

# IMPROVING CUSTOMER GENERATION BY INCREASING WEBSITE PERFORMANCE AND INTEGRATING IT SYSTEMS

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## Abstract

*This paper describes the research into the design of commercial websites. The research will lead to the identification of design elements that may have significant impact on user behaviour. The research will also investigate how these elements could be altered to provide a better browsing experience to users and ultimately increase online conversion and profit. The research focuses on the design of commercial websites. Their goal is to generate sales by selling products and services online or by promoting their products and services online and turning enquiries into later offline sales. The research is using data collected at a SME to determine how changes to website design affect online conversion rate and impact upon Key Performance Indicators (KPIs) of online business models. In order to track customer behaviour online, a custom online tracking system was created to monitor how users behave while browsing a website. Google Analytics is also used to collect behavioural data and other statistics. The rest of the sales cycle is tracked through a Customer Relationship Management (CRM) system, which was customised by implementing extra modules in order to record information at various stages of the sales cycle. The online tracking system is not fully integrated with the CRM system at present. However, it is still possible to build customer profiles across the two systems manually.*

**Keywords:** web, WWW, browser, filter, Internet.

## Introduction

The aim of the research is to investigate the design of commercial websites with a view to identifying web design elements that are key to the success of online business models that rely on Pay Per Click advertising campaigns to attract customers.

**Research Objectives:** The objectives of the research are:

1. To build customer profiles that cover the various stages of an online business model which relies mainly on PPC to attract customers – starting from the initial visit of the customer to a website to the delivery of the customer's order. In order to do this:

a. Different IT systems were integrated together and customised to collect data that is required to generate customer profiles for the sales cycle. Most of the integration work focused on data and this was accomplished through the introduction of Microsoft CRM (MSCRM), which is used as a central data repository. In order to achieve this, the MSCRM system was extended through the development of a number of custom modules using .NET.

b. A user tracking system was developed for the website. The system records very detailed browsing history of users as well as information regarding where users came from e.g. which search engine or which PPC campaign and search keywords was used. This data provides a customer profile for the initial stage of the business model.

2. To identify website design elements which can increase the performance of a website and subsequently a business. By experimenting with the design and navigation of a website and then analysing customer profiles, the impact of the changes on a business can be understood.

3. To identify metrics for measuring the impact of changes to web design on various stages of an online business model. So far some of the measures identified include:

- performance of the site as measured by conversion rate.
- quality of enquiries.
- number of enquiries that turn into opportunities.
- number of opportunities that turn into orders.
- type of customers who enquire e.g. individuals, small companies or corporate.
- profit per enquiry.
- the potential of an enquiry to generate repeat business.

4. To demonstrate that by using a system such as the one described in 1(a) and 1(b) to build complete customer profiles that are used to measure the impact of changes to a website and to identify key web design elements, the following can be improved:

- Customer generation.
- Sales.
- Marketing.

5. To integrate a Customer Relationship Management (CRM) system with other applications including websites to create an integrated IT system that can deliver benefits such as improved:

- Customer generation.
- Sales.
- Marketing.
- Information flow.

## Research Outline

The research was split into 2 stages.

1. The first one consisted of implementing and integrating IT systems. This was vital for creating complete customer profiles that spanned the various stages of the business model. These systems are now collecting data that will be analysed to test hypotheses in the later stages of the research.

2. The second stage of the research is focusing on building a dynamic website which can collect data about user behaviour on websites. Layout and navigation are also being experimented with to achieve high conversion rates.

Through integration of websites with systems introduced in stage 1, it will be possible to build user profiles that span the business process. Implementation of stage 1 and stage 2 will provide the ability to collect data and measure performance at various points in a business model and potentially deliver increased information flow, increased productivity and better decision making.

In the first year, the research integrated a MSCRM system with other applications to create new electronic

systems. The features of the MSCRM system were extended by building custom modules using .NET. The MSCRM system became the central repository for most of the data collected. The systems were designed to integrate with websites to allow for the automatic handling of enquiries from web sites as well as recording browsing data for users in order to build accurate customer profiles.

The MSCRM system enabled the implementation of business logic through automated processes. Most of the initial research focused on: data migration, data integration, and ways to use .NET to extend existing functionalities and how to build integrated systems. Ways of measuring the benefits of the new system are being investigated and will be measured on the target system implemented at the collaborating company against the “automatic” winning of more business, improvement in sales processes and the faster and more efficient servicing of customers.

