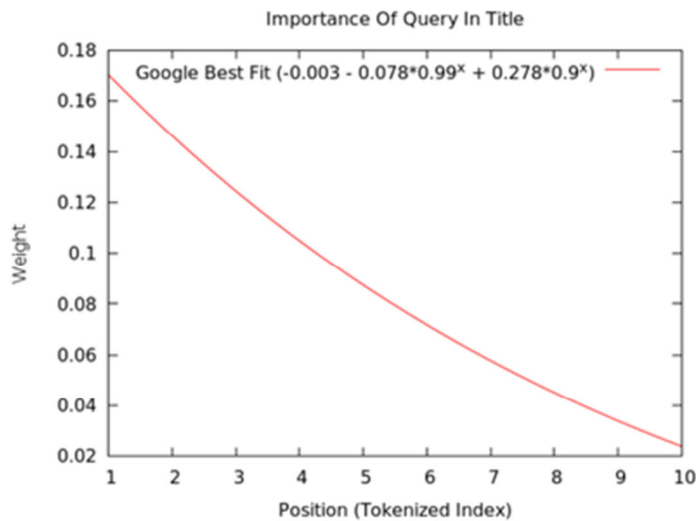


FIGURE 21 - IMPORTANCE OF QUERY IN TITLE, SOURCE: SEOMOZ.ORG

From that it is obvious, that it is very important to have unique title on every page.

### 3.6.2.2 HTML Meta Tags

#### *Meta Description*

Although meta description is no longer used for "rankings" by any of the major engines, it is an important place to use the target keyword because it is occurring on the search engine results page, so it can directly influence the click-through rate and increase the traffic. However, this fact is not a rule and search engine can use other text from the website.

Example of the META description and META keyword tags in HTML:

```
<meta name="description" content="This is description"/>
```

Example of influence of description to search engine results (Google) is on Figure 22.

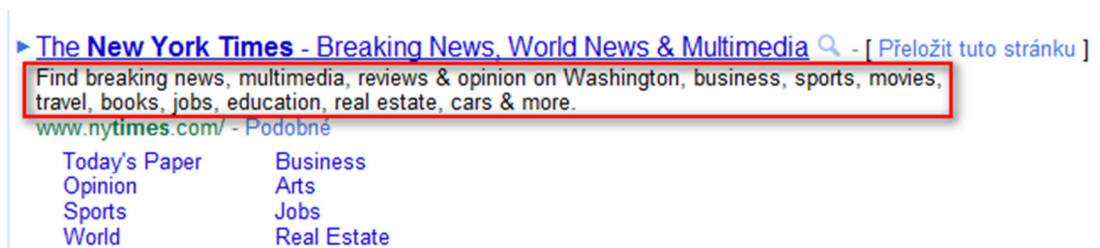


FIGURE 22- INFLUENCE OF META DESCRIPTION TO SEARCH ENGINE RESULTS

#### *Meta Keywords*

Meta Keywords tag has today almost no importance. As mentioned in [26], Google is no longer using this tag for rankings. The same situation is with Seznam.cz. Only search engine which recorded and utilized meta keywords was Yahoo, but not for rankings.

Today, when Yahoo is acquired by Bing and this function is no longer supported, there is no longer reason for using it.

Besides that, there is always danger of data abuse by competitors. [27]

### ***Meta Robots***

The robots attribute is supported by all the major search engines. Its purpose is to control the robots – to allow or disallow to index given page and to follow links. From the perspective of SEO, it is important to be sure, that there are not any directives that could potentially disallow access by the engines.

### ***Rel="Canonical"***

A canonical page is the preferred version of a set of pages with highly similar content. For that reason, users can specify a canonical page to search engines by adding a <link> element with the attribute rel="canonical" to the <head> section of the non-canonical version of the page. Adding this link and attribute lets site owners identify sets of identical content. [28]

### ***3.6.2.3 HTML Body Tags***

Body tags can be divided, according to SeoMoz.org [29] into following groups:

#### ***Keywords occurrence***

Optimal number of times to employ a keyword on the page is approximately 2-3x for short pages and 4-6x for longer pages. Important thing is not to overfill page and never use more than makes sense in the context of the copy. [29]

#### ***Overall Keyword density***

Although more usage of a keyword can potentially improve targeting/ranking, keyword density is not taken into account when computing the relevance of the web page. [30]

#### ***Keyword Usage Variations***

It is generally recommended to use at least one or two variations of given keyword (or phrase) and to split these variations among the webpage in the similar way like the keywords itself (or instead these keywords).

### ***First-level heading (h1)***

This element has been considered as important for a long time, but recent research in this area showed up, that they have a very low impact to a web page rankings. However, this fact is not a reason to stop using h1, it is still a good from a point of view of semantics, thus it is recommended to use proper headline with proper keywords.

The code of tag heading is:

```
<h1>Heading 1</h1>
```

### ***Subheadings (h2, h3, h4)***

Although these tags have almost no SEO impact, it still good to use them because of the same reason like h1. Code is:

```
<hn>Heading</hn>
```

Where “n” is the level of heading.

### ***Alt Attribute***

The alt attribute was originally intended to understand the content of the image when viewing is not possible. Studies shown, that this attribute has quite high SEO effect. Therefore, it is strongly advised to always use this attribute, ideally filled with desired keywords. Moreover, under the W3C specifications for XHTML, the alt attribute is required in all image tags and it is good from the point of view of usability as well. [19 p. 286], [31]

Code:

```

```

### ***Image Filename***

Image file should be named properly (again, ideally with a desired keyword), because search engines read the image filename to see whether it provides any clues to the content of the image. Moreover, image traffic can be substantial source of visitors.

### ***Bold and Strong text***

Despite the fact, that a lot of older sources quotes that the influence of using these tags is big, using bold and strong text has very small SEO effect. However it may be worth using them, particularly for those who are looking to gain every last bit of optimization out of keyword usage. [19 p. 218], [29].

Code:

```
<STRONG>Strongly emphasized text.</STRONG>  
<B>Bolded text.</B>
```

### ***Italic and Emphasized text***

Significance of italic and emphasized text is similar to bold and strong text so it is recommended to use it at least in one instance.

### ***Internal Links Anchors***

*No testing has yet found that internal anchors are picked up/counted by the engines.* [29]

#### **3.6.2.4 URL**

Although search engines claim, that they no longer use keywords in URL for rankings, they still have same SEO impact - correct structure of an URL (Uniform Resource Locator) can increase webpage CTR, because when the searched keywords are in URL, they are highlighted on the search engine results page. Example of this fact is on Figure 23 – Google result for query “byty na prodeji”.

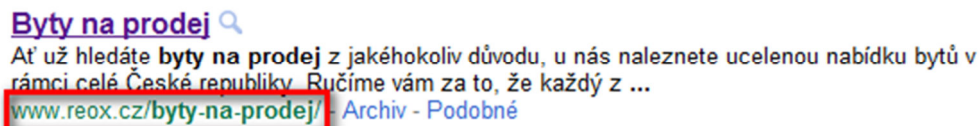


FIGURE 23 - RESULT FOR QUERY "BYTY NA PRODEJ"

Generally speaking, there are some recommendations for creating the URLs:

- **Keyword Location** – the targeted keyword should be as close as possible to the domain name.
- **Length** - shorter URLs are usually performs better in the search results and they are more likely to be copied or shared.
- **Word Separators** – Today’s most spread separators are hyphens, because they still have the best credit in search engine ranking processes, so it is still the best choice.

### *Internal Links Architecture*

High-quality internal linking is important both from the point of view of visitors and search engines. It helps visitors to quickly and easily navigate the website. Just like human visitors, search engines are crawling these links as well; every link is taken into consideration. It is good to have some kind of internal navigation structure on every webpage, for example breadcrumbs navigation.

### **3.6.3 Off Page Factors**

Off page optimization is a fundamental part of any SEO campaign and it is usually very time and cost consuming. Generally speaking, off page optimizations are focused on backlinks. Backlinks are the main determinants of ranking process. When On-Page factors (site architecture, content) have big impact in achieving search engines friendliness, Off-Page are critically important in ordering results on search engines results pages. But their impact is also multidimensional – for example, the more high quality backlinks page has, the more frequently and more deeply the page is crawled. In addition, each links context (mainly its location within the page, anchor text, surrounding text etc.) is taken into



consideration when determining the link relevance. Therefore, link building is fundamental part of every SEO strategy. Moreover, this should be never stopped and it should be a part of long term marketing strategy for a website. [19 p. 279]

### ***3.6.3.1 Backlinks influence on search engine rankings***

Although measuring the quality of websites using backlinks was not first made by Google, they made it first popular with the implementation of their algorithm called **PageRank** (named after Larry Page, one of the founders of Google). In a simplified way, the higher the number and quality of backlinks, the higher the PageRank is. Even though this chapter is dedicated only to PageRank, all modern search engines works on the similar principles, for example Seznam.cz has similar system called **Srank**. This rank is represented by the number 1-100 and his derivation is very similar to the PageRank.

#### ***PageRank algorithm***

The PageRank algorithm was originally made on the basis of PageRank thesis authored by Sergey Brin and Larry Page. Basically, each link to a web page is a vote for this page, but votes don't have equal weight. [19 p. 280]

Next part is outlining the basic principles of PageRank. First of all, PageRank does not rank web sites as a whole, but is determined for each page individually. Every this webpage on the internet has some tiny amount of PageRank. Pages can then increase their PageRank by receiving links from other pages.

Simplified original PageRank computation is shown on figure 24, where:

- PR(A) is the PageRank of page A
- PR(Ti) is the PageRank of pages Ti which link to page A
- C(Ti) is the number of outbound links on page Ti and
- d is a damping factor which can be set between 0 and 1.

$$\mathbf{PR(A) = (1-d) + d (PR(T1)/C(T1) + \dots + PR(Tn)/C(Tn))}$$

FIGURE 24 - PAGERANK EQUATION, SOURCE: [HTTP://INFOLAB.STANFORD.EDU](http://infolab.stanford.edu)

It had to been taken in account, that this computation is extremely simplified and real computation of PageRank is very complicated and not public. Another important fact is that we have to distinguish between the public PageRank and real PageRank, which is not public. Many people attach very high importance to the public rank, but the truth is, that his significance is lower and lower every year. Some sources say that Google will no longer update this visible rank and his role in SEO becomes less important. Despite this fact, PageRank is still very good way how to measure web page quality.

### ***3.6.3.2 Trust/Authority of the Host Domain***

As mentioned in chapter 3.5.2., biggest influence has trust and authority of the host domain.

According to the [32] , main factors from which the trust of domain is derived are:

- Where Are Your Links From
- Who Do You Give Links To
- Registration Details
- PageRank / Link Juice
- Domain diversity
- Deep Links

### ***3.6.3.3 Link Popularity of the Specific Page***

Link popularity is a measure of the quantity and quality of links from other web sites that link to a specific site or web page on the World Wide Web. It is one of the key factors of determining the quality of the content of the given website. In theory, off-the-page-criteria add the aspect of impartiality to search engine rankings, like an endorsement by others of the quality and usefulness of another site. Therefore, link popularity plays an important role in the visibility of a web site among the top of the search results.

More about ranking of the page, based on the backlinks is in chapter 3.5.2.

