Online marketing ROI:

Creating a model to make the returns of online marketing transparent

Master Thesis

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Management summary

This research attempts to give insight in the return of investment (ROI) of online marketing activities. Marketers acknowledge the importance of measurement, but only few of them apply meaningful measures for their organization. The literature provides methods to give insight in the return of marketing in general and (e-commerce) websites, but a lack of theory is found concerning the determination of ROI for branding websites. Therefore this research attempts to fill the gap by providing a model that make the ROI of online marketing concerning branding websites transparent.

The available data suitable for creating more insight in the ROI of a website is analysed and the definition of ROI discussed. I turned out that there is no standard ROI equation.

Only one concept from literature, the customer lifetime value, provides a solution for calculating the marketing ROI. This research concluded that this method cannot be applied to branding websites.

The research did not succeed in calculating the ROI of branding websites, because no reliable data could be identified to determine the impact of branding websites on the customer's buying behaviour. Therefore a model is proposed that supports marketers to optimise their online marketing activities, ultimately leading to a maximum ROI. The model is designed using 'design science' and 'action research' research methods. Two design cycles were performed, both times validated through application in practice and testing against the model requirements. The final result is a model consisting of a framework linking the website's strategy to measurable indicators, and a process description for selecting the proper indicators. Also the model provides norms for valuing the indicators based on benchmarking.

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Introduction

In this introduction the research motive and basic information about the company will be given. After the research problems and questions will be discussed. Next the goals and the scope of the research will be provided, conclude with the outline of the paper.

1.1 *MOTIVE*

The marketing department at Heineken Netherlands (hereafter referred to as 'Heineken') is historically seen as a very important department. Within Heineken's marketing mix the importance of the interactive media has been increasing because of three reasons. The third reason is that interactive media provide personalized marketing opportunities. Secondly, there is a realistic future threat of an (partly) alcoholic commercial boycott at traditional 'offline' marketing channels (TV, newspaper, outdoor advertising). Finally, beer consumption per person in the Dutch market is shrinking by about 0.5% per year[1], which forces Heineken to search for new marketing channels like the Internet.

At the moment Heineken is spending much on online marketing, but it is not clear what the returns of their online marketing activities are. The determination of this return is especially important considering Heineken's future Internet plans. Herwin van den Berg, marketing director Heineken Netherlands, explains the plans as follows: "Heineken.nl will look completely different next year. In Internet environments you can build communities that can be profitable (beside just PR), and the profit you can reinvest". Saying this he implicates that the Internet activities at Heineken have to change from a cost centre to a profit centre, something uncommon and ambitious in the fast moving consumer goods industry (FMCG). But how do you know what the return of a website is? And how can this return be maximized? This research intends to create a model that gives insight in the ROI (return on investment) of a website and supports marketing in the decision-making process.

1.2 ABOUT THE HEINEKEN COMPANY

Heineken N.V.
Heineken is one of the largest brewers and beverage distributors in the world. Beside beer, Heineken also distributes wine, spirits and soft drinks. Heineken's principal international brands are Heineken and Amstel, but the group brews and sells more than 170 international premium, regional, local and specialty beers. Heineken has the widest presence of all international brewers with 120 breweries in more than 65 countries. Among the brands Heineken brews for the Dutch market are Heineken, Amstel, Brand and Wieckse Witte. Heineken also owns Vrumona, a producer and distributor of soft drinks like Pepsi, Sisi, Sourcy and Crystal Clear.