Some of the deliverables so far have been:

- A new integrated MSCRM system which has been customised to meet business requirements and deliver benefits in terms of sales management, productivity, information flow and reporting on key performance indicators
- New automated business and engineering processes.
- New custom MSCRM modules that improve project management, quality control management and measure customer satisfaction.
- The ability to generate and view critical engineering and business data and statistics in real time through dashboards and custom reports.

The research is now focusing on the development and integration of websites with the MSCRM system. Websites at the collaborating company were static at the beginning of the research. Little was known about customer behavior on websites or sources of traffic, etc. At the time the use of web analytics was just starting to become the norm for any good online strategy. The launch of Google Analytics which is a free analytics tools made the use of analytics more widespread. Small companies which had previously not been able to afford expensive web analytics packages such as WebTrend now had access to the same technology as bigger companies. Web analytics allowed websites to be designed to meet the specific needs of customers.

The backend of a website at the collaborating company was changed in order to make the website dynamic. As part of this a custom tracking module was created to track users and build a history of their activity on the website. Ways of integrating the website with the MSCRM systems are now being investigated. This will

allow emails from the website to be automatically converted into lead records and assigned to a sales person. Also user activity will be recorded in the MSCRM system to provide a complete profile of each customer.

As well as changing the backend of the website, the look, layout and content of the website have also been updated. This required an understanding of who the site visitors are and what they are looking for. The data collected by the backend was used to answer these questions, in order to work out where redesign was required and what the best design would be. The data collected by the tracking module has so far been successfully used to identify browsing patterns and build customer profiles. This has helped identify customer segments, which have been targeted via segment specific online marketing campaigns and web pages. So far, results have shown an increase in conversion rate on the website.

Some of the deliverables from this work have been:

- New dynamic website which can track user activity and customise website content based on the user's browsing history and search keyword.
- New improved layout, look, navigation and content for the website.
- Improved conversion rate on the website due to changes made to landing pages based on data analysis carried out using the customer profile built using data from the online tracking module and MSCRM.

The work carried out so far with the integration of MSCRM and the development of the website has enabled the collection of a large amount of data that can now be used to:

- Build customer profiles which can be used to drive marketing efforts by
- Better targeting advertising by identifying market segments and niches
- Identifying and understanding the requirement and expectations of web site users. This knowledge can be used to improve the website and increase conversion rates
- Measure business performance at different stages in business processes

Make informed decisions regarding the management of a number of business processes.

The research is starting to look at ways of using customer profiles to drive marketing initiatives. This part of the research is still in its early stages. The goal of commercial websites is to generate sales by selling products and services online or by promoting their

products and services online and then turning enquiries into later offline sales. The design of a site and its navigation can have a significant impact on the site's usability, which can in turn affect the users' experience with the site.

The research is identifying design elements that may have an impact on user behaviour and is considering how these elements can be altered to increase online conversion and profit.

The literature review for this part of the work has identified key design elements as well as human factors, which are affected by these design elements. A new basic model has been developed and data is being collected through a series of online experiments. These experiments have investigated (and are investigating) how users react to changes made to specific design elements on web pages. The experiments are being carried out on dummy web sites and on company websites at the collaborating company. Some preliminary analysis has already shown that small changes to a page's design can have a big impact on lead generation and cost per lead.

Graphs 1 and 2 show how the number of leads and the cost of leads have varied from month to month over a 4.5-year period at the collaborating company. The graphs also show some of the significant changes that took place over that time as well as some external factors that are thought to have affected lead generation.

Graph 1 shows an upward trend between 2005 and 2008. Overall the average lead per year has been increasing over time. There is a drop in the number of leads in February 2009 which is due to the fact that the advertising spend was halved. Despite this the number of leads produced is still high.

Graph 2 shows the average cost per lead between 2005 and 2009. From 2005 to 2006 there is a significant increase in cost per lead suggesting that the online advertising and the websites' performance were poor. The cost per lead has been steadily going down since April 2006. There is a significant drop in cost between July 2007 and August 2007. This is due to changes made to the advertising campaigns and landing pages based on data analysis carried out using data gathered by the online tracking system that was implemented on the main website. By combining the data captured by the online tracking system with the data in MSCRM it was possible to identify, for the first time, the type of leads that each of the online advertising campaigns were generating. By using other data that was collected by the online tracking system e.g. search phrase used, search engine and country, basic behavioural and demographical profiles were built. These profiles

allowed for a better understanding of users who were visiting the site and provided opportunities for content targeting, segmentation and personalisation.