#### ***3.6.3.4 Anchor Text of External Links***

Anchor text is basically the visible hyperlinked text on the page. This text plays big role in SEO, because it can significantly boost your site relevance. The common mistake is to use the general words like “Click here”. In this case, the search engine has to derive the meaning of the link from the other words on that webpage which is less effective. When the link has keywords in anchor text it is much more effective and these words have the highest relevance.

## **3.7 Black hat SEO**

Black Hat SEO is basically defined as a group of techniques used to get higher search rankings using unethical methods. These methods are usually:

### **3.7.1 Cloaking**

Cloaking generally means to present different version of web page to search robots and human visitors. Therefore, it is considered as a deceptive method used to cheat search engines in order to rank well for particular keywords.

### **3.7.2 Doorway page**

Doorway pages are the web pages designed and built specifically to catch search engines' attention and to bring visitors to your website. They can be also known as portal pages, jump pages, gateway pages, entry pages, and by other names as well. The problem is that these over-optimized web pages are usually unable to fulfill their function, so they are often redirected to desired landing page. This is obviously attempt to manipulate search engine results.

### **3.7.3 Deceptive redirect**

Deceptive redirect (sometimes called as form of cloaking) is situation, where the user is voluntarily redirected to another page, usually using JavaScript, which search engine crawlers hardly detect. In many cases, it is used together with doorway page.

### **3.7.4 Hidden content**

There are many ways to hide content on the web site. All of them belong to Black Hat SEO. This content is usually full of keywords which are not being visible to the end user of the site but it will be crawled by a search engine spider. Therefore it strongly affects the end relevancy of a search query.

### **3.7.5 Alt spam**

Alt spam is used to display text in case when someone visits your page with a browser that can't show images. Therefore, alt spam is using unnaturally amount of keywords, which are not related to the image in these attributes.

### **3.7.6 Keyword stuffing**

Keyword stuffing occurs when the page is unnaturally overfilled with keywords in the Meta tags or in content. This technique is not effective because search engines no longer give rankings to pages using this technique.

### **3.7.7 Link farms**

*A link farm is a website or a group of sites whose primary reason for existence is to cross-link between themselves and other websites. Generally speaking, the links are created through aggressive reciprocal linking. Since these sites are typically very heavily interlinked, they can be pretty easy to detect. Part of the reason is that since they have little redeeming value, they typically do not high-value links coming in to them from other sites, and most of the links result from various. [19 p. 308]*

## **4. ANALYSIS OF METHODS AND TECHNOLOGIES USED IN SEARCH ENGINE OPTIMIZATION**

This chapter shows explicit use of theoretical knowledge of this thesis in practice. It was created in cooperation with one of the biggest Czech real estate agent's. The name of the company was changed for the purposes of this work to the Maxximus Reality in order to avoid data abuse by competition.

Company webpage was developed by external supplier in 2009. The part of contract was SEO as well. However, because of high price and almost no effect, company decided to cancel this contract, analyze current strategy and set up a new strategy.

### **4.1 Analysis of current situation**

It is important to say at the beginning, that concept of all SEO modifications is unknown. The only goal was to improve the visit rate, which is usually not sufficient – there can be thousands of visitors but if they are not interested in your site or in what you try to sell, they are useless. Therefore, it is important to try to catch only highly motivated users.

#### **4.1.1 Audit of existing site**

##### ***4.1.1.1 Technical audit***

The company webpage is using own CMS (Content Management System) used from the previous version of the web. This system is sufficient for company needs and there is no need to change it. The whole webpage is standard HTML page with Adobe Flash elements.

##### ***4.1.1.2 Validity of the webpage***

Validity of our webpage was checked by Markup Validation Service. There are **68 Errors and 74 warning(s) on the homepage**, as shown on Figure 25. These errors could affect indexing by crawlers and overall rating of the page, so they could be fixed.

Errors found while checking this document as XHTML 1.0 Transitional!	
<b>Result:</b>	68 Errors, 74 warning(s)
<b>Address :</b>	<input type="text"/>
<b>Encoding :</b>	utf-8 <input type="button" value="(detect automatically)"/>
<b>Doctype :</b>	XHTML 1.0 Transitional <input type="button" value="(detect automatically)"/>
<b>Root Element:</b>	html
<b>Root Namespace:</b>	<a href="http://www.w3.org/1999/xhtml">http://www.w3.org/1999/xhtml</a>

The W3C validators are hosted on server technology donated by HP, and supported by community donations. [Donate](#) and help us build better tools for a better web.

FIGURE 25 - THE W3C MARKUP VALIDATION SERVICE RESULT

#### 4.1.2 Visit rate

The company currently uses Google Analytics and toplist.cz analytics software for measuring the number of site visitors and their behavior. However, there are no goals in Google Analytics set up. Moreover, toplist.cz measures data not only from maxximusreality.cz, but also from other affiliated websites. There were also some attempts to improve the visit rate by massive amount of paid visitors from irrelevant sources which misrepresents the values. Therefore, Google Analytics with some applied filters (to exclude “fake” visitors) was used for evaluation of the situation.

Figure 26 shows up visitor rate in October 2010 – January 2011. It is obvious, that it massively decreased in November 2010. Interesting fact is that it was caused mainly by decrease of direct traffic, as shown on figure 27. It could be caused by some attempts to manipulate statistics as well, because there is no other known reason for this decrease.



FIGURE 26 - VISITOR RATE, OCTOBER 2010 - JANUARY 2011

## Direct Traffic

1 Oct 2010 - 31 Jan 2011

Comparing to: Site

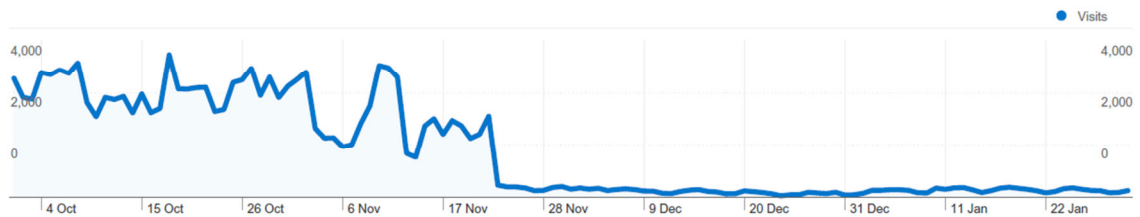


FIGURE 27 - VISIT RATE, DIRECT TRAFFIC, OCTOBER 2010 - JANUARY 2011

There are some other proofs which supports this theory - only 1,44 pages viewed by one visitor (average) in given period (October – November), compared to 3,65 pages in January - December and almost 82% bounce rate\* (vs. 48%).

Therefore, only data collected in December – January was used for more analysis, because older data was provable distorted and there was no way how to filter it in Google Analytics.

Figure 28 shows comparison between traffic from search engines (which should be mainly affected by SEO) from December to February this and last year. It is obvious, that overall traffic is definitely not higher. There are no other known reasons why traffic is lower. It can be declared that optimizations conducted in at least last 12 months were not successful – there is no positive influence on the visitor rate.

## Search Engines

1 Dec 2010 - 28 Feb 2011

Comparing to: 1 Dec 2009 - 28 Feb 2010



FIGURE 28 - SEARCH ENGINES TRAFFIC COMPARISON - DECEMBER - FEBRUARY 2010 VS 2011

\*Bounce rate represents the percentage of visitors who enter the webpage and leave it rather than continue viewing other pages within the same site.



#### 4.1.2.1 Sources of visitors

Traffic source overview is shown on figure 29. The most of visitors are from search engines which is a usual fact. The second most important source is referring sites, followed by direct traffic. High direct traffic represents the fact, that site is relatively well-known.

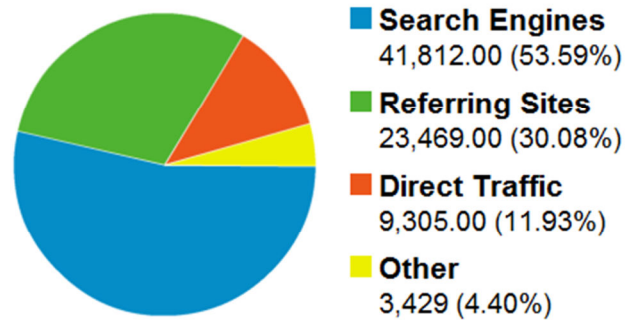


FIGURE 29 - TRAFFIC SOURCES OVERVIEW, DECEMBER – JANUARY 2011

And some other statistics:

<b>78,015 Visits</b>	<b>41.43% Bounce Rate</b>
<b>307,610 Pageviews</b>	<b>00:02:52 Avg. Time on Site</b>
<b>3,94 Pages/Visit</b>	<b>66.09% % New Visits</b>

Although these statistics are not generally ineffective, the potential of website is higher (compared to other similar websites) and there is space for improvements.

### 4.1.3 Keywords

#### 4.1.3.1 List of keywords

Original list of 44 keywords was done on the basis of agreement of both sides. Problem is that this list was apparently not made on the basis of important indicators, like number of searches, relevancy of the word and number of competitors using these keywords. Result is that only 19 of these words have more than 10 searches a day (according to Google database). This fact should be ok if there is a list of hundreds keywords, but there are only 44 keywords and more than half of them have very low number of searches. Moreover, some of them are not related to our website. Therefore, this list definitely needs a revision.

There is a list of first ten words with the highest number of visitors.

Keyword	Visits/month
reality	5948
maxximus reality	2832
reality_cz	1633
byty	966
nemovitosti	792
prodej_domu	699
reality brno	680
reality praha	485
maxximus	394
sreality.cz	352

#### 4.1.3.2 Current usage of keywords

Usage of these words on the website is a big problem. It seems that external SEO provider used some Black Hat SEO techniques. There are many pages with text unnaturally filled with keywords, with no internal links from maxximusreality.cz, so there is no other way to visit them except of search engines. The keywords are in title and h1 tags, URL and in very

short text using nonsense phrases under the search form. This can be classified as Doorway Pages. More about this is in subchapter “Black Hat SEO”. Example of one of our Doorway page is on Figure 24.

Then, they conducted massively backlink spamming, all the links are from the low quality or non-related websites, like <http://www.miluji.info/>. All these pages belong to the same company (SEO provider). There are, according to the majesticseo.com, 615 links from 139 domains, only for this URL, all with the same anchor text. Despite of this fact, maxximusreality.cz has no appearance on the first 60 positions on Google and Seznam SERP. It is obvious that these Black Hat SEO techniques no longer work.