E-business team
In 2002 the division Heineken IT Nederland became the main IT service supplier of Heineken, including soft drinks supplier Vrumona and the international head quarters Heineken International. Within this division, the "E-business Team" is responsible for the e-business activities on the websites of Heineken Netherlands and Vrumona. Its main internal customers are the Marketing and Trade Marketing departments (hereafter referred to as 'marketing'). The team is responsible for the technical realization of about 40 websites, varying from rather simple brand websites and content websites to more complex loyalty websites. One responsibility of the E-business Team is to supply Marketing with information about online customer behaviour. From this responsibility the need for conducting this research was born. At the moment the E-business Team is in a

[1] Source: http://www.horeca.org

transformational process, growing from the initial two members to a full-grown team of about six members

1.3 RESEARCH PROBLEM

The research problem can be made clear by describing a situation which often occurs at Heineken, but is also likely to happen at many other organizations. Heineken launched a new website to promote a new alcoholic drink. The main part of the introduction campaign is done online. A day after this campaign marketers and e-business consultants sit together in a final evaluation. During this session several questions are raised:

"Was this a good campaign?"
"Was the new website worth the high investment?"
"Are we spending money on what we originally planned to do?"
"Is 100,000 visitors in one month a lot?"
"What can be improved?"

Beside some general remarks based on gut feeling, it turns out that nobody can give underpinned answers to these questions. At Heineken some online marketing performance measurement are done, using online surveys and web statistics software, but still they cannot fully answer the questions mentioned above. There is a need for a method that can deduce meaningful analysis from the metrics and provides guidelines for improvement.

The traditional media make use of methods to determine the impact of advertising, based on daily panel research. Although these methods are being criticized, they have existed for years and are generally accepted. The online world enables far more possibilities to measure, but paradoxically no commonly agreed standards exist here. The reasoning in the section above leads to the following problem statement:

Main research problem

- No robust analyses methods are available to determine the return of the online marketing expenses

At the moment Heineken does not have much insight in the returns of investments in online media. A reason for this is that although data from different systems has already been used for evaluation purposes, there is no overview of all the available data potentially valuable for website performance. This splintered data leads to the problem that marketers do not have good insight in the performance of their website. Also, marketers do not have the right tools to help them make decisions about how to optimize their website's performance. An overview of the data is necessary to perform the right measurements, since it is only possible to optimize what can be measured. Another related problem is that there are no norms available to make a decent evaluation of the performance metrics. So the following sub research problems can be identified:

Sub research problems

- There is a lack of insight in the ROI of online marketing activities
- There is no overview of available data that is potentially valuable for ROI determination
- There are no clear guidelines available for optimizing the ROI
- There are no norms available for evaluating website performance metrics

1.4 RESEARCH QUESTION

From the problem description it can be concluded that there is a need for a model that gives more insight in the return of online marketing, and provides guidelines to optimise this return. This leads us to the following main question:

Main question
- How can the ROI of online marketing activities be determined and optimized?

Before we can design a model, it should first be researched what ROI is in terms of online marketing and what role it plays in literature and in practice. Also the data needed for performance measurement should be investigated, and how much of the ROI can be measured based on this data.

Sub questions
- What is ROI in terms of online marketing?
- What is the role of ROI in online marketing?
- What is relevant data to determine the ROI and how can this data be collected?
- To what extent can the ROI of online marketing be determined?

Note that the research questions are not specifically focused on the Heineken case, but are formulated in a general way to improve the generalizability of this research.

1.5 GOALS

The goals of this research are twofold:

1) Scientific contribution
The scientific goal of this research is to develop a model to determine the ROI that is potentially applicable in other organizations and provides a foundation for further research.

2) Heineken contribution
The research will give Heineken a better insight into the returns of their websites and should provide indicators to support decision-making. Also, this research will support the collection of the right requirements for the implementation of a management reporting tool for online marketing activities.

1.6 SCOPE

Two aspects limit the scope of this research:

1) Branding websites:
Branding websites "typically involve experiential content that doesn't directly drive a transaction" (Burby, Atchison 2007). The main objective of branding websites can roughly be described as giving the visitor a better feeling about a brand, ultimately leading to higher retail sales. This relation between marketing and sales is indirect. The impact of marketing on sales is harder to measure than in case of pure e-commerce websites, because the goal of branding websites is not to sell products online, but rather offline in retail stores. Moreover, Internet is often only one of the marketing channels in a multi-channel marketing strategy, which makes it hard to measure the effect of Internet with respect to other channels.
Because of this indirect relation, the scientific challenge to give insight in this relation is greater. Therefore the focus in this research is on companies that have websites mainly for marketing purposes, which is often the case for companies in the fast moving consumer goods industry (FMCG) like Heineken.

