THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

Process Improvement & Ensuring Customer Relationship Using Business Intelligence

Anasbin TP.
PG Research Scholar, Manipal Institute of Technology, Karnataka, India
Dr. Lewlyn L. Raj Rodrigues
Professor & HOD, Humanities & Management, Manipal Institute of Technology, Karnataka, India
Sunith Hebbar
Assistant Professor, Humanities & Management, Manipal Institute of Technology, Karnataka, India
Shyfer A. Backer
PG Research Scholar, Manipal Institute of Technology, Karnataka, India

Abstract:
Process improvement is one part of the overarching discipline of Business Process Management. Every service driven companies try to meet the expectation of their customers by rather not delivering just a product, but ensuring that a customer is happy in all aspects during the project. This project was carried out to identify how to improve their processes and how to ensure customer relationship by using business intelligence. There were two main concerns while pursuing the project; the first one was how to improve the process of web development and the second one was how to ensure customer relationship using business intelligence. Firstly, we will discuss about how to improve the process of web development from start till end. The second step was incorporating these process improvement while building a website, ensure up to date search engine optimization techniques, analyzing the visits and traffic to a website and then supply these information to our clients to target the right customers and ensure more profit. The results generated after initialising all these steps where tremendous. The organizatons were able to generate more profits and reduce the unwanted costs. The work hours for specific targets where reduced and the quality of the final products where excellent in terms of customer satisfaction as well as quality. The main approach in improving the quality of websites was search engine optimization and reorganizing the structure. All main aspects such as domain factors, page level factors, site level factors, backlinks, user interaction, social network and branding, spamming factors, and special algorithm factors were considered and improved while pursuing this project. The tools used for analytics where Google Analytics, Woopra, and others.

Keywords: Process improvement, business intelligence, digital marketing using web analytics

1. Introduction

A process is any coordinated string of activities and related assignments necessary to meet objectives or targets. Every process has an input and an output. Every company has various processes in their day to day activities which might be organizational, human resources, monetary, functional, technical, or any other. Various processes at an organization are recognized and official to an extent. These processes are widely known among the organization; it will be widely acknowledged, maintained, and broadly implemented across the organization. A process can also be of a more intermediate in nature and explicit to a specific team or individual. These processes of less significance might be even undocumented, and are not in the main stream and are hence ignored or not given much priority. These processes are no less significant than other main processes and are sometimes vital; but these tasks are performed by just a few or even only one individual.

1.1. Why Process Improvement?

Process improvement refers to a step of procedures for making a process more efficient, well-organized, or clear. Process improvement is important to all domains of an organization since processes in nature degrade for various causes over a period of time. A company that carry outs process improvement focuses on practical crisis resolving in order to keep away from the scenario of functioning in trouble mode when process degradation occurs. The benefits of process improvement are following:

- Analyzes value of a process through customer perspective
- Describe, supervise, and determine a process in order to frequently assess it using information
- Analyze how a process interact and impact another process or customers
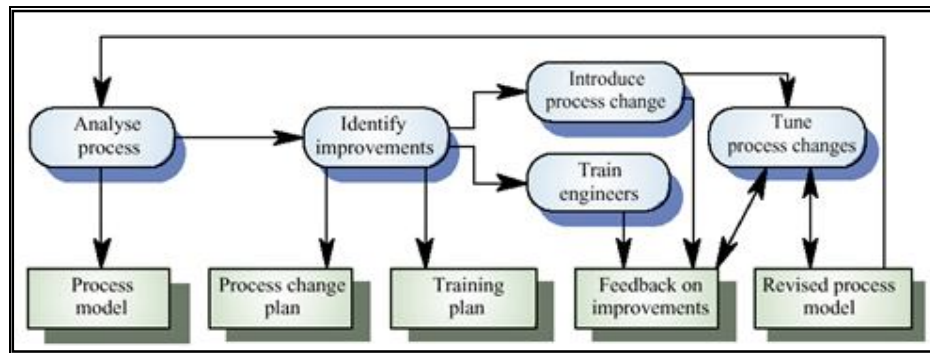- Eliminate unwanted operating costs

Figure 1: Process improvement, Source: Ian Sommerville, 2000, Software Engineering, 6th Edition, Chapter 25

1.2. Threats Associated With Not Improving a Process

At the point when key stakeholders are included in process improvement, they can on the whole concentrate on eliminating additional time, cash, assets, materials, and opportunities. We forget these valuable components when we neglect to look at the techniques we use to lead our business. Work could be finished more cost viably, rapidly, and effortlessly by improving the process of operation in an organization.