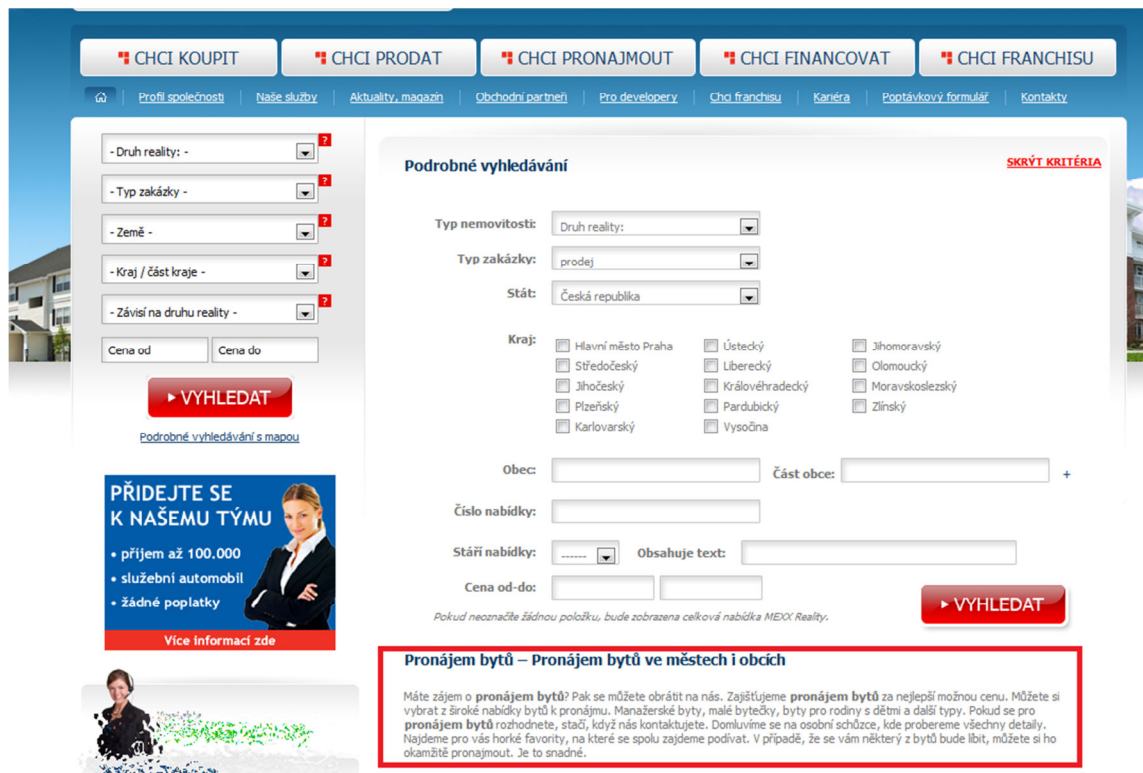


FIGURE 30 - DOORWAY PAGE, "SEO TEXT" IS HIGHLIGHTED

#### 4.1.4 Competitor analysis

Real estate market is specific in the way of selling the realties. Although MAXXIMUS REALITY runs marketing both on internet and print media, almost 90% of deals are realized via the internet. Therefore, web pages are very critically important for all the companies in this area and the competition is very strong. MAXXIMUS Reality is focused mainly on Prague and Central Bohemia region, so the compared competitors are both concentrated to this area and countrywide.

##### 4.1.4.1 PageRank and S-Rank

As mentioned in chapter 3.6.3.1, these ranks are computed mainly on the basis of backlinks and their quality. Although significance of these ranks is lower than few years before, they can be still used for some kind of comparison between competitors. Competitors domains on Figure 31 are ordered by S-Rank and then by PageRank. S-Rank was used for primary ordering (it was divided by 10 for better comparison), because unlike the PageRank, it is more frequently updated. MAXXIMUS Reality is on 8<sup>th</sup> place according to this data. All these ranks are public and they were gathered by SEO Professional Toolbar (<http://www.seo-profesional.cz/toolbar-en/>) for Google Chrome and only ranks of homepage were taken into consideration.

domain	S-Rank	PageRank
www.remax-czech.cz	9	6
www.mmreality.cz	9	5
www.dumrealit.cz	9	4
www.nextreality.cz	8	5
www.rkevropa.cz	8	5
www.century21.cz	8	5
www.maxima.cz	8	5
www.maxima.cz	8	5
www.maximusreality.cz	8	4
www.lexxus.cz	6	4
www.general-reality.cz	6	4
www.honzik.cz	4	5
www.kohout-reality.cz	4	3

FIGURE 31 - COMPETITORS SORTED BY PAGERANK

#### 4.1.4.2 Backlink analysis

Number of backlinks is one indication of the popularity or importance of given webpage. Figure 32 shows total number of external backlinks. MAXXIMUS Reality is on fourth place. These backlinks were gathered using Majestic SEO ([www.majesticseo.com](http://www.majesticseo.com)).

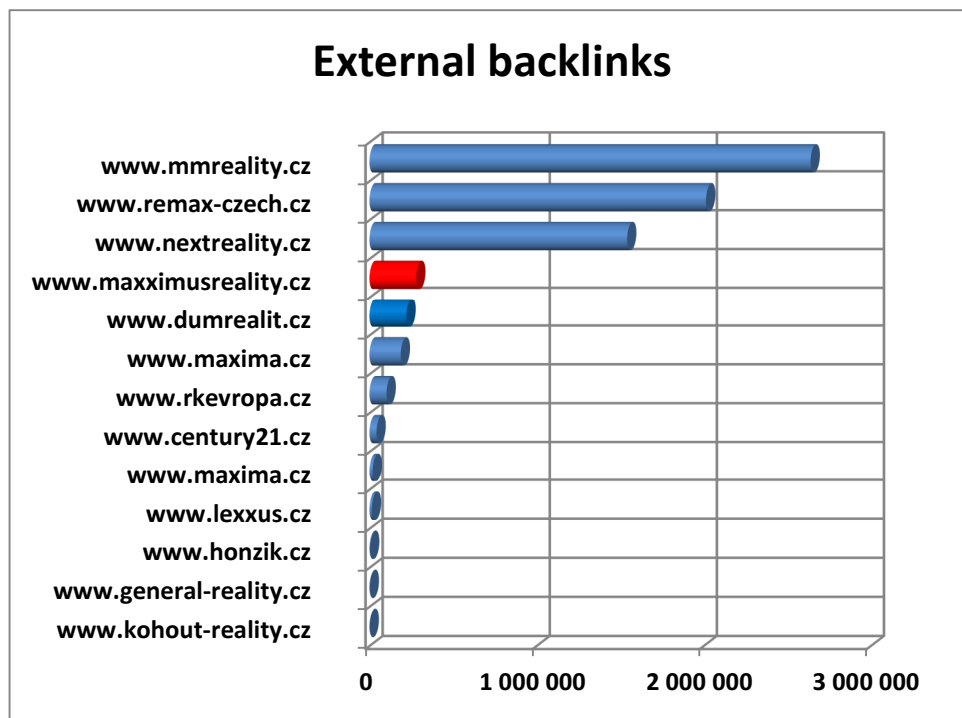


FIGURE 32 - TOTAL NUMBER OF EXTERNAL BACKLINKS

Another important factor is number of referring domains (Figure 33). It describes number of websites from where the pages have backlinks.

It is evident that MAXXIMUS Reality has highest number, but together with low PageRank and S-Rank and on the basis of manual control of part of them, is apparent that these domains are mostly low quality. Moreover, majority of these domains is run by the SEO provider and they are hosted by them as well. It is a problem because search engine algorithms can find out this fact because of the same range of IP addresses.

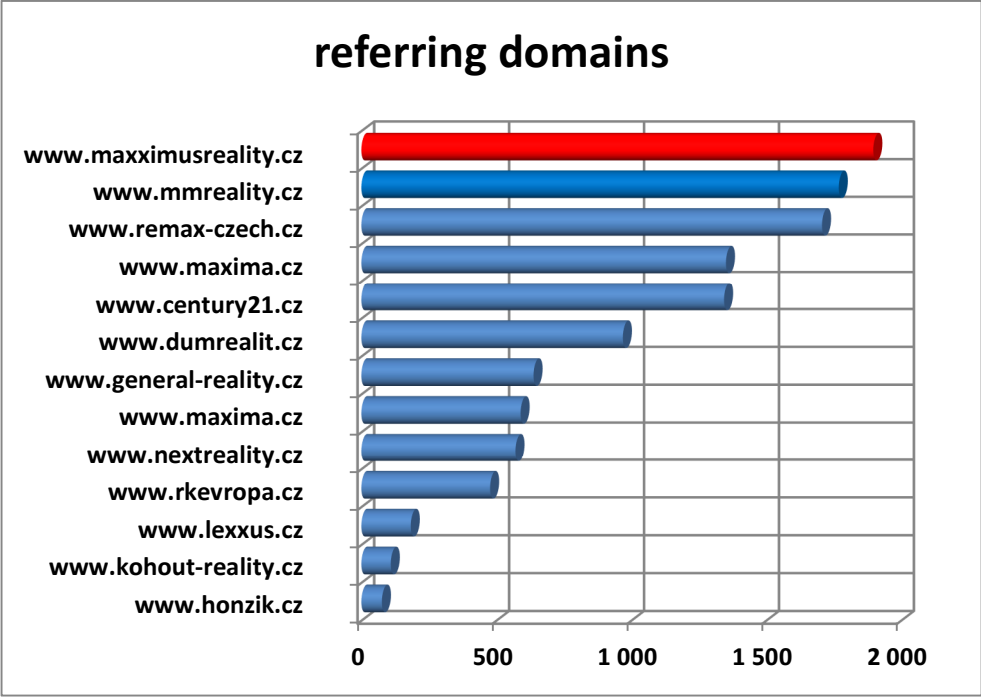


FIGURE 33 - NUMBER OF REFERRING DOMAINS

## **4.2 New SEO Strategy**

This chapter contains new overall SEO strategy for the company website. Unfortunately, none of these optimizations was applied yet because of some internal problems in the company.

As mentioned in chapter 3.6, search engine optimizations can be generally divided in two main groups, On-Page factors and Off-Page factors

### **4.2.1 On-Page Factors**

#### ***4.2.1.1 Keyword research***

Several tools were used for keyword research, but mostly Google Adwords. It is primarily designed for search keyword for the paid advertisement (PPC system Google Adwords), but it is very useful for obtaining information about keywords in organic search as well.

It provides related terms, search volume estimates, search trends and ad cost estimation for any keyword or URL that you enter.

Input data for Adwords keyword tool was gathered mainly on the basis of competitor's analysis, generally known words from these area, Google Trends tool and search engines research.

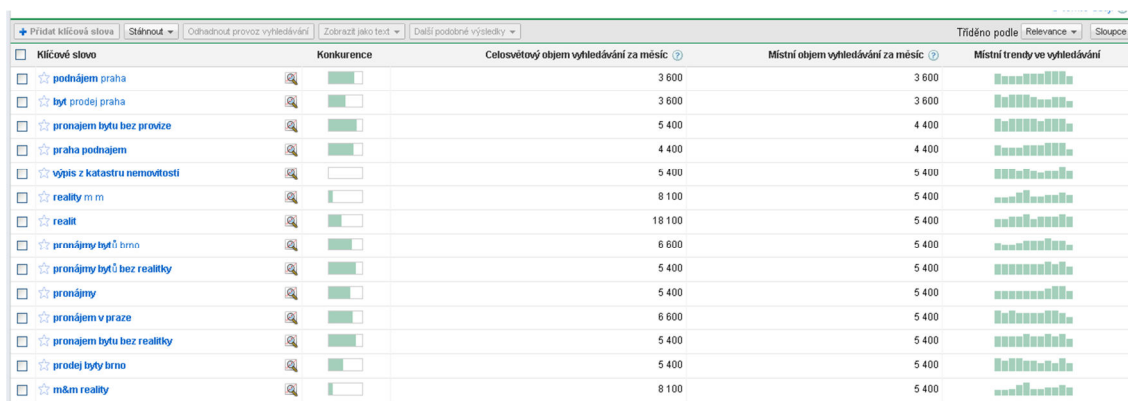


FIGURE 34 - GOOGLE ADWORDS KEYWORD TOOL RESULT PAGE

The result page (Figure 34) contains global search volume, local search volume, competitors and trends, but for purposes of Maxximus reality are important mainly local search volume and competitors.