2) Functional design

The complete implementation of an online management-reporting tool in an organization requires many steps, as depicted in Figure 1 below. If all the aspects would be discussed, the research probably lacks the required depth for a scientific paper and would result in a Heineken best practice. In order to maintain focus, the scope of this research is limited to the functional design of the solution. This specific scope is chosen because it is the greatest challenge from a scientific perspective; other aspects like the vendor selection and the actual implementation are more standard and therefore less challenging procedures. The scope is presented by the green area in Figure 1.

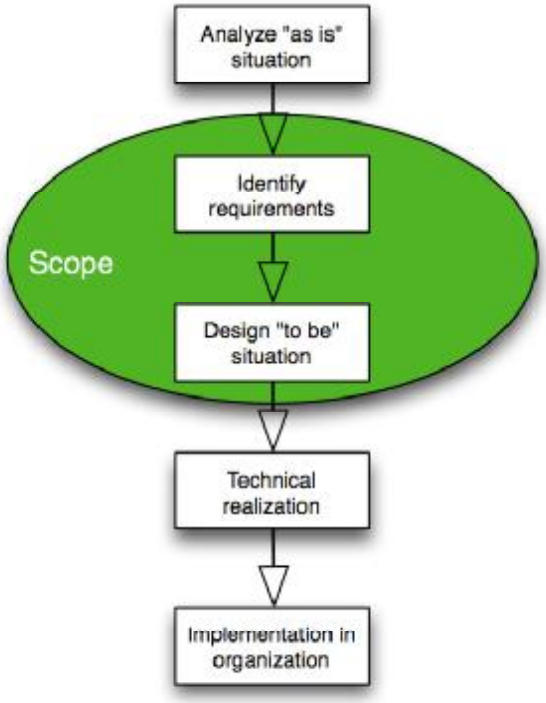

Figure 1: Research scope

1.7 OUTLINE

Chapter 2
In this chapter the relevant literature about ROI in online marketing will be researched, the findings discussed and conclusions drawn about the current state of online ROI use in literature in literature and practice.

Chapter 3
The research method will be selected and the research design presented.

Chapter 4
The term ROI will be discussed from a financial and conceptual perspective, based on theoretical principle, to create a foundation for further discussion.

Chapter 5
The different types of available data potentially useful for online marketing performance evaluation will be discussed and a comparison is made.

Chapter 6
The available theories about ROI measurement/optimization found in literature will be applied to online marketing

Chapter 7
The model requirements will be identified and the first model design cycle is proposed. The cycle consists of the design, application to www.heineken.nl and finally evaluation/validation of the proposed model.

Chapter 8
The second design cycle will be proposed, consisting of the improvements, model proposal and application to www.crystalclear.nl. Finally the model is validated.

Chapter 10
Conclusions will be drawn and recommendations will be made.

2 Literature review

The defining characteristic of research is that it results in the creation of new knowledge. Before the article can be contributed to the 'scientific body of knowledge', the current state of research on the concerning topic should be analyzed. In this chapter the literature search process and findings will be discussed. Also the role of ROI in marketing and specifically online marketing is discussed.

2.1 LITERATURE SEARCH PROCESS AND FINDINGS

2.1.1 Step 1

The goal of this literature review is to find out if authors have already been made previous attempts to determine the return of online marketing activities. Within the main research question ("How can the ROI of online marketing activities be determined?"), we can identify three scientific areas: *ROI*, *Internet* and *marketing*. The first literature search step is based on these three keywords. To be sure of wide coverage of available scientific articles, two scientific databases were used. The first database used was 'Web of Science', which covered 100% of the top 10 IS-Journals (Schwartz & Russo, 2004). Of course the interest area is wider than just IS literature, but it is at least some proof of quality. To avoid missing critical articles, a second database named 'Scopus' was used. The queried results are scored on their relevance by using only one criterion: the articles must describe a relation between the three keywords. Not only these keywords were used, also their synonyms to cover all the relevant literature. For example, the term 'ROI' is not a generally accepted term; authors using terms like 'return' or 'performance measurement' may discuss the same topic.
Although a number of articles were found, the result of this first search process resulted in zero relevant articles. An article is relevant if it describes a relation between the (financial) performance of online activities in the marketing field. No attention is paid to the reputation of the different journal, because of the limited number of results. See for the complete search process steps Appendix A.

