

An Internet Business Visibility Conceptual Model

Payam Nami, Othman Mohd Yusop, Azri Azmi, Haslina Sarkan, Suriayati Chuprat, Kamilia Kamardin

Advanced Informatics School
Universiti Teknologi Malaysia
54100 Jalan Semarak, Kuala Lumpur
Malaysia

paynam@gmail.com, othmanyusop@utm.my, azriazmi@utm.my,
haslinams@utm.my, suriayati.kl@utm.my, kamilia@utm.my

Abstract: - Nowadays internet is a popular media used by business entities to increase their core business's visibility to the world. Current trend shows that the broadness of internet's capabilities as a marketing media, has gearing the environment towards competitive business milieu. Despite ones excellent business concept, without good business visibility it will not guarantee its survivability over the internet. The key points of boosting up business visibility are constantly relying on these two attainable factors namely; monitor and evaluate its internet ranking and position. A conceptual model was introduced to facilitate the tasks of continuously monitoring and evaluating web traffic services, search engines, online and offline adverts and social media. Henceforth business owner is able to procure result analysis of his own business visibility from respective search engines which can be obtained from the model dashboard view. Also, the business owners can strategised their next move of getting the business more visible.

Key-Words: - Internet Marketing, Business Visibility, Internet Visibility, Search Engine Optimiser.

1 Introduction

Since word World Wide Web (WWW) was coined out and defined as an information system that interlinks hypertext documents back in 1990's, internet has impacted human daily life such as business, knowledge, cultures, communications, and etc [6][7][8][10]. Blooming up humongously to 156 million websites with 1.6 billion web pages on the Internet [11][14], it unconsciously plausibly in submerging ones business visibility and dampening its survivability. Therefore business visibility over the net is a crucial point ones must consider to prolong its existence on internet [1].

The critical part of boosting up business visibility in terms of ranking and position are constantly and continuously summarizing, evaluating and monitoring considerable amount of data repetitively. For examples, websites ranking globally or locally via keywords that are fed by search engines, user social media (Twitter and Facebook) that backlink to user account, integrating user Google AdWords as Search Engine Marketing (SEM) to collect online performance information, and integrating with Google Analytics for web traffic analyser service information to name a few. In addition its time consuming too for business owner and marketing experts to partake in such tedious analysis [7].

As the challenges for this research been laid out previously, overcoming such dreary tasks can be simplified through facilitating the repetitiveness, via a search engine optimiser tool that we developed from a new internet business visibility conceptual model. Although, there are numerous search engine optimiser tools [2][3][4][5][7][9][10] that help business owners boost up their business visibility, to our knowledge some of the tools lack of customisable look and feel, no multiple service provider, no tracking rankings and multiple websites for users, no localised rankings and, etc. From the conceptual model, we prototyping business visibility tool that support mostly search engine optimiser features minus report analysis on website defect and keyword suggestion for future development.

This paper is laid out as follows: Section 2 presents literature studies. Section 3 explains our conceptual approach. Section 4, early findings and we conclude our research in section 5.

2 Literature Review

In this section, we first look at the meaning of internet business visibility, then we tabulate essential features that should be available in an internet visibility model before we perform a sample of comparative studies on a few existing tools.

2.1 Concept of Internet Visibility

The concept of internet business visibility makes used of search engine optimisation process and is defined as websites visits, number of followers on social networks, reference from third party websites or other business webpages, a fully or partially appearance of the business website on different search engines [7]. For example, the ranking of the website through searching related keywords on Google or Bing or Yahoo search engines, number of likes or favorites from social media i.e. Facebook or Twitter, number of website visits from Google

Analytics, are the contributing factors that constituted and defined what is internet visibility.

2.2 Internet Visibility Tools Common Elements and Features

There are many existing tools available to support the process such as MySEO Tool [7], SEO Power Suite [4], Raven Tools [2], SpyderMate [12], StatMoz [13], Lipperhey[5], KeywordSpy[3], and many more. Based on our analysis from the available tools, we postulate a set of commonality elements with descriptions that an internet visibility tool should had have as in the following table 1:

Table 1: Common Elements of an Internet Visibility Tool

| Internet Element | Providers | Metric | Description |
|--------------------------|---|----------------------|---|
| Search Engines | <ul style="list-style-type: none"> Google Bing Google Places | Global Ranking | For some businesses the priority is global ranking of their website on result of international search queries. |
| | | Local Ranking | For other businesses the priority is local ranking of their website on result of local search queries. (e.g. Google.com.my) |
| Social Media | <ul style="list-style-type: none"> Facebook Twitter | Audiences | The number of followers of a business on social media account (e.g. likes on Facebook) |
| Online Advertisements | <ul style="list-style-type: none"> Search Engine Marketing: AdWords by Google | Clicks | Number of clicks of audiences |
| | | Impressions | Number of appearance of the ad on search results |
| | | Average | The rate of click per impression |
| | | Cost | Business costs on the SEM |
| | | Conversion per click | Rate of second action of the user after clicking (e.g. navigating to other pages, signing up) When a visitor becomes a customer. |
| Website Traffic Analyser | <ul style="list-style-type: none"> Google Analytics | Visits | Number of website visits |
| | | Conversion Rate | Rate of second action of the user after visiting on all users (e.g. navigating to other pages, signing up) When a visitor becomes a customer. |
| | | Abandonment Rate | Rate of users who only visits a page and leave the website on all users. |

From table 1 above, we detailed out some elements into features that an internet visibility tool should have. All the list of features are presented in the next table with prior explanations in brief on some of our comparative studies included ours conceptual approach.

2.2.1 MySEO Tool

Briefly, MySEO Tool is a commercial web based application that offers advanced features for SEO experts to improve the visibility of a business. It tracks ranking which are fed by Google and Bing search engines in daily basis. It can integrate social media with user's accounts to provide business

owner with performance statistic. Despite the tool being developed to cater website designers' perspective rather than website owners' and with the aforementioned features, the software can be deployed by only single service provider and no customisable on feel and look feature by the service provider either.

2.2.2 SEO Power Suite

SEO Power Suite, in the other hand, is a set of desktop software tools. It consists of Spyglass that support backlink analysis, LinkAssistant manages link data and find link opportunity, Website Auditor for complete on-site audit, and Rank Tracker for ranking accuracy and powerful keyword research. Since these tools are not integrated software tools, some of necessary information are left with no support such as tracking multiple websites, no

localised ranking and tracking social media included.

2.2.3 Raven

Raven is a commercial web based software tools. It is a collection of commercial search engine marketing tools. It requires recurring subscription and no rank tracking and with no report templates.

2.2.4 Internet Visibility Tool Features

As been mentioned in section 2.2, table 2 shows the commonality features that an internet visibility tool should have:

Table 2: Common Features of an Internet Visibility Tool

| Features | My SEO Tool | SEO PowerSuite | Raven | Proposed Tool |
|---------------------------------------|---|---|-----------------------------|---|
| Graphical User Interface | Web, the developers preferred the full posts pages instead of using Ajax which decrease the users' experience | Desktop Application Each component is provided in different executable file, which decrease the performance and usability. It needs to be installed on PC and is not platform independent | No Ajax support | Web, Ajax is used for better user experience. The services are better categorized in one place. |
| Software Type | Single Service Provider | Single Service Provider | Single Service Provider | Multiple Service Provider |
| Customizable by Service Provider | N/A | N/A | Report only | A service provider can customize the look and feel of the software, and request for adding a new service to be monitored. |
| Tracking Multiple Websites for a user | Yes | No | Yes - unlimited | Yes |
| Tracking Rankings | Yes | Yes | Yes – Google WebMaster tool | Yes |
| Supported Search Engines | Google, Bing | Google, Bing, Yahoo | Google, Bing | Google, Bing, Google Places |
| Providing Localized Rankings | Yes | No | No | Yes |
| Tracking Social Media | Yes | No | Yes | Yes |
| Social Media Services | Facebook, Twitter, YouTube | N/A | Facebook, Twitter, LinkedIn | Facebook, Twitter (Capable to add more Services) |
| Web Traffic Analyzer | Google Analytics | No | Google Analytics | Google Analytics (Capable to add more Services) |
| Analyzing Advertisement Services | Adwords | No | Adwords | Adwords (Capable to add more services) |
| Website Defect Analysis | No | Yes | Yes | No |
| Keyword Suggestions | No | Yes | Yes | No |

3 Our Conceptual Approach

From the abovementioned features that an internet visibility approach should have. We developed our conceptual approach with these several main functionalities. The functionalities are packaged as follows:

3.1 Manage Campaign

This function is meant for managing the campaigns for each client. Campaign is an entity which addresses a particular business or enterprise. For example, its website, social network page and related online advertisement service. It allows client to add, edit and switch campaigns.