On the basis of these results words were filtered by highest search volume. It is important to remember that the advertiser's ads may not be running all the time, so more impressions may be available. The full list of these words is attached in appendix.

The second step was to determine relevancy of these words. The score of particular words was made in range from 0 to 1. This variable is based only on subjective author opinion, and main criteria are:

- our company is focused mainly on Prague and Stredocesky kraj, so the words with relationship with these regions have higher relevancy
- connection to the company business
- potential conversion rate

Then, to sort the data, a simple coefficient to compute the importance for company website has been made:

$$\text{Score} = (\text{Competition/Local search volume}) * \text{Relevance}$$



Keyword	Competition	Local search volume(month)	Relevance	Score
nemovitosti	0,19	165000	1	868 421
reality	0,34	201000	1	591 176
byt	0,27	110000	1	407 407
byty	0,63	110000	1	174 603
s reality	0,1	33100	0,5	165 500
bydlení	0,28	40500	1	144 643
domy	0,59	74000	1	125 424
pronájmy bytů	0,68	74000	1	108 824
pronájmy praha	0,69	40500	1	58 696
pronajmu byt v praze	0,69	33100	1	47 971

FIGURE 35 - LIST OF KEYWORDS

Figure 35 shows the first 10 keywords from the list.

#### 4.2.1.2 *Creation of the new layout*

##### ***Homepage***

Current site layout has a lot of imperfections. The biggest one is the problem with usability and with the lack of content. For example, a user has to execute up to 8 clicks to show desired results. It can discourage a lot of users and this fact is confirmed by results from Google Analytics (high bounce rate on homepage) as well.

The first step is to make new layout of homepage – it was decided to use navigational structure instead of space for banners. The important function of the webpage is to contain original content. One part will be recommended offers (“Doporučujeme”), which will show realties chosen from administration. Second part will be new offers (“Poslední přidané”), this will be done automatically. These two elements will provide automated generated content for search engines and it will be useful for users as well. Then, there will be “News” part (“Aktuality”), with some news from the area of real estate gathered from newspapers and print media.

Figure 36 shows the current status; page is filled with almost useless banners with almost no content and no links to deeper parts of webpage. Figure 37 shows recommended design of new homepage layout.

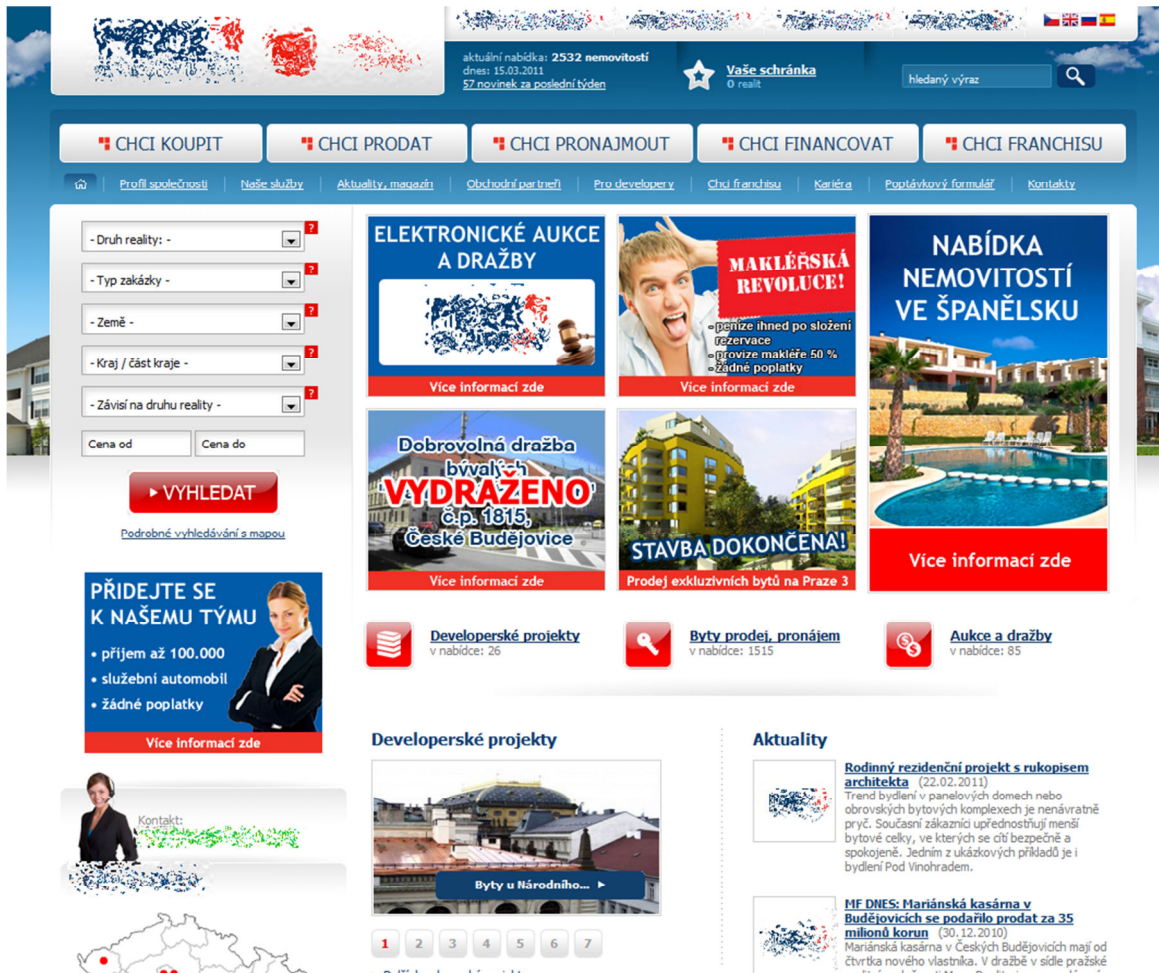


FIGURE 36 - CURRENT HOMEPAGE

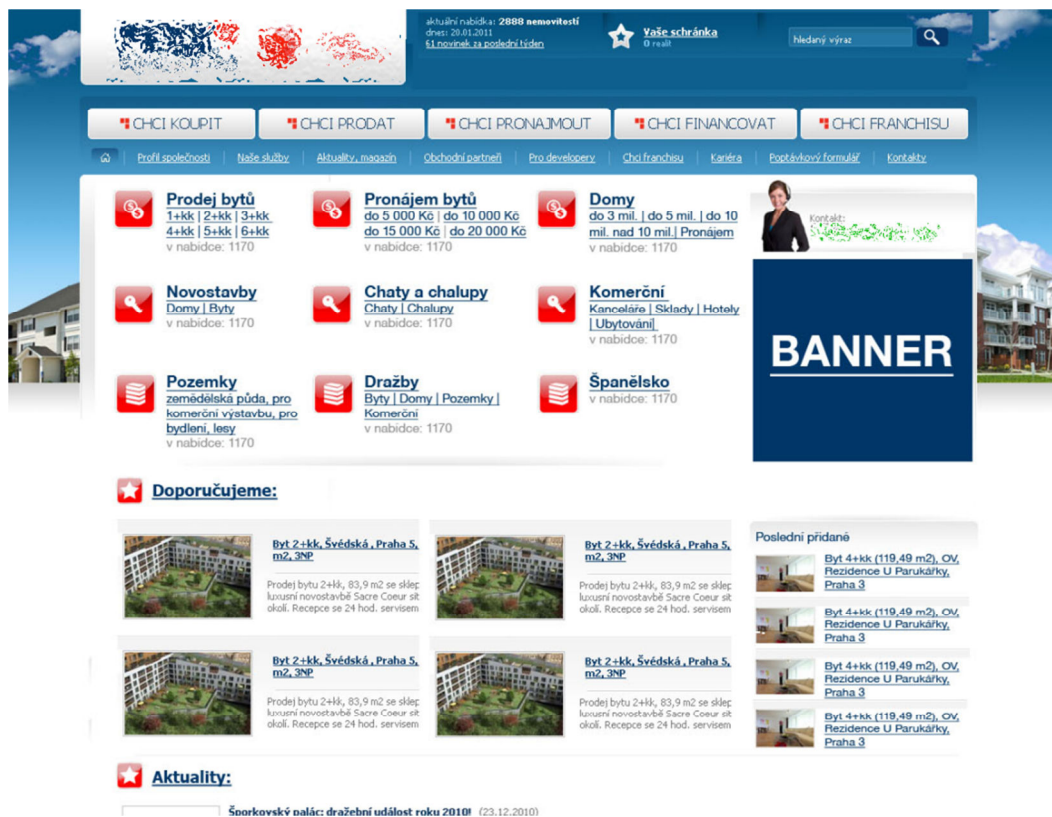


FIGURE 37 - NEW HOMEPAGE

### Detail page

Current layout is filled with useless information; there is no need of banners or search form on the left side. The whole left column will be removed. Therefore, there will be more space for detail of realty itself. Moreover, column „Podobné nabídky“ can be moved to upper right, more visible part. Form “Kontaktujte nás” – Contact us, will be moved to upper position (thus it will be more visible) as well. Current layout of detail page is on Figure 38 and the new one is on Figure 39.

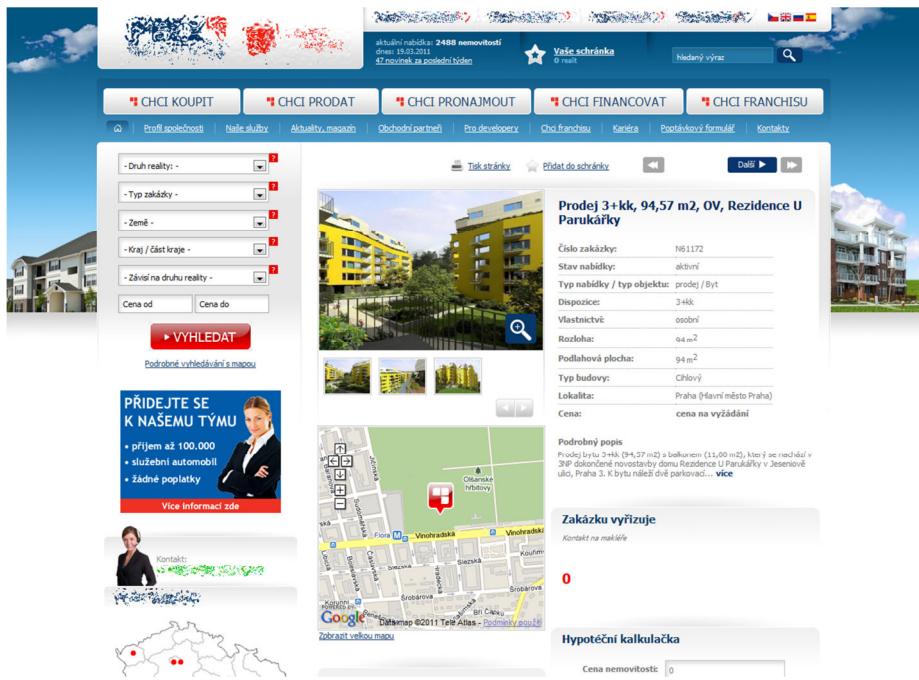


FIGURE 38 - CURRENT DETAIL PAGE



FIGURE 39 - NEW LAYOUT OF DETAIL PAGE

## Results page

Current result page is not clearly arranged, moreover, some elements are not working. New results page will contain modified form for searching. Particular parts of the form reveal depending on checked section. For example, part “Byty” reveals after checking the “Byty” in section “Typ nemovitosti”. This solution saves space and it is generally more functional.