2.1.2 Step 2

In order to at least find some literature, the only option is to broaden the scope of the search. This can be done by limiting the number of keywords from three to two. Since the term ROI (or an equivalent) is the main keyword of this research, two options are possible:

1. Leave out the word *marketing*, to look for papers about the ROI of websites (not specific websites for marketing purposes)
2. Leave out the word *Internet* to look for papers about the ROI in the general field of marketing (not specifically online)

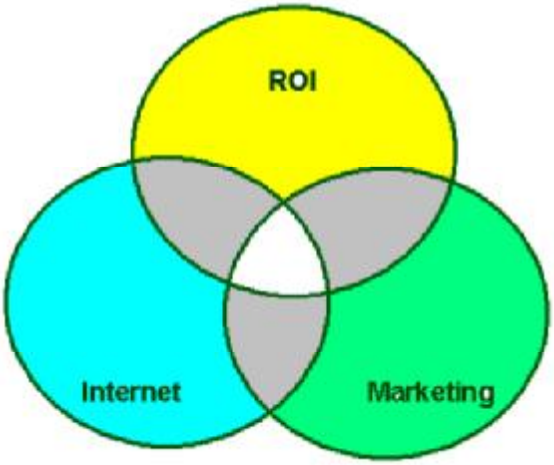

Figure 2: The literature search keywords and their overlap

The used keywords and their overlap are visualized in Figure 2. Instead of only searching in the white triangle in the middle as in step 1, in this step the bigger area shared by the circles 'ROI' and 'Internet' is searched. Again the keywords synonyms have been used as well. The relevant articles found by only using these two keywords are placed in the 'concept matrix' (Webster and Watson, 2002) below (Figure 3). The articles are synthesized based on their content to create a structured overview. After reading the articles, the content was analysed on three main criteria.

The first criterion is the scope of the article, to make clear if the article is about websites in general, or a specific type of website. Branding websites are mentioned because they are within the scope of this research. E-commerce websites are mentioned as well, because it shows that many articles discuss e-commerce websites only. The selected topics are a rough classification of the topics discussed in the articles. Finally, the articles have been scanned for available methods that intend to determine/optimize the return of a website.

	Scope			*Topics*					*Methods*	
	General websites	E-commerce websites	Branding websites	Need for ROI	Aligning website with business goals	Usability/performance	Data integration	Process optimisation	Financial calculations	Performance score model
Carroll (2003)	X			X	X	X		X	X	
Hahn et al. (2002)		X		X		X	X		X	
Merwe & Bekker (2003)		X				X		X		X
Miller (2008)	X									
Bremser & Chung (2005)		X			X					X
DeLone & Mclean (2004)		X				X				
Palmer (2002)	X					X				X
Peterson (2004)	X	X						X		
Peterson (2005)	X									
Smits & Bisschop (2007)	X				X			X		X
Burby & Atchison (2007)	X	X	X	X			X		X	
Calero et al. (2005)	X					X				

Figure 3: Concept matrix of the literature search results in step 2

First the scope of the articles will be discussed. In the matrix can be seen that 8 articles focus on websites in general and 6 articles specifically discuss e-commerce websites. Only the books from Peterson (2004) and Burby & Atchison (2007) focus on both. Burby and Atchison (2007) are the only authors discussing the ROI of branding websites.