3.4 Website Traffic Analysis

Website Traffic Analysis allows business owner to associate with website traffic analyser account by using open standard authorisation (OAuth). It allows ones to present the information of web traffic analysis from third-party service.

3.5 Online Advertisement Analysis

Online Advertisement Analysis provides capability for business owner to associate with online advertisement account via OAuth. The client able to view statistics pertaining to his online advertisement account.

3.6 User Management and Administration

User Management as its name suggest, is to manage

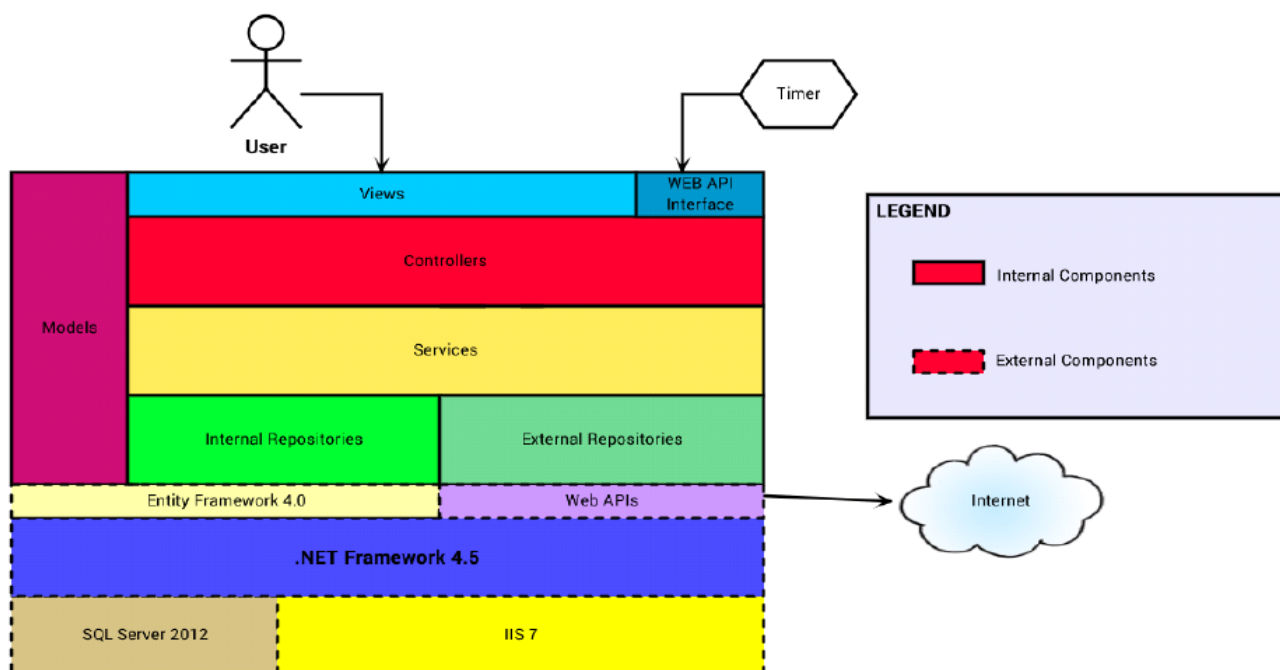


Figure 1: The Proposed Approach Architecture

3.2 Search Engines Analysis

Some of the capabilities it provides through this functionality are analysing rankings. This feature allows client to monitor ranking of search engine, to view search engine ranking and history, and store rankings information.

3.3 Social Network Analysis

With this function, business owner able to analyse the position of the business in social networks by viewing statistics of social network, associating social network account and collecting data from associated social networks account for all user.

the users of web application including authentication and data management. Whereas the Administration is an exclusive capabilities for administration and maintenance purposes.

3.7 The Components

The aforementioned functionalities are translated into design model by applying Model-View-Controller (MVC) design pattern. Figure 1 shows how our design model looks like. The following sub-sub sections are explaining the task of each components that reside under the proposed model.

3.7.1 Models

This component represent the persistent data model of the system which was modeled directly into the database by Entity Framework. These are the Plain-old-CLR-class (POCO) classes which every class will be mapped into a single table.

3.7.2 Views

View component models the interfaces of the system. This component defines the HTML output of the application which the user interact with or defines web APIs of the system which are in XML or JSON language.