1.3. Motivation to Do The Project

The motivation to do the project was to analyze the impact of search engine optimization (SEO) and web analytics and how it helps to make ideal business decision and improve the existing web marketing process. Search Engine Optimization helps websites for better search engine ranking and thus targeting more customers. It helps them to focus at the ideal and legitimate online market. Search Engine Optimization helps the clients to improve their search engine visibility or presence to top of results in major search engines like Google, Yahoo etc. and we can set the level of visibility according to geographically, like countries, states, cities etc. Web Analysis reports are generated using Google analytics or Woopra. It shows all customer information like age, gender, location , language, time spend, web pages (with Max usage or time spend / Min Usage or Time spend), Bounce rate (% of customers leaving or exiting a website or webpage without Further interactions), Track the contact Form Conversion and Goals (Number of visitants to a website who generate a lead by filling a contact form, so that it be used by our clients to generate a business or deal and the revenue generations or conversions solely depends on our client) using scripts inside the contact forms, Generating forms or pop ups to generate leads or conversion. A recent study shows that 70 % of customers don't generate a lead or conversion during the first time; here we can use targeted internet remarketing. These customers who visited our websites or whom do we think are potential clients can be targeted using Woopra for Targeted Internet remarketing by sending them custom tailored Ads or Email with offers and benefits so that they can be converted into a Business or Revenue. Digital marketing can be carried out by using Email Marketing, Advertising, Social media (Google plus, Facebook, Pinterest, Reddit).

1.4. Research objective
- To analyze the impact of SEO for ensuring customer relationship
- To analyze the impact of web analytics for business intelligence

2. Literature Review

Business analytics is a vital constituent in business intelligence where online analytical tools are used to make custom reports to carry out analysis of information (Turban et.al, 2011).

The perception of business intelligence is recent and there is no generally approved explanation of business intelligence. In this scenario, the table offers a variety of explanations of business intelligence by various authors and vendors

[1] Turban et.al (2011)	A segment that merges services, functions, and technologies to collect, organize, and verify data, converting it into functional information to expand the insight and recognizing required to make ideal judgments.
[2] Jourdan (2008)	Methods that evaluates the information which dwells in an organization for enhancing its decision making process and thus giving a competitive lead in the market.
[3] Xu et.al (2007)	Business intelligence can be defined as a set of procedures for collecting the right information at the right scenario and providing the results to the exact people for making best decision.
[4] Zeng et.at (2006)	A collection of potential devices and techniques to enhance decision making process and operations at an organization and escalating the significance of the organization.

Table 1

3. Research Methodology

During the first phase of the project, the client website is verified and checked for errors as well as the improvements. There are two main tasks to be achieved by this project; First task is to improve the search engine optimization of our clients and make sure they are targeted towards the right audience. The second task is to install web analytics on all our client websites, monitor the user interactions and generate custom reports. The impact of search engine optimization can be measured using web analytics. Later these reports are to be sending to our clients to help them to make ideal decisions, target the right audience, to improve their processes, and to identify their strengths and weaknesses.

3.1. Search Engine Optimization (SEO)

The process of increasing the number of visitors to a specific website by practice improving various factors of a website and thus improving the search engine ranking of a website and better results. SEO consists of various modifications to the HTML code of specific web pages of a website to achieve higher rankings on search engines like Google, Bing, Yahoo, and others. Ideal SEO strategies in increases the visibility of a website on major search engines and helps in funneling the right audience to a website. Search engine optimization can be divided into two; on-page optimization and off-page optimization. On-page optimization is done inside the websites; that is the codes and scripts are verified and are set to target the right audience. Off-page optimization is actions like link building, blogging, social media, paid advertisements, directories, and others.

Following are some of the major aspects that have to be looked into while performing search engine optimization. All these factors contribute to search engine ranking results of a website.

Domain Factors
- Domain age- Domain age refers to age of registration of a website. A domain with more age has more trust on the eyes of search engine.
- Keywords in Domain- Having keywords in a domain give relevance or increase the visibility of a website.
- Domain History- Domain history refers to quality of the domain, for example a website which has adult content or has spammy content has a negative ranking according to Google algorithm.
- Domain Registration Length- A valid or legitimate new domain will be bought for 1 or more years. The registration length of a domain is directly proportional to trust of Google.
- Exact Match Domain- Exact match domain gives an advantage for your search engine results.