The main topics discussed by the authors are the need for ROI, the alignment of the website goals with the business goals, website usability, data integration and process optimisation. These aspects can all be important for optimising a website and changing the organisation to stimulate performance measurement. None of the authors try to calculate the ROI. Moreover, all authors speak in terms of ROI, but many of them do not use the term in a financial meaning. The authors assume that an optimised website automatically means an optimal financial return. In other words: the authors discuss no relation between the performance of a website and impact on financial returns. Other authors do make some simple financial calculations, but only with respect to e-commerce websites. As discussed, in case of e-commerce websites the relation between marketing and sales is more direct and therefore easier to describe.

The last criterion is the availability of methods to determine/optimize ROI. The majority of the articles only discuss the criteria for a successful website or provide a score model to measure the success of a website. These score models demonstrate how websites can be optimised or provide success factors for a successful (e-commerce) website. An overview of the models and their dimensions can be seen in Table 1. The dimensions of the different models are quite similar to each other, except the Internet Scorecard model from Smits &

Bisschops. This model is based on the balanced scorecard theory (R.S. Kaplan & D.P. Norton, 1992) and helps to view and score a website from different perspectives. (see same table). The other score models do discuss the customer and website perspective, but don't use the financial and organisational perspective. Searching for website performance measurement in general would result in even more score models, which exist of dimensions similar to the ones discussed here. These articles do not discuss the terms 'returns' or 'ROI' and since their idea is the same as the ones discussed here, they are left out of this research.

Table 1: Website performance score models

Article	Scope	Dimensions
Merwe & Becker (2003)	e-commerce website	▪ interface ▪ navigation ▪ content ▪ reliability ▪ technology
DeLone & McLean (2004)	e-commerce website	▪ system quality ▪ information quality ▪ service quality ▪ use ▪ user satisfaction
Palmer (2002)	general website	▪ system performance ▪ navigation ▪ interactivity ▪ responsiveness ▪ content quality
Smits & Bischops (2007)	general website	▪ financial perspective ▪ customer perspective ▪ website perspective ▪ organisation perspective

The overall conclusion about the results found in step 2 is that the articles do provide some useful theories, metrics and score models for *optimising* websites, but not for *calculating* the ROI of a website. Also the articles discuss websites in general and e-commerce websites, but pay very little attention to branding websites. A last remark is that none of the articles provide norms to assess how well a website performs.

2.1.3 Step 3

No articles could be found about the ROI of *online* marketing in step 1, so in step 3 we try to look for ROI theory in the *general* marketing field by only using the key words ROI and marketing. The results are again synthesized in a matrix (Figure 4). This time the articles' scope did not turn out to be a useful differentiating factor and has therefore been left out as criterion.

	Topics			*Methods*		
	Need for accountability	Culture of performance measurement	Marketing as accountable asset	Experimental design	Optimise budget allocation	Customer life time value
Peppers & Rogers (2005)	X	X				
Court et al (2005)	X	X				
Singer & Halsall (2002)	X	X				
Clancy & Stone (2005)	X	X				
Almquist & Wyner (2001)			X	X		
Corstjens & Merrihue (2003)					X	
Lenskold (2003)	X		X			
Srivastava et al. (1998)	X		X			X
Berger et al. (2002)			X			X
Schultz and Gronstedt (1997)	X		X			X
Rust et al. (2004)	X		X			X

Figure 4: Concept matrix of the literature search results in step 3

It can be concluded from the number of results that the term ROI is being discussed in marketing literature. Almost all of them address the need for more emphasis on ROI in marketing. The articles differ greatly in the way they provide solutions for this 'accountability problem of marketing' (Schultz & Gronstedt, 1997). Some articles only want to give the reader the insight in the need for ROI and provide guidelines about how to create a "culture of marketing performance" like the first four listed articles in the matrix. Other articles speak in terms of marketing as accountable assets and propose concrete methods. They are briefly explained below.