There will be new section “Doporučujeme” which contains recommended offers for given sections.

The screenshot displays a real estate search interface. At the top, there's a navigation bar with buttons for 'CHCI KOUPIIT', 'CHCI PRODÁT', 'CHCI PRONAJMOUT', 'CHCI FINANCOVAT', and 'CHCI FRANCHISU'. Below this is a search sidebar with filters for 'Byt', 'Typ zakázky', 'Země', 'Kraj / část kraje', and 'Vybírejte podtyp nemovitosti'. The main content area is titled 'Podrobné vyhledávání' and shows search results for 'BYTY V HRADCI KRÁLOVÉ'. The results list includes a summary of the search (1374 results found), sorting options (cena, vzestupně), and a list of properties. Each property listing includes a thumbnail, a title (e.g., 'Byt 2+kk/TZ, Švédská, Praha 5, 64 m2, ZNP'), a price, and a 'Přidat do schránky' button. There is also a 'PŘIDEJTE SE K NAŠEMU TÝMU' advertisement on the left side of the results area.

FIGURE 40 - CURRENT RESULTS PAGE



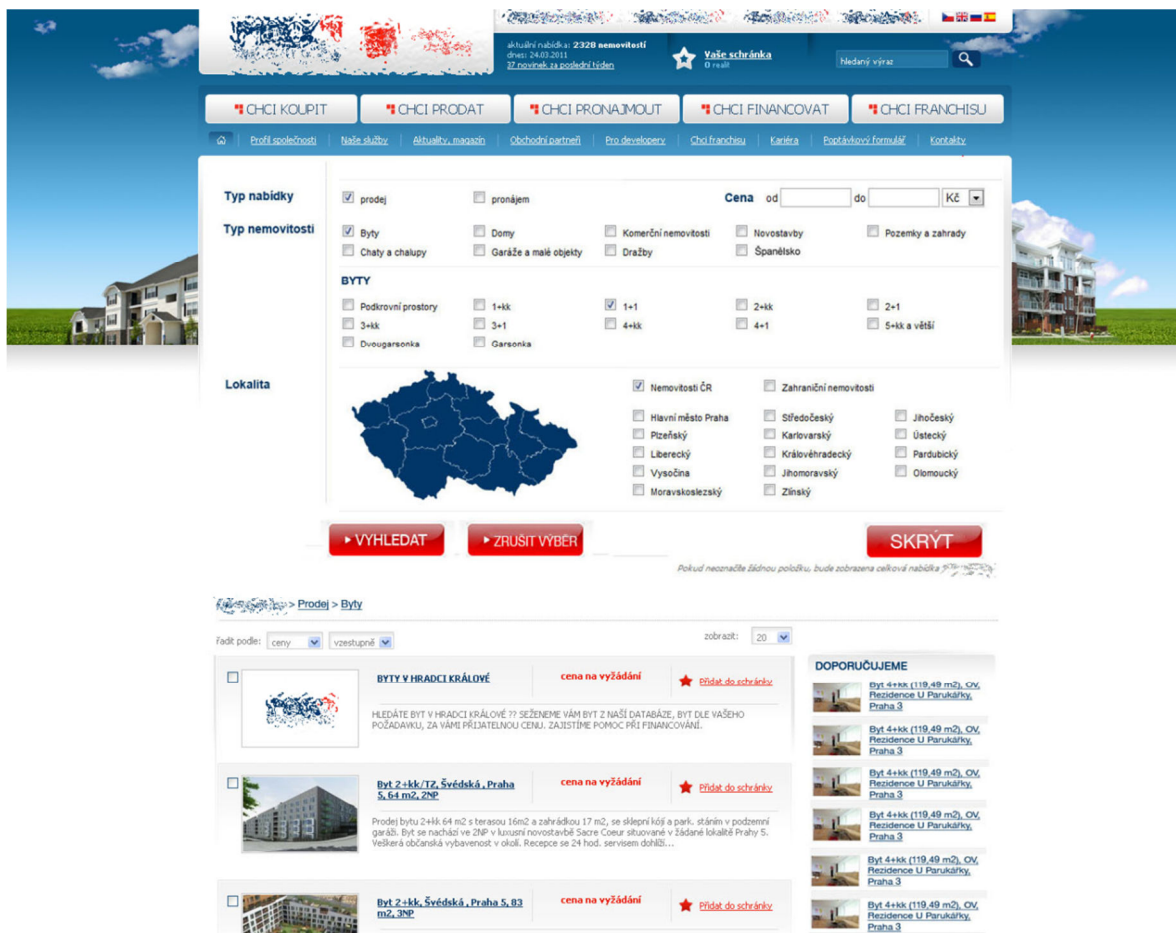


FIGURE 41 – NEW RESULTS PAGE

#### 4.2.1.3 New elements of a webpage

##### New navigation structure

New navigation structure on homepage (Figure 42) will ensure natural presence of related keywords and the overall link structure will be much better; there are links with proper anchor text to particular subparts of the web. Moreover, the overall usability is better, users will need usually about 2-3 clicks to show desired results.

After the click on the homepage, user will be directed to the results page, where he can more specify his request.



FIGURE 42 - NAVIGATION ON HOMEPAGE

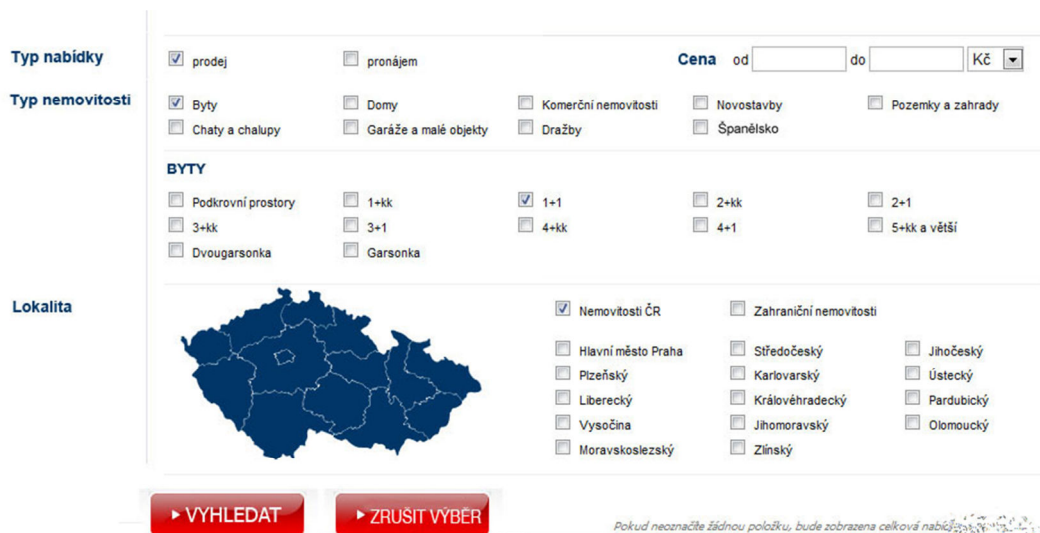


FIGURE 43 - NAVIGATION ON RESULTS PAGE

### Breadcrumbs navigation

Breadcrumbs are a great way how to improve internal linking website and overall usability of a webpage. It is also a good place for important keywords. It is basically one line of links directing to preceding sections of the webpage. Therefore, it has good SEO effect as well. Structure of these breadcrumbs is shown on figure 44.



FIGURE 44 - BREADCRUMBS DIAGRAM

Figure 45 shows recommended implementation of breadcrumbs.

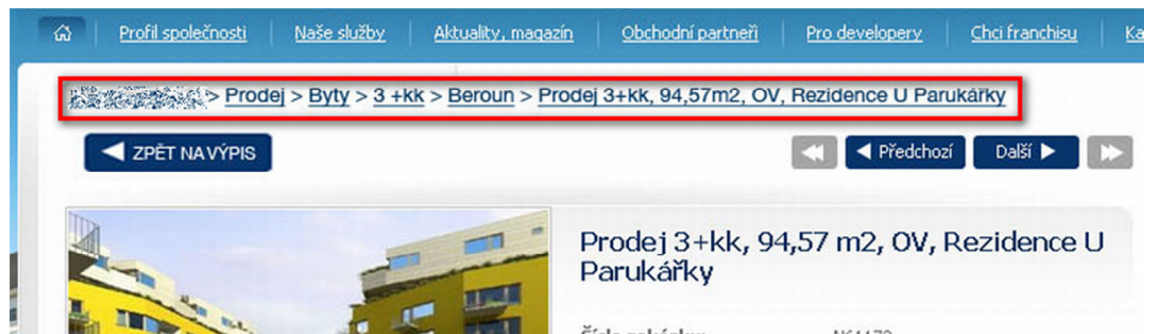


FIGURE 45 - IMPLEMENTATION OF BREADCRUMBS

### ***Title structure***

Title will be generated on the basis of breadcrumbs, using some other keywords mentioned in chapter Keyword research. Current status is that title is generated only for details of the realties, which is not effective. New structure contains subsections like “Byty na prodej” as well.

### ***URL structure***

URL (Uniform Resource Locator) will be generated using URL rewriting on the similar basis like title, specific for each section. For example, section “Prodej bytů” will have <http://www.maxximusreality.cz/prodej/byty/>. Although Google and other search engines claim that they don’t use words in URL for rankings, they are highlighted on SERP, which can potentially increase CTR.

### ***Internal Search Engine***

Current search engine is powered by Google, which is not ideal, because the results page is only text page. Therefore it is strongly recommended to use own engine.



## 4.2.2 Off page factors

As mentioned in chapter 3.6.3, off-page SEO factors include all components which are not present on the webpage, but they still have the ability to control the ranking of given website in the search engines. The main off-page SEO factor is number and quality of backlinks. Backlink building can be divided into:

- Short term activities
- Long term activities

### 4.2.2.1 Short term activities

#### *Control of registrations in important Czech catalogues*

Although catalogues had recently low SEO effect, registration is very fast and with almost no costs, therefore it can be still recommended, but only to the most important ones.

List of important Czech catalogues with recommendations:

- **Najisto.cz**: ok
- **Firmy.cz**: ok
- **Zona.cz**: no registration - recommended category: Střední Čechy » Praha » Služby a servis » Reality
- **Alfa.elchron.cz**: needs revision - wrong name of the company, wrong URL
- **NajduVše.cz**: ok
- **Začátek.cz**: needs revision - wrong category, correct category is: Firmy » Služby » Reality

#### *Revision of current backlinks*

Backlink list was made on the basis of results from Majestic SEO and they are sorted by backlink AC rank, which is a very simple measure of how important a particular page is by assigning an integer value from 0 (lowest) to 15 (highest) depending on number of unique referring external short domains.