Page Level Factors
- Keywords in <Title tag> - Every page in a website has a specific keyword, which specifies the main function of the page. Adding keyword in title tag improves the search engine visibility of the page when the keyword is searched by a user.
- Keywords in <Description tag> - Description tags contains a brief description about a particular webpage in a website. Adding keyword in description tag increases the relevancy of the SEO.
- Keywords in <H1 tag> - <H1> tags are also considered as a relevancy signal my Google and other search engines.
- Image Optimization- Image optimization deals with reducing the size of images and offering the best pixel quality. Search engines can only see images as pixel and it is different from text data; so we have to give proper description about the image and other details about the image, so that it's easy for search engines to filter it out.
- Content Length- Content length is directly proportional to SERP (Search Engine result position). More the relevant content in your page, with less grammatical errors, the page has much relevancy on eyes of Google.

Site Level Factors
- Domain Trust- Domain trust refers to the ranking given by search engines based on the quality of the links to the domain.
- Site Architecture- Site Architecture has a major role in SERP results. A well structured is easier for search engine robots to index.
- Quality of Content- Quality of content has great relevancy now a days. Good quality content always attracts more users and thus is much more preferred by major search engines.
- SSL Certificates- SSL certificates improve the trustability of a website. Major search engines indexes SSL certificates, especially e-commerce websites.
- User Reviews- User reviews has a great impact on SERP results. Search engines definitely counts the number as well as keywords in user review.

Backlink Factors
- Linking Domain Age- The age of linking domain increases the authority of our website and thus improves our SERP results.
- Number of Links- Number of a links to a domain or its subpages increases the trust of search engines and thus enhances the SERP results.
- Page Rank of Linking Page- A link from a website with higher page rank to our website increases the SERP results.
- Micro formats – SERP results have shown that web pages with micro format rank above web pages without micro format.
- Directories- Major search engines gives preference to directories like DMOZ and Yahoo. A backlink from these directories improves the SERP results.

User Interaction
- Organic CTR (Click through rate) – A page with more organic visits have much more preference by major search engines.
- Direct Traffic- Web sites with traffic generated through organic searches or direct searches have much more ranking on the eyes of search engines and have preference over other sites with less organic traffic.'
- Bounce Rate – Bounce rate determines the quality of a webpage or a website. Bounce rate is the number of visitants who have leaved the website from any page without interacting or clicking inside the page.
- Bookmarks – Bookmarks contribute to SERP results. Webpage which have been bookmarked by users shows the user interaction and the demand for the page.
- User time- The time spend by the user on a website shows the user interaction on a website and thus its relevancy for users as well as search engines.

Special Algorithm Rule
- Google Plus – Google plus plays a major role in SERP results. The people in your Google plus circles would have much more filtered results about your products or services.
- Google + Local Page- Google always place the Google Plus pages over the organic search engine results.
- DMCA complaints- Websites with DMCA complaints will be preferred less by search engines.
- Geo Targeting- Search engines gives preference to a website with a local server or ICBM details in local searches over the organic results.
- User Browsing History – Websites that users visits while logged into a search engine gets much more preference during a search that occurs later.

Social Media
- Tweeter- Tweeter has a major influence in SERP results. The number of tweets and the authority of twitter account influence the search engine results.
- Facebook- The number of likes in Facebook, number of shares and Authority of user account influences the search results.
- Google Plus- Google plus has a major influence on SERP results, even higher than other social media applications. A Google Plus Verification, + local page, +1 and authority of Google plus page improves the search engine results of a website. The fact that Google Plus is a product of Google, supports the above statement i.e., It gives a boost to SERP results.
- Linkedin- Linked also plays a vital role in SERP results. The number of employees listed in Linkedin boosts the results.