1. Corstjens & Merrihue (2003) propose a model to optimize budget allocations. They collected information for Samsung, a globally operating Korean electronics company. From every country data was collected such as population details, spending power, market share, competitor metrics, product category growth rates etc. By comparing the current global marketing budget allocation with the actual marketing opportunity, they were able to show current (mis-)allocation of the marketing budget.
2. Almquist & Wyner (2001) provided a method to optimize marketing by performing experimental design. They define experimental design as a method that "quantifies the effects of independent stimuli on behavioural responses, which can help marketing executives analyze how the various components of marketing a campaign influence consumer behaviour." What the authors do is testing the drivers of consumers' behaviour, without having to test every single combination. For example, the tested different price levels in combination with different promotional

slogans, without testing every combination of price level and slogan separately. By doing experiments and applying statistical techniques, one can say something about which combination of stimuli (or drivers) will create maximum returns.

3. Four articles apply the concept of customer lifetime value (CLV). CLV can be defined as "the monetary value of the customer (or group of customers) for the duration of the customer-firm relationship or customer's lifetime" (Rust et al., 2004). CLV is not the value of a customer in some static point of time, but for its total relationship with a firm. While Berger et al. (2002) and Schultz & Gronstedt (1997) only discuss the possibilities for determining the CLV of marketing activities, one article is actually trying to calculate the return. This article from R.T. Rust et al. tries to quantify the impact of a marketing activity on the perception of a customer, which in turn influence the customer lifetime value. The change of the CLV due to a marketing activity is the return of that marketing activity. Lenskold (2003) supports the CLV concept, but argues it is not the only measure that determines the ROI, also the number of customers and marketing expenses have impact. The CLV concept will be discussed more extensively in Chapter 4.2.

2.2 *THE ROLE OF ROI IN MARKETING*

In this section the role of performance measurement and the use of financial returns in marketing is discussed. This is done using literature from the general marketing field, to create a realistic view of how marketers deal with these issues. In the next section the role of ROI specifically for online marketing will be discussed.

Methods to determine the effectiveness of traditional marketing channels have existed for a long time. Marketers widely accepted these methods and focused on their key competence: creativity. As Carol Meyers, Vice President of Marketing at Unica formulates it: "It's common to conduct marketing activities in a state of 'creative chaos', rather than marketing precision"(Peppers & Rogers, 2005). Marketing people tend to focus more on creativity than on measuring. This statement is supported by a survey[2] that concluded "less than 20% of senior marketers have developed meaningful, comprehensive measures and metrics for their organizations."
Marketers usually see spending their marketing budget not as investments, but just as spendings. In other words: they focus on the input side (creativity, concepts), but not on the output (impact, performance, return) of a marketing activity. Not only the marketers are the problem: accountants are not used seeing marketing in terms of financial assets. Schultz & Gronsted (1997) explain: "Most marketing expenses undoubtedly fit the definition of investments: 'expenses made to achieve benefits in the future.' The problem is, accountants are stuck with a 500-year-old double entry bookkeeping system developed in a time when hard assets, such as land and raw material, were the foundation of value creation."

Do marketers nowadays really need to bother about returns? Here are three arguments in favour from literature:

1. *The declining effectiveness of mass advertising*
   Marketing is in a transition from traditional to new marketing channels because of the decreasing effectiveness of mass advertising. While the effectiveness of traditional marketing channels is decreasing, the investments are increasing. To give an example of this paradox, a statement about U.S. automakers can be found in the section below.

[2] CMO Council survey 2007 (www.cmocouncil.org)

> *The "Big Three" U.S. auto makers offer an example of how such spending growth is no longer sustainable. Big Three marketing spending from 1995 to 2000 grew at a rate of 21 percent per year – over twice as fast as earnings growth. During this time the average cost of marketing for each vehicle sold has increased 87 percent, to an average of $2.900 per car. Over the same period, the Big Three's combined market share dropped by more than 4 percentage points, representing $15 billion in lost revenue for 2000 alone. (G. Singer and C. Halsall, 2002)*

Why does this decreasing trend of mass marketing efficiency take place? According to Court et al (2005) there are three developments that support this trend:

- Media proliferation. Traditionally only a handful TV stations existed. This number increased dramatically: in 2005 in the US only more than 1,600 broadcast and cable TV outlets are available
- Multitasking. People perform multiple activities at the same time, like a teenager watching TV, chatting online and doing homework all at the same time.
- "Switching off". Consumers are increasingly selective about what they watch and trust, and are increasingly focused on avoiding contact with marketing activities.