It is recommended to control if the important backlinks (to AC rank 5) has the proper anchor text (more in chapter 3.6.3.4 - Anchor Text of External Links) and URL.

#### ***4.2.2.2 Long term activities***

- Purchasing and exchange of backlinks from other relevant websites
- Building network of microsites
- Promotion of website using PR texts on web portals, magazines and personal websites.

##### ***4.2.2.2.1 Purchasing and exchange of backlinks from relevant websites***

List of sites for possible link exchange or buy was made mainly on the basis of Collabim site finder results and on the basis of competitor's analysis. These results were then manually filtered.

Although backlinks buying is hard to detect, it is better to do this technique with caution, because search engines can penalize webpages for that.

##### ***4.2.2.2.2 Building network of microsites***

Creating of at own network of microsites is recommended. Microsites can be better optimized for given keywords, thus they can haul high quality visitors. Therefore, the main advantages of microsites are:

- Improving the value of company domain portfolio
- Increasing website traffic by ranking well in search engines
- Engaging the visitors and keep them coming back

The ROI (Return of Investment) can be very high as well, because of low costs. More detailed budget is in chapter projected budget.

For example, one webpage can be used for propagation of new developer projects, other can be kind of forum for people who are looking for advice. The third one can be some kind of catalogue of real estate companies.

It is important to have these pages with original and rich content. Basic link building is also recommended – at least to the most important catalogues.

#### **4.2.2.2.3 Website propagation using PR texts on web portals, magazines and personal websites.**

There should be some kind PR activity, like press releases, for example annual turnover, which can be taken over by some other media.

### 4.2.3 Projected budget 2011

#### PROJECTED BUDGET FOR MAXXIMUS REALITY S.R.O. SEO 2011

ACTIVITY	PRICE / UNIT	UNIT	QTY	PRICE (net of VAT)
<b>MICROSITES</b>				
DOMAIN*	CZK 200	ITEM	8	CZK 1 600
WEBHOSTING*	CZK 144	ITEM	8	CZK 1 152
JOOMLA INSTALLATION	CZK 200	HOUR	8	CZK 1 600
DESIGN	CZK 200	HOUR	8	CZK 1 600
COPYWRITING	CZK 300	HOUR	48	CZK 14 400
LINKBUILDING	CZK 200	HOUR	24	CZK 4 800
MAINTENANCE	CZK 200	HOUR	92	CZK 18 400
SUBTOTAL	<b>43 552 CZK</b>			
<b>REDESIGN OF THE WEBPAGE</b>				
LAYOUT DESIGN	CZK 200	HOUR	25	CZK 5 000
GRAPHICS DESIGN	CZK 600	HOUR	20	CZK 12 000
CODING	CZK 400	HOUR	140	CZK 56 000
COPYWRITING	CZK 300	HOUR	40	CZK 12 000
SUBTOTAL	<b>85 000</b>			
<b>WEBPAGE MAINTENANCE</b>				
DOMAIN*	CZK 200	ITEM	1	CZK 200
HOSTING*	CZK 7 200	ITEM	1	CZK 7 200
COPYWRITING	CZK 300	HOUR	96	CZK 28 800
WEB ANALYTICS	CZK 200	HOUR	50	CZK 10 000
CODING (UPDATES ETC.)	CZK 400	HOUR	46	CZK 18 400
LINKBUILDING	CZK 200	HOUR	46	CZK 9 200
SUBTOTAL	<b>73 800</b>			
<b>TOTAL</b>	<b>202 352 CZK</b>			

\*12 MONTHS

This budget is only rough estimation of awaited cost, but it is much lower than the current one – almost about 40% (detailed numbers of current budget are not public on the company request).

### 4.3 Future of SEO

It has been a big SEO boom in last 10 years that caused that there are hundreds of SEO companies in the world which feed thousands of people. Some of them offer high quality of services, but most of them are only trying to profit from the popularity of SEO itself. I've heard for a lot of times – „OK, I want the new website and of course I want that SEO thing as well” with no knowledge what the SEO is. This will end in the future.

The main reason is, that with still more sophisticated search engines algorithms, which are trying to bring the most relevant results as possible, using more social voting via toolbar/history/analytics and more sophisticated algorithms, we can say, that SEO like we know it today, has no future. Moreover, Matt Cutts, who is Google Lead Spam Engineer said:

*“Web spam is when somebody tries to cheat or take shortcuts so that their Web site shows up higher [in search results rankings] than it deserves to show up,” – Matt Cutts [33]*

So, it is important to say, that all SEO core techniques today are considered as spam by Google. Therefore I guess that SEO will be more about optimizations for users, generally how to make high quality website and there will be one elementary rule – when the users like your site, search engine like it as well.

There will be definitely no space for Black Hat SEO techniques, like doorway pages, link spamming etc.

## 5. CONCLUSION

The first part of this diploma consists of the description of main techniques and methods used in area of Search Engine Optimization, together with the most important things from the world of search engines and their marketing. It was done mainly on the basis of author's experiences and wide analysis of both print and online media. It revealed that there are lots of myths about SEO. A lot of used methods have currently no SEO effect, mainly because of incredibly fast development of search engines. Therefore they usually have zero return on investment. Despite this fact, there are still a lot of companies offering these methods – partly because of incredibly fast development of search engines, partly because of unknowingness of their customers.

These conclusions were confirmed in the case study as a result of revision of current SEO strategy (outsourced) of the existing company webpage. The strategy was based mainly on the obsolete and Black Hat SEO techniques, with inappropriate list of keywords. There was no positive improvement in site performance. Therefore, completely new SEO strategy on the basis of previous findings and authors experiences was developed, including projected budget, which shown that the overall cost of this strategy will be definitely lower than now, probably almost about 40%. The strategy will be conducted partly using in house resources, partly outsourcing. However, none of these changes were applied yet.

In future, the SEO as we know it today will probably not exist. It will be more about creating high quality websites and there will be most likely one rule – if users like the website, search engines like them as well.

## 6. BIBLIOGRAPHY

1. **Cros, Jay.** Ted Nelson's Unbook. *Internet Time Blog*. [Online] October 2010. [Cited: February 4th, 2011.] <http://www.internetttime.com/2010/10/ted-nelsons-unbook/>.
2. **Wolf, Gary.** The Curse of Xanadu. *Wired Magazine*. [Online] June 1995. [Cited: February 1st, 2011.]
3. **Li, Wei.** Graduate School of Library and Information Science | University of Illinois. *The first search engine, Archie*. [Online] 2005. [Cited: February 2n, 2011.] <http://www.isrl.illinois.edu/~chip/projects/timeline/1990archie.htm>.
4. Yahoo! *The History of Yahoo! - How It All Started*. [Online] 2005. [Cited: February 4th, 2011.] <http://docs.yahoo.com/info/misc/history.html>.
5. Internet Archive: Wayback Machine. [Online] <http://www.archive.org>.
6. Českému Googlu narostl podíl, Seznam ho stále poráží. *tyden.cz*. [Online] September 6th, 2010. [Cited: 20th February, 2011.] [http://www.tyden.cz/rubriky/media/internet/ceskemu-googlu-narostl-podil-seznam-ho-stale-porazi\\_180524.html](http://www.tyden.cz/rubriky/media/internet/ceskemu-googlu-narostl-podil-seznam-ho-stale-porazi_180524.html).
7. Google.com. *Google history*. [Online] [Cited: December 20th, 2010.] <http://www.google.com/corporate/history.html>.
8. Yahoo & Microsoft Union Approved – Finally Some Real Competition for Google? *SureFire*. [Online] February 22nd, 2010. [Cited: February 5th, 2011.] <http://www.surefiresearch.com/search-engines/yahoo-microsoft-union-approved-finally-some-real-competition-for-google/>.
9. 100 Facts About Google You Didn't Know. *BNXS*. [Online] October 25th, 2010. [Cited: Februarz 4th, 2011.] <http://bnxs.com/100-facts-about-google-you-didnt-know/>.
10. *Top 100 Most valuable global brands*. s.l. : BrandZ, 2010.
11. YAHOO! TO ACQUIRE OVERTURE. *YAHOO!* [Online] July 14th, 2003. [Cited: February 6th, 2011.] <http://docs.yahoo.com/docs/pr/release1102.html>.
12. searchenginewatch.com. *GoTo Makes Overture To New Name*. [Online] October 2nd, 2001. [Cited: February 6th, 2011.] <http://searchenginewatch.com/2164231>.
13. History of Search Engines: From 1945 to Google Today. *SEARCH ENGINE HISTORY*. [Online] [Cited: February 6th, 2011.] <http://www.searchenginehistory.com/>.
14. Google Buys Applied Semantics. *searchenginewatch.com*. [Online] April 24th, 2003. [Cited: February 6th, 2011.] <http://searchenginewatch.com/2196001>.

15. bingwebmaster.com. *History of Bing*. [Online] September 5th, 2009. [Cited: February 22th, 2011.] <http://bingwebmaster.com/bing-history.html>.
16. **Vylet'al, Martin**. Google nad Seznamem zatím nezvítězil. *lupa.cz*. [Online] January 12th, 2011. [Cited: February 20th, 2011.] <http://www.lupa.cz/clanky/google-nad-seznamem-zatim-nezvitezil/>.
17. **Sherman, Chris**. searchengineland.com. *The State of Search Engine Marketing 2006*. [Online] February 8th, 2007. [Cited: March 15th, 2011.] <http://searchengineland.com/the-state-of-search-engine-marketing-2006-10474>.
18. **Ryan, Singel**. Oct. 27, 1994: Web Gives Birth to Banner Ads. *wired.com*. [Online] October 27, 2010. [Cited: February 12th, 2011.] <http://www.wired.com/thisdayintech/2010/10/1027hotwired-banner-ads/>.
19. **Eric, Enge, et al., et al.** *The Art of SEO*. Sebastopol : O'Reilly Media, Inc., 2009. ISBN: 978-0-596-51886-8.
20. Official Google Blog. *Eye-tracking studies: more than meets the eye*. [Online] Google Inc., July 2nd, 2009. [Cited: February 14th, 2011.] <http://googleblog.blogspot.com/2009/02/eye-tracking-studies-more-than-meets.html>.
21. Eye-tracking: Where do readers look first? <http://styleguide.yahoo.com>. [Online] Yahoo! Inc. [Cited: February 14th, 2011.] <http://styleguide.yahoo.com/writing/write-web/eye-tracking-where-do-readers-look-first>.
22. Google Inc. *We knew we was big*. [Online] July 25th, 2007. [Cited: February 1st, 2011.] <http://googleblog.blogspot.com/2008/07/we-knew-web-was-big.html>.
23. **Rebecca, Lieb**. *The truth about search engine optimization*. s.l. : Que Publishing, 2009. ISBN 9780789738318.
24. **SEOMoz**. Additional SEO Data. *SEOMoz*. [Online] 2009. [Cited: February 6th, 2011.] <http://www.seomoz.org/article/search-ranking-factors#additional-data>.
25. **Jones, Kristopher B**. *Search Engine Optimization: Your visual blueprint™ for effective Internet marketing*. Indianapolis : Wiley Publishing, Inc., 2008. ISBN: 978-0-470-22448-9.
26. Google does not use the keywords meta tag in web ranking. *Official Google Webmaster Central Blog*. [Online] Google Inc., September 21, 2009. [Cited: February 17th, 2011.] <http://googlewebmastercentral.blogspot.com/2009/09/google-does-not-use-keywords-meta-tag.html>.