3.7.3 Controllers

Controllers define business logic of the system at interface level. This component decides which view should be rendered and they retrieve data from service component and translates it into view via view component. Controllers determine user experience logic.

3.7.4 Services

The main task of this component is to implement business logic of the system at data level. In fact, service component collects raw data from repository component and process them as input to controller component.

3.7.5 Internal and External Repositories

These components interact with the database of the system and retrieve the data based on executing queries. External component communicates with external systems such as search engines and social networks. It will retrieve the required data through Web APIs and JSON language.

4 Prototype Early Findings

In this section we demonstrated some initial findings of our prototype. The prototype are demonstrated using dummy data where we applied them into prototype's capabilities namely search engine ranking dashboard, social media analysis dashboard and online advertisement analysis dashboard.

4.1 Search Engine Ranking Dashboard

Series of figures 2-4 below show how the current ranking of a campaign over Google, Bing and Google Places should be displayed out on sample data. It shows how the ranking of a campaign over time

displaying different keywords from different search engines.

| Keyword | Google | Bing | Google Places |
|------------------|--------|------|---------------|
| Fried Chicken | 1 ▲1 | 1 ▲3 | 3 ▲3 |
| Fast Food | 6 ▼2 | 4 — | 2 ▼1 |
| Sandwich | 1 ▲2 | 5 ▼3 | 3 ▼3 |
| Budget Breakfast | 3 — | 5 ▲1 | 100+ — |
| Budget Meal | 2 ▼1 | 4 ▼2 | 5 ▼2 |

Figure 2 The Prototype Demonstrates Current Ranking of a Campaign

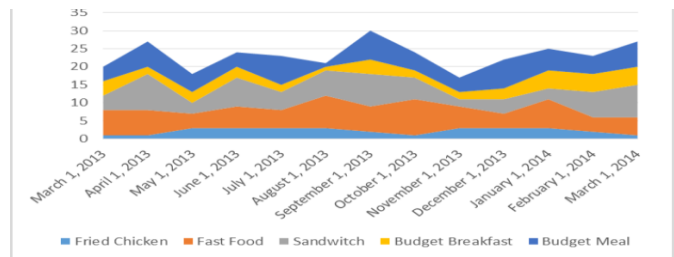


Figure 3 Demonstration on Different Keywords over Time

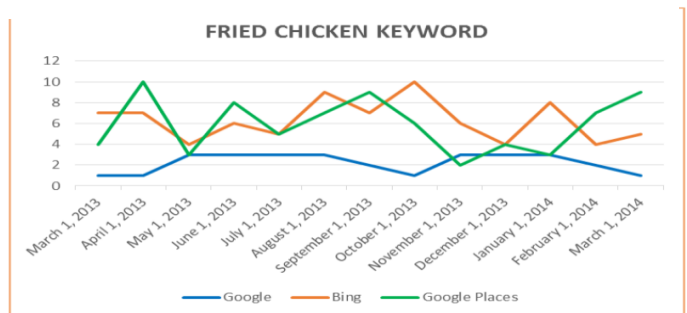


Figure 4 Demonstration on Keyword Ranking from Different Search Engines

4.2 Social Media Analysis Dashboard

This dashboard shows number of audiences of the social media from facebook and twitter change over time. The audiences' likes and followers were shown in graphical chart with legend next to it. Moreover it shows how the trend of social network throughout the whole year so that business owner can strategised his next move to make his website getting more followers and likes.