In May 2008, the backend of the main website was updated in order to capture more behavioural data. Some elements of the website were also changed from static to dynamic e.g. the navigation was made dynamic and displayed different links depending on the advertising campaign that users came from. By the end of June 2008, enough data had been captured by the new system to carry out analysis. As a result of the analysis, the landing page of one of the main advertising campaigns was replaced by a different landing page. The campaign ran two adverts with different messages but the same landing page. Using the new dynamic features now available on the site, the title of the landing page was set to change on the fly to match the exact title of the advert that the user had clicked on. The idea was to increase relevancy between the advert and the landing page to promote conversion. The new landing page combined with the dynamic title, brought a big increase in performance, which contributed to a big increase in number of leads in July 2008 and a lowering the cost per lead from July 2008 onwards.

In November 2008, the main website was redesigned to have a new look, updated navigation and updated content (screenshots in Appendix A). The layout of the site stayed the same, as did most of the content. The look of the site however was changed to give the site a more modern look. The new site was launched at the end of November 2008, but changes were made over the next two months to refine the website in order to bring the advertising and website performance back to what it was before the launch of the site. As can be seen from the graph, the cost per lead went up in December 2008 but started coming down again in January 2009.

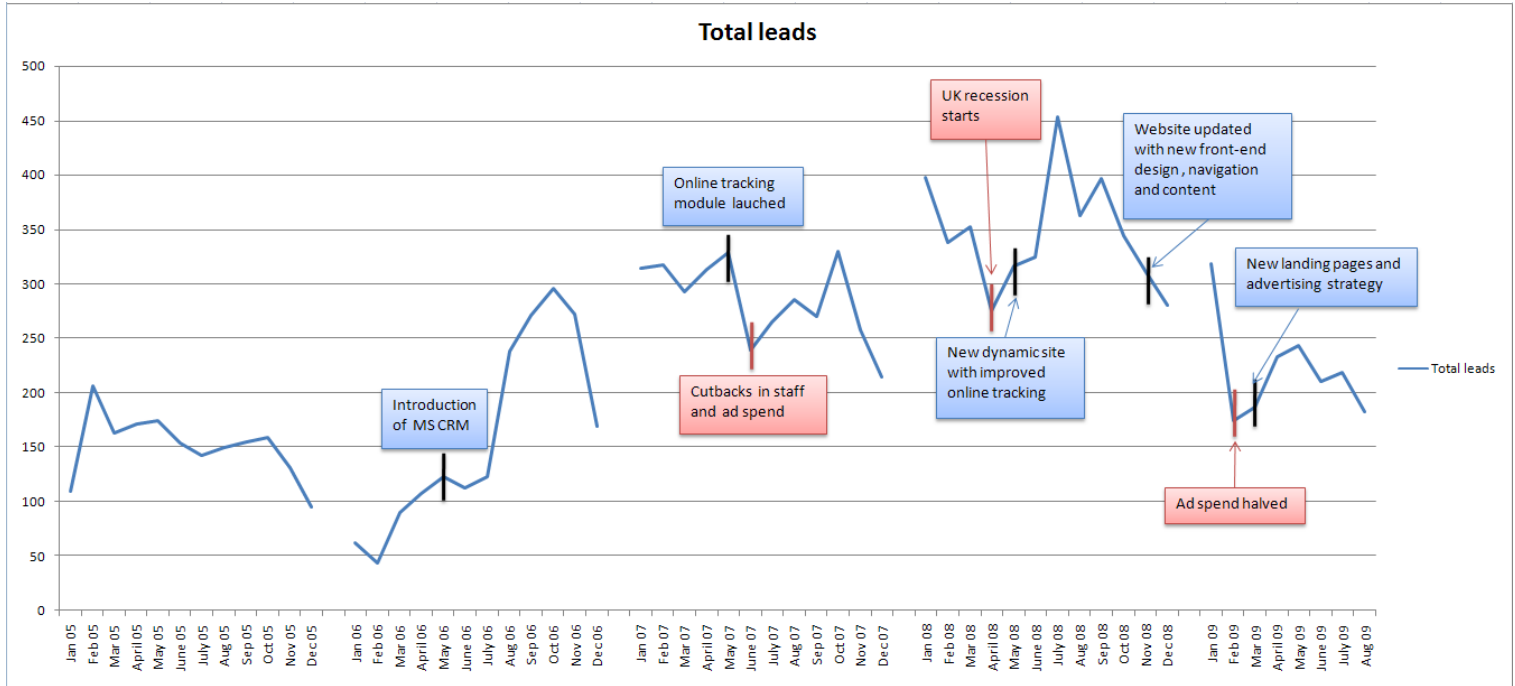
In February 2009, due to the economic downturn, the advertising budget was halved and the advertising campaigns were targeted to the UK only. In order to generate a high number of leads with half the budget, it was crucial to increase the performance of all landing pages. As the data in the MSCRM system and the online tracking module was getting richer, the customer profiles were also expanding. As a result of this better understanding of customers, segmentation was now an option. It was decided that there were two ways of achieving segmentation on a landing page:

1. Have a number (it was decided that 4 might be the optimum number) of options (in graphical form) for users to choose from.
2. Have a short questionnaire and allow user to effectively choose the services that they required.