27. Perfecting Keyword Targeting & On-Page Optimization. *SEOMoz*. [Online] August 17th, 2009. [Cited: February 18th, 2011.] <http://www.seomoz.org/blog/perfecting-keyword-targeting-on-page-optimization>.
28. About rel="canonical". *Google webmaster central*. [Online] Google Inc., November 10th, 2010. [Cited: February 19th, 2011.] <http://www.google.com/support/webmasters/bin/answer.py?hl=en&answer=139394>.
29. **Fishkin, Rand**. How Do I Build the Perfectly Optimized Page? *SeoMoz.org*. [Online] August 17th, 2009. [Cited: March 16th, 2011.] <http://www.seomoz.org/blog/perfecting-keyword-targeting-on-page-optimization>.
30. **Dr. Garcia, E**. The Keyword Density of Non-Sense. *Mi Islita*. [Online] May 30th, 2005. [Cited: March 17, 2011.] <http://www.miislita.com/fractals/keyword-density-optimization.html>.
31. **Walter, Aarron**. *Building findable websites: web standards, SEO, and beyond*. Berkeley : Peachpit Press, 2008. ISBN 9780321526281.
32. Understanding Domain Trust and Authority. *SeoWiz.net*. [Online] July 3rd, 2009. [Cited: February 10th, 2011.] <http://www.seowizz.net/2009/07/understanding-domain-trust-and-authority.html>.
33. Web 2.0: Whatever Google Knows About Spam, It Isn't Saying. *InformationWeek*. [Online] April 25th, 2008. [Cited: 18 March, 2011.] <http://www.informationweek.com/news/internet/google/showArticle.jhtml?articleID=207402226>.

## 7. SUPPLEMENTS

### 7.1 List of keywords

Keyword	Competition	Local search volume(month)	Relevance	Score
nemovitosti	0,19	165000	1	868 421
reality	0,34	201000	1	591 176
byt	0,27	110000	1	407 407
byty	0,63	110000	1	174 603
s reality	0,1	33100	0,5	165 500
bydlení	0,28	40500	1	144 643
domy	0,59	74000	1	125 424
pronájmy bytů	0,68	74000	1	108 824
pronájmy praha	0,69	40500	1	58 696
pronajmu byt v praze	0,69	33100	1	47 971
nemovitosti prodej	0,43	18100	1	42 093
nemovitosti k prodeji	0,43	18100	1	42 093
realitní	0,4	33100	0,5	41 375
mm reality	0,11	8100	0,5	36 818
pronajmu byt	0,45	12100	1	26 889
prodám byt	0,26	6600	1	25 385
byty na pronajem praha	0,82	18100	1	22 073
pronájem byt praha	0,82	18100	1	22 073
pronájem bytů v praze	0,82	18100	1	22 073
byty k pronájmu v praze	0,82	18100	1	22 073
byty v praze pronájem	0,82	18100	1	22 073
podnájem	0,54	14800	0,8	21 926
pronájem bytů praha	0,83	18100	1	21 807
reality m m	0,13	5400	0,5	20 769
bez realitky	0,54	22200	0,5	20 556
bezrealitky	0,54	22200	0,5	20 556
pronájmy bytů v praze	0,85	14800	1	17 412
bydlení praha pronájem	0,85	14800	1	17 412
bydlení v praze pronájem	0,85	14800	1	17 412
prodej bytů v praze	0,71	12100	1	17 042
nájemní byty	0,26	4400	1	16 923
byty v praze na prodej	0,72	12100	1	16 806
byty k prodeji praha	0,72	12100	1	16 806
prodej byty praha	0,72	12100	1	16 806
pronájem 3 1 praha	0,82	12100	1	14 756
reality.cz	0,51	14800	0,5	14 510
nájem bytu praha	0,84	12100	1	14 405
byty v brně	0,64	18100	0,5	14 141
nové bydlení	0,76	9900	1	13 026
nabídka bytů praha	0,77	9900	1	12 857
prodej bytů praha	0,77	9900	1	12 857
bezrealitky.cz	0,24	5400	0,5	11 250
nové byty	0,76	8100	1	10 658
byty liberec pronajem	0,71	1300	5	9 155

domy na pronajem	0,61	4400	1	7 213
pronájmy v praze	0,75	5400	1	7 200
rpg byty	0,15	3600	0,3	7 200
domy na klíč	0,92	6600	1	7 174
pronajmu byt praha	0,79	5400	1	6 835
byt pronájem praha	0,79	5400	1	6 835
byt praha pronájem	0,79	5400	1	6 835
realit	0,4	5400	0,5	6 750
koupím byt	0,45	2900	1	6 444
prodám byt praha	0,57	3600	1	6 316
prodám byt v praze	0,57	3600	1	6 316
praha podnajem	0,77	4400	1	5 714
byty rpg	0,16	2900	0,3	5 438
rezidence	0,23	12100	0,1	5 261
nove domy	0,46	2400	1	5 217
byt v praze prodej	0,56	2900	1	5 179
pronájem bez realitky	0,79	8100	0,5	5 127
pronájmy bez realitky	0,8	8100	0,5	5 063
byt bez realitky	0,82	8100	0,5	4 939
byty bez realitky	0,82	8100	0,5	4 939
ceny nemovitosti	0,25	2400	0,5	4 800
pronájem bytu v brně	0,7	6600	0,5	4 714
spolubydlení praha	0,17	1600	0,5	4 706
mam reality	0,14	1300	0,5	4 643
podnájem praha	0,8	3600	1	4 500
podnájmy praha	0,8	3600	1	4 500
reality prodej	0,45	1900	1	4 222
prodej reality	0,45	1900	1	4 222
reality na prodej	0,45	1900	1	4 222
a reality	0,22	880	1	4 000
výkup nemovitostí	0,25	1000	1	4 000
bydlení bez realitky	0,84	6600	0,5	3 929
byt k pronajmu praha	0,62	2400	1	3 871
developerské projekty	0,68	2400	1	3 529
byty v praze 6	0,69	2400	1	3 478
nájem praha	0,38	1300	1	3 421
pronájem nemovitostí	0,38	1300	1	3 421
realitky praha	0,86	2900	1	3 372
byty pronajem bez realitky	0,83	5400	0,5	3 253
pronajem bytu bez realitky	0,83	5400	0,5	3 253
pronájmy bytů bez realitky	0,83	5400	0,5	3 253
podnajem bytu	0,6	1900	1	3 167
reality idnes	0,39	2400	0,5	3 077
idnes reality	0,39	2400	0,5	3 077
vyhledávač nemovitostí	0,13	390	1	3 000
byty koupě	0,66	1900	1	2 879
pronajem bez provize praha	0,87	2400	1	2 759
s reality cz	0,32	880	1	2 750
byty bez provize praha	0,9	2400	1	2 667
realitní makléř	0,36	1900	0,5	2 639

chatky k pronajmutí	0,91	2400	1	2 637
pronájem bytu bez provize	0,85	4400	0,5	2 588
hbc reality	0,14	720	0,5	2 571
nový byt praha	0,94	2400	1	2 553
nové byty v praze	0,94	2400	1	2 553
nové bydlení praha	0,95	2400	1	2 526
prodej nemovitosti v exekuci	0,3	720	1	2 400
byty v českých budějovicích	0,62	2900	0,5	2 339
byty.cz	0,69	1600	1	2 319
koupě bytu	0,66	1900	0,8	2 303
byty praha bez realitky	0,89	2400	0,8	2 157
rezidence praha	0,47	1000	1	2 128
reality 21	0,17	720	0,5	2 118
novostavby praha	0,9	1900	1	2 111
novostavba praha	0,9	1900	1	2 111
praha novostavby	0,9	1900	1	2 111
realitní kancelář praha	0,77	1600	1	2 078
realitní kanceláře praha	0,77	1600	1	2 078
rodinné domy na klíč	0,92	1900	1	2 065
nízkoenergetické domy	0,88	3600	0,5	2 045
financování nemovitostí	0,14	260	1	1 857
max reality	0,2	720	0,5	1 800
dům na klíč	0,89	1600	1	1 798
pronájem pardubice	0,53	1900	0,5	1 792
bez realitky praha	0,82	2900	0,5	1 768
levné domy	0,91	1600	1	1 758
bezrealitky praha	0,83	2900	0,5	1 747
byty podnájem	0,58	1000	1	1 724
levné byty	0,9	1900	0,8	1 689
bez provize	0,72	2400	0,5	1 667
byty praha 4 prodej	0,6	1000	1	1 667
projekty domy	0,79	1300	1	1 646
garsonka praha	0,64	1000	1	1 563
reality byty	0,6	880	1	1 467
pronájem české budějovice	0,66	1900	0,5	1 439
pronájem praha bez realitky	0,86	2400	0,5	1 395
bydlení za prahou	0,64	880	1	1 375
levné bydlení praha	0,96	1300	1	1 354
levné bydlení v praze	0,96	1300	1	1 354
projekty domu	0,71	1900	0,5	1 338
pronájem bytu v ostravě	0,72	1900	0,5	1 319
byty praha 6 prodej	0,67	880	1	1 313
byty na prodej praha 6	0,67	880	1	1 313
levné pronájmy	0,8	1300	0,8	1 300
byty pronájem plzeň	0,76	1900	0,5	1 250
pronájem bytu v plzni	0,76	1900	0,5	1 250
pronájem bytu plzeň	0,76	1900	0,5	1 250
byty plzeň pronájem	0,76	1900	0,5	1 250
www.bezrealitky.cz	0,29	720	0,5	1 241
byt 3 1 praha	0,48	590	1	1 229

hledám pronájem v praze	0,59	720	1	1 220
nemovitosti inzerce	0,82	1000	1	1 220
inzerce nemovitostí	0,82	1000	1	1 220
koupě nemovitostí	0,49	590	1	1 204
apartmány praha	0,74	880	1	1 189
pronájem bez rk	0,68	1600	0,5	1 176
reality online	0,23	260	1	1 130
pronájem v praze bez realitky	0,86	1900	0,5	1 105
reality inzerce	0,8	880	1	1 100
inzerce reality	0,8	880	1	1 100
pronájem praha bez provize	0,87	1900	0,5	1 092
byty pronajem praha bez realitky	0,88	1900	0,5	1 080
pronájem bytu praha bez realitky	0,88	1900	0,5	1 080
realitní kanceláře v praze	0,82	880	1	1 073
luxusní byty	0,82	880	1	1 073
byty bez realitky praha	0,89	1900	0,5	1 067
byty v praze bez realitky	0,89	1900	0,5	1 067
nemovitosti.cz	0,61	1300	0,5	1 066
levné byty praha	0,95	1000	1	1 053
levné byty v praze	0,95	1000	1	1 053
developerské projekty praha	0,84	880	1	1 048
developerské projekty v praze	0,84	880	1	1 048
nemovitosti v zahranici	0,46	480	1	1 043
domy projekty	0,78	1600	0,5	1 026
pronájem nebytových prostor praha	0,72	720	1	1 000
půdní byty	0,6	590	1	983
garsonka praha pronájem	0,74	720	1	973
pronájem garsonka praha	0,74	720	1	973
výměna bytu	0,38	3600	0,1	947
pronájem bytu v liberci	0,71	1300	0,5	915
pronájem bytu liberec	0,71	1300	0,5	915
byty k pronájmu liberec	0,71	1300	0,5	915
byty plzen prodej	0,55	1000	0,5	909
seznam reality	0,43	390	1	907
pronájem bytu bez provize praha	0,89	1600	0,5	899
pronájem bytu praha bez provize	0,89	1600	0,5	899
pronajem bytu bez realitky praha	0,89	1600	0,5	899
rodinné domy praha	0,81	720	1	889
mobilní domy	0,42	3600	0,1	857
pronájmy bez provize	0,76	1300	0,5	855
pronájem bez provize	0,76	1300	0,5	855
bez provize pronájem	0,76	1300	0,5	855
pronájem pokoje praha	0,53	880	0,5	830
pronájem bytu bez realitní kanceláře	0,79	1300	0,5	823
byt s terasou praha	0,61	480	1	787
podnájem v praze	0,76	590	1	776
pronájem garsonky praha	0,76	590	1	776
hledám pronájem bytu	0,58	880	0,5	759
pronajem domu praha	0,78	590	1	756