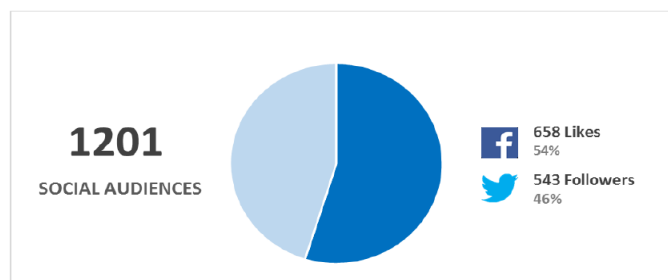


Figure 5: Header of the Social Media Analysis Dashboard

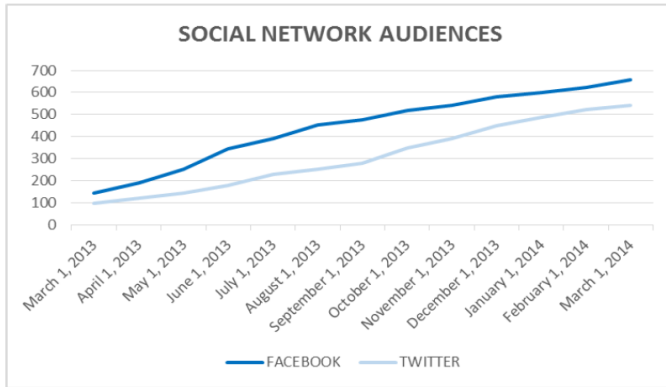


Figure 6: Flow of Change in Number of Audiences in Social Media Over Time

4.3 Online Advertisement Analysis Dashboard

With this dashboard, business owner can perform analysis data that being fed from Google AdWords. It shows a sample report table from AdWords input and tabulated it into a report form as figure below:

| Keyword | Clicks | Impressions | Cost | Avg. CPC | Conv. (1-per-click) |
|-----------------------|--------|-------------|------|----------|---------------------|
| sharepoint | 0 | 0 | 0 | 0 | 0 |
| software developer | 0 | 0 | 0 | 0 | 0 |
| sharepoint consultant | 0 | 0 | 0 | 0 | 0 |
| sharepoint developer | 0 | 0 | 0 | 0 | 0 |
| 3d modeler | 0 | 0 | 0 | 0 | 0 |
| blender expert | 0 | 0 | 0 | 0 | 0 |
| budget level designer | 0 | 0 | 0 | 0 | 0 |

Figure 7: A Sample of Report Table from AdWords

5 Conclusion

This paper presents a conceptual model that facilitates the task of monitoring and evaluating internet ranking.

The model consists of six components and seven functionalities. These components and functionalities are derived from the commonality elements and features that an internet visibility tool should have. This information are further described in previous section 2 and 3 respectively includes their sub and sub-sub sections.

The developed prototype is as a measuring tool of internet business visibility. Early finding it can boost up ones internet visibility by collecting data from search engines, social media, online adverts system

and web traffic analyser. In addition flexibility enough for customisation.

Future works, we intend to add more features i.e. keyword suggestion and website defect analysis.

References:

- [1] ELGHARABAWY, M. A. A. A., M.A. 2011. Web content accessibility and its relation to Webometrics ranking and search engines optimization. *Research and Innovation in Information Systems (ICRIIS), 2011 International Conference on*, 1-6.
- [2] Internet Marketing Software – SEO, PPC, Social: <http://raventools.com/>
- [3] KeywordSpy-Keyword software & tool for Keyword Research & Tracking: <http://www.keywordspy.com/>
- [4] LINKASSISTANCE 2014. SEO PowerSuite.
- [5] Lipperhey-make your website rank higher: <https://www.lipperhey.com/en/>
- [6] Mehran Halimi, Nazri Kama, A Change Impact Size Estimation Approach During The Software Development, Proceedings of the Australian Software Engineering Conference (ASWEC), 2013, Pages 68-77
- [7] MYSEOTOOL. 2014. *Search Engine Rankings for Web Designers, SEO Consultants & Agencies - My SEO Tool* [Online]. Available: <http://www.myseotool.com/search-engine-rankings/>.
- [8] Nazri Kama, Change Impact Analysis for The Software Development Phase: State-Of-The-Art, *International Journal of Software Engineering And Its Application*, Vol 7, No. 2, 235-244, March 2013, (ISSN: 1738-9984)
- [9] OKIN, J. R. *The Internet Revolution: The Not-for-Dummies Guide to the History, Technology, and Use of the Internet*, Ironbound Press, 2005.
- [10] Othman Mohd Yusop, Suhaimi Ibrahim. *Software Maintenance Testing Approaches to Support Test Case Changes – A Review*. Digital Information and Communication Technology and Its Applications (DICTAP 2011), Universite De Bourgogne, Dijon, France, June 21-23, 2011 Proceedings.
- [11] SHIH, B.-Y., CHEN, C.-Y. & CHEN, Z.-S. 2013. An Empirical Study of an Internet Marketing Strategy for Search Engine Optimization. *Human Factors and Ergonomics in Manufacturing & Service Industries*, 23, 528-540.

- [12] SpyderMate SEO Tools: <http://spydermate.com/>
- [13] StatMoz-WebSite Analysis for WebMaster: <http://www.statmoz.com/>
- [14] YALÇIN, N. & KÖSE, U. 2010. What is search engine optimization:SEO? *Procedia - Social and Behavioral Sciences*, 9, 487-493.