3.2. Installing Google web analytics
Web Analytics helps you to track user browsing data and guides you in making ideal decisions. The track code is placed inside the header tag in source code of the website. These track codes helps in tracking the user interactions and other information which helps in making ideal decisions.
Google Analytics offers five different types of views
- Real Time - Real time view shows you the real time data on a website like the number of active users at the moment, top referrals, social traffic, keywords, top active pages, top locations, events, and conversions. This information's helps you in identifying the real time traffic to a website.
- Audience overview - The audience overview gives you information like demographics (age, gender), interest (Affinity categories, market segments), language, location, technology, mobile, operating systems and much other information. All these information helps you in making better decisions. All these information helps you in making ideal decisions and marketing planning.
- Acquisition overview - The acquisition overview generates insights on traffic channels (Organic, Direct, Paid, Referral, Social), helps you analyze the impact of search engine optimization, social media, and cost analysis. Cost Analysis helps you in analyzing the impact of paid marketing campaigns.
- Behavior overview - The behavior overview gives you information on site content, top pages, site flow, site speed, site searches, events, Adsense, experiments, and in-page analytics.
- Conversion overview - It gives you insights about conversions, goals, ecommerce (Product performance, sales performance, transactions, and time to purchase), funnels and attributions.

3.3. Tools used
The tools used for this project are Adobe Dreamweaver, Google Analytics, Woopra and other office tools. These tools are used for coding as well as tracking the user interactions.

4. Result Analysis
The result analysis can be done by from the final custom report as well as automated reports. These reports can be then send to clients for data analysis along with suggestions given by SEO and Web Analytics team. Similarly clients can understand the location of user, the number of visits per month or day, frequency of new vs. returning visitors, source / medium of visits, city or country or continent with number of visits and many more details. So in total, all these information's helps the clients to target their clients in a more effective manner and to reach the right and legitimate customers.

Search Engine Optimization and Web Analytics help any organization to develop better websites with advanced user interaction monitoring. All these information helps an organization to stand out from the rest of its competitors and be innovative in the market.

5. Conclusion

The results created after implementing of all these processes where enormous. The organizations could create more benefits and decrease the unwanted expenses by analyzing the information from the reports. Likewise, the work hours for particular targets where reduced and they were able to ensure client satisfaction and ensure additional quality in their products and services. SEO and Web Analytics also helped the customers in focusing on web marketing and helped in funneling the right audience to their websites.

6. Future Scope of work

A recent study shows that Google changes its search engine algorithm at least once a day; the future scope of work relies upon understanding the changes made by search engines and helping the clients to market their product and services to a better audience who will generate more revenue rather than visits.

Likewise another future scope of work would be improving the process of search engine optimization and ensuring all clients to display better SERP ranking even if they have low trust or ranking by search engine. The SERP results can always be manipulated by a developer who has better insights on search engine ranking signals. A higher SERP result would always help the clients to better showcase their products and services and thus improve their brand name. Similarly better customized web analytic reports would always help our clients to make better decisions. The information such as age, gender, affinity groups, interest, geo location etc will help in improving the marketing as well as the business campaigns. All these data will help the organizations to make ideal decisions and stay ahead in the market.

7. References

1. Turban, Efraim, et al. Decision support and business intelligence systems. Pearson Education India, 2007.
2. Vercellis, C. (2009). Front Matter (pp. i-xviii). John Wiley & Sons, Ltd.
3. Jourdan, Z., Rainer, R. K., & Marshall, T. E. (2008). Business Intelligence: An Analysis of the Literature 1. Information Systems Management, 25(2), 121-131.
4. Xu, L., Zeng, L., Shi, Z., He, Q., & Wang, M. 2007. Research on Business Intelligence in enterprise computing environment. Paper presented at the IEEE International Conference on Systems, Man and Cybernetics, 2007. ISIC., Montreal, QC, Canada.
5. Zeng, L., Xu, L., Shi, Z., Wang, M. and Wu, W. 2006, 'Techniques, process, and enterprise solutions of business intelligence', 2006 IEEE Conference on Systems, Man, and Cybernetics October 8-11, 2006, Taipei, Taiwan, Vol. 6, pp. 4722.
6. Chang, E 2006, 'Advanced BI Technologies, Trust, Reputation and Recommendation Systems', presented at the 7th Business Intelligence Conference (Organised by Marcus Evans), Sydney, Australia.
7. Raisinghani, M. 2004. Business Intelligence in the Digital Economy: Opportunities, Limitations and Risks, Hershey, PA: The Idea Group.
8. Reinschmidt, J., & Francoise, A. (2000). Business intelligence certification guide. IBM International Technical Support Organisation.
9. Search Engine Journal, www.searchenginejournal.com