bydleni.cz	0,48	720	0,5	750
obecní byty praha	0,52	390	1	750
prodej bytů plzeň	0,6	880	0,5	733
inzerce realit	0,81	590	1	728
nabídka nemovitostí	0,55	390	1	709
levné byty k pronájmu	0,85	590	1	694
pronájem bytu zlín	0,65	880	0,5	677
realitky v praze	0,88	590	1	670
bez realit	0,75	1000	0,5	667
nejlevnější pronájmy v praze	0,89	590	1	663
pronájem bytu české budějovice	0,76	1000	0,5	658
prodám nemovitost	0,26	170	1	654
nákup nemovitosti	0,4	260	1	650
pronájem bytu v českých budějovicích	0,77	1000	0,5	649
sreality praha	0,37	480	0,5	649
byty pardubice pronájem	0,68	880	0,5	647
pronájem bytu pardubice	0,68	880	0,5	647
bez reality	0,58	720	0,5	621
byty bez provize	0,81	1000	0,5	617
bazos reality	0,26	320	0,5	615
inzeraty byty	0,79	480	1	608
prodej bez realitky	0,75	880	0,5	587
prodej bytu 2 kk praha	0,57	320	1	561
reality.idnes.cz	0,43	480	0,5	558
annonce reality	0,43	480	0,5	558
podkrovní byty praha	0,7	390	1	557
půdní byt praha	0,7	390	1	557
byty barrandov	0,58	320	1	552
luxusní byty praha	0,88	480	1	545
reality nemovitosti	0,5	260	1	520
levný pronájem bytu v praze	0,93	480	1	516
levne byty praha pronajem	0,93	480	1	516
výměna bytu praha	0,58	590	0,5	509
pronájem bytů v hradci králové	0,71	720	0,5	507
inzerce zdarma reality	0,79	390	1	494
reality inzerce zdarma	0,79	390	1	494
pronájem bytu mladá boleslav	0,6	590	0,5	492
bez reality cz	0,49	480	0,5	490
pronájem bytu jihlava	0,61	590	0,5	484
era reality	0,27	260	0,5	481
byty v plzni	0,75	720	0,5	480
nájemní byty praha	0,68	320	1	471
půdní byty praha	0,68	320	1	471
pronájem bytu ústí nad labem	0,64	590	0,5	461
cena bytu v praze	0,66	590	0,5	447
řadové domy praha	0,72	320	1	444
luxusní byty v praze	0,88	390	1	443
ceny bytů v praze	0,68	590	0,5	434
ceny bytů praha	0,68	590	0,5	434

chirš reality	0,3	260	0,5	433
pronájem liberec	0,57	2400	0,1	421
podnájem plzeň	0,58	480	0,5	414
pronájem bytu beroun	0,63	260	1	413
bezreality.cz	0,21	170	0,5	405
realitní kancelář plzeň	0,5	390	0,5	390
byt se zahradou praha	0,54	210	1	389
pronájem bytu karlovy vary	0,64	480	0,5	375
reality šumava	0,52	390	0,5	375
reality evropa	0,29	210	0,5	362
pronájem bytu teplice	0,68	480	0,5	353
podnajem bez realitky	0,69	480	0,5	348
apartmány v praze	0,75	260	1	347
nabídka realit	0,61	210	1	344
levné pronájmy bytů praha	0,93	320	1	344
czech reality service	0,17	58	1	341
pronájem novostavby praha	0,8	260	1	325
dražba bytů praha	0,81	260	1	321
byt s předzahrádkou praha	0,44	140	1	318
zahraniční reality	0,54	170	1	315
reality zahraničí	0,54	170	1	315
mexx praha	0,29	91	1	314
bez realitky.cz	0,51	320	0,5	314
prodej bytu bez realitky	0,78	480	0,5	308
byty pankrác	0,7	210	1	300
hledám bydlení v praze	0,7	210	1	300
prodej rekreačních nemovitostí	0,37	110	1	297
novostavby v praze	0,9	260	1	289
realitní kancelář jihlava	0,37	210	0,5	284
realitní kanceláře jihlava	0,37	210	0,5	284
pronájem bytu kladno	0,7	390	0,5	279
rk reality	0,47	260	0,5	277
ireality	0,38	210	0,5	276
nabídka bytů v praze	0,78	210	1	269
nemovitosti v chorvatsku	0,6	320	0,5	267
mezonetový byt praha	0,54	140	1	259
pronájem bytu tábor	0,63	320	0,5	254
mezonetové byty praha	0,67	170	1	254
inzerce nemovitosti zdarma	0,84	210	1	250
výměny bytů praha	0,6	590	0,25	246
levný podnájem praha	0,88	210	1	239
volné byty v praze	0,88	210	1	239
pronájem bytu most	0,55	260	0,5	236
soukromá inzerce nemovitostí	0,89	210	1	236
ceny realit	0,3	140	0,5	233
pronájem bytu turnov	0,46	210	0,5	228
realitní kancelář české budějovice	0,57	260	0,5	228
profi reality	0,31	140	0,5	226
ereality	0,47	210	0,5	223
koupím nemovitost	0,41	91	1	222

krátkodobý pronájem praha	0,73	320	0,5	219
realitní kancelář havlíčkův brod	0,21	91	0,5	217
řadový dům praha	0,51	110	1	216
byty pro studenty praha	0,75	320	0,5	213
prolux reality	0,5	210	0,5	210
nemovitosti bez realitky	0,77	320	0,5	208
garsonka praha prodej	0,53	110	1	208
realitní kanceláře liberec	0,51	210	0,5	206
pronájem bytu orlova	0,42	170	0,5	202
realitní kanceláře ústí nad labem	0,42	170	0,5	202
realitní kancelář ústí nad labem	0,42	170	0,5	202
levný podnájem v praze	0,87	170	1	195
realitní kancelář třebeč	0,36	140	0,5	194
realitní kanceláře třebeč	0,36	140	0,5	194
volné byty praha	0,88	170	1	193
realitní kancelář karlovy vary	0,45	170	0,5	189
realitní kanceláře karlovy vary	0,45	170	0,5	189
pronájem bytu klatovy	0,56	210	0,5	188
realitní kanceláře pardubice	0,46	170	0,5	185
reality byty praha	0,78	140	1	179
realitní kancelář cheb	0,39	140	0,5	179
realitní kanceláře cheb	0,39	140	0,5	179
pronájem bytu jablonec nad nisou	0,6	210	0,5	175
realitní kancelář děčín	0,4	140	0,5	175
studentské byty praha	0,75	260	0,5	173
realitní kanceláře děčín	0,41	140	0,5	171
www.byty.cz	0,78	260	0,5	167
pronájem bytu česká lípa	0,64	210	0,5	164
realitní kanceláře mladá boleslav	0,43	140	0,5	163
grand reality	0,54	170	0,5	157
podnájem bytu praha	0,9	140	1	156
pronájem bytu třebeč	0,55	170	0,5	155
prodej nových bytů praha	0,92	140	1	152
pronájem bytu poděbrady	0,47	140	0,5	149
nové byty praha 4	0,94	140	1	149
prodej a pronájem nemovitostí	0,5	73	1	146
realitní kancelář česká lípa	0,39	110	0,5	141
katalog nemovitostí	0,42	58	1	138
pronájem bytu příbram	0,62	170	0,5	137
realitní kanceláře česká lípa	0,41	110	0,5	134
reality středočeský kraj	0,68	91	1	134
prodej domu bez realitky	0,67	170	0,5	127
realitní kancelář jindřichův hradec	0,36	91	0,5	126
ubytování apartmány v praze	0,74	91	1	123
prodej nemovitostí bez realitní kanceláře	0,92	210	0,5	114
realitní kancelář most	0,4	91	0,5	114
pronájem bytu plzeň bez realitky	0,81	170	0,5	105
prodej bytu spořilov	0,44	91	0,5	103
levné nemovitosti	0,71	73	1	103



realitní kanceláře písek	0,36	73	0,5	101
realitní kancelář kladno	0,55	110	0,5	100
realitní kanceláře kladno	0,55	110	0,5	100
nové byty praha 5	0,92	91	1	99
realitní kancelář tábor	0,49	91	0,5	93
realitní kanceláře tábor	0,49	91	0,5	93
realitní kancelář příbram	0,4	73	0,5	91
realitní kancelář kutná hora	0,32	58	0,5	91
mexx reality praha	0,42	36	1	86
nejlepší realitní kancelář	0,43	36	1	84
realitní kancelář kolín	0,46	73	0,5	79
nové byty praha 6	0,92	73	1	79
max reality cz	0,23	36	0,5	78
reality bez realitky	0,72	110	0,5	76
dům realit praha	0,61	91	0,5	75
levné reality	0,79	58	1	73
realitní kanceláře praha 4	0,64	46	1	72
www.bydleni.cz	0,65	91	0,5	70
realitní kancelář pelhřimov	0,33	46	0,5	70
luxusní rodinné domy	0,84	58	1	69
ceny bytů v praze 2010	0,66	91	0,5	69
realitní kancelář teplice	0,53	73	0,5	69
realitní kanceláře teplice	0,53	73	0,5	69
pronájem bytu praha bez rk	0,85	110	0,5	65
reality bez provize	0,71	91	0,5	64
realitní kancelář strakonice	0,36	46	0,5	64
podnájem praha bez realitky	0,87	110	0,5	63
hledání realit	0,57	36	1	63
pronájem bytu liberec bez realitky	0,76	91	0,5	60
prodej nemovitosti bez realitky	0,81	91	0,5	56
rodinné domy pardubice	0,65	73	0,5	56
nové byty žižkov	0,87	46	1	53
nové byty praha 8	0,88	46	1	52
nové byty modřany	0,86	36	1	42
realitní kancelář praha 6	0,68	28	1	41
nové bytové projekty praha	0,9	36	1	40
nové byty prosek	0,87	28	1	32
nové byty pankrác	0,92	28	1	30
nové byty zličín	0,95	28	1	29
www.pronajembytu.cz	0,87	46	0,5	26
katalog bytů v praze	0,95	16	1	17
prodej nemovitosti cz	0,52	91	0,05	9
praha-byty.cz	0,95	16	0,5	8