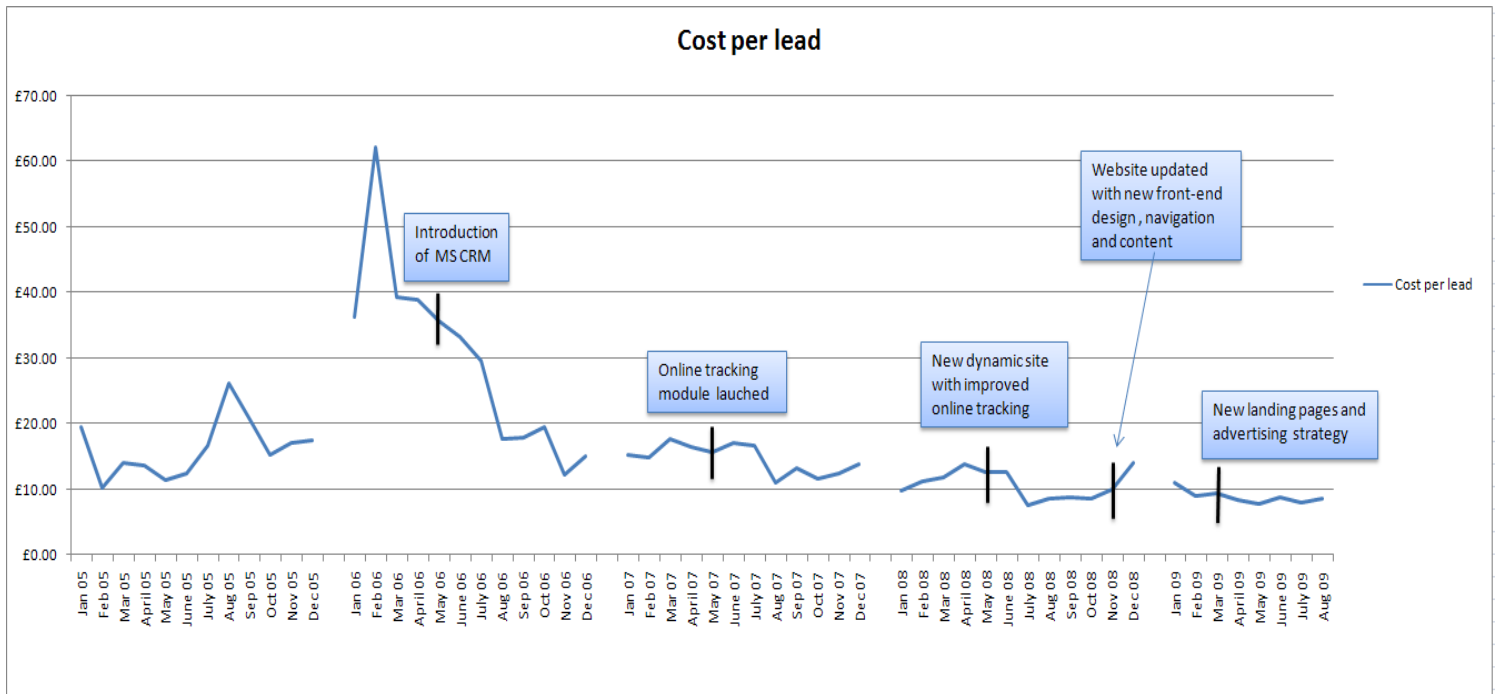
In March 2009 both landing pages were tried out on different campaigns. They both performed better than the “non-segmented” landing pages achieving higher conversion rates than the latter. This contributed in lowering the cost of leads between March 2009 and August 2009.

All of the changes made to the website so far have relied heavily on data analysis. The data for this comes from the MSCRM system and the online tracking system. By combining data from the two systems, it is possible to build customer profiles which play a crucial role in understanding the users who visit the website. This in turn allows better targeting of online advertising and also better landing page design.

Initial data analysis as shown in Graphs 1 and 2 indicate improved customer generation both from a quantitative point of view and a cost point of view. It appears that this improved customer generation is the result of improved website performance and integrated IT systems.



Graph 1: Total leads per month



Graph 2: Cost per lead per month