Although TV advertising worked (and still can work) very well for certain FMCG companies, Court et al. (2005) estimate that TV advertising could be only 35 percent as effective as it was in 1990. If TV becomes less effective, other marketing channels should be evaluated. This also means that new marketing effectiveness measures should be used to develop an effective marketing mix.

2. *Growing need for measurement and accountability*
   "Good financial advisers start by asking clients about their investment horizons, growth expectations, and appetite for risk. Marketing investments should start with similar questions."(Court et al. 2005). In order to perform effective marketing, marketing impact must be measurable somehow. Srivasta et al (1998) state: "no longer can marketers afford to rely on the traditional assumption that positive product-market results will translate automatically into the best financial results." Customers and channels must be viewed as assets, and marketing has to create and manage market-based assets to deliver shareholder value.

3. *Outsourcing trend*
   There is a general trend towards more outsourcing of marketing activities. Kottler (2003) concludes in his book 'Marketing Management' that more companies prefer to own brands rather than physical assets. In this way they can focus on their core competence. Through eliminating physical assets (so called decapitalizing) their return on capital can improve dramatically. Also, the whole marketing department can be outsourced, but this has a consequence: some control over the marketing budget spent will be lost. In order to improve this control, the performance of the external parties should be measured. Therefore measurement is an important tool for evaluating external parties in an outsourcing situation.

2.3 *THE ROLE OF ROI IN ONLINE MARKETING*

Companies are looking for alternative channels towards more personalized marketing. The Internet provides opportunities to accomplish that goal. Internet is becoming a popular medium. In the year 2006 71% of the Dutch population had access to the Internet at home, and this number is increasing (STIR Internet Jaarboek 2007). Also, the time people spend online is growing substantially, as can bee seen in Table 2 on the next page. The visitors of a

website came there for a specific reason and the website can provide the visitor with a customized experience suited to the personal goals of the visitor. This is a big contrast with traditional mass advertising: in that case often only a very small percentage of the consumers fits in the target group. Also, those fitting in the target group are not actively searching for a company's services. Of course consumers still need to be triggered to go to the website; this is where TV can still play an important role.

Table 2: Time consumption per media type in The Netherlands (STIR internet jaarboek 2007)

Hours per week	Year 2005	Year 2006	+/-
Watching TV	19.6	18.9	-4%
Listen to radio	22.4	22.4	+0%
Surfing on the Internet	4.9	5.9	+20%
Reading magazines	1.8	1.9	+6%
Reading newspapers	2.8	2.9	+4%
Total	51.5	52	+1%

The trend towards a greater role of the Internet as channel in the marketing mix has implications for the marketing budgets. An increasing part of the budget is allocated to online marketing activities, naturally leading to more attention to the returns in this marketing discipline as well. A Forrester study (2001) found that 90 percent of the site managers believe that measuring the business goals of their site(s) is extremely or very important. But why is it that very few organizations are actually measuring performance? Some possible explanations are (Carroll, 2003):

- The data reside on different systems and this causes issues in the amalgamation of the data to obtain a complete picture of performance.
- Huge amounts of data: people are unable to see the forest for the trees.
- The tools used to generate the data traditionally reside within IT departments, paid for with IT budgets. Often the people who need it, the marketing people, don't receive this information.
- The tools are often designed for IT purposes, and not as decision support systems for marketing.
- There is a tendency to use data that are readily available rather than trying to obtain data that answer key questions.
- Organizations often have a lack of clear definitions to measure site traffic. Measurements based on hits, impressions or page views are often ambiguous and not suitable for drawing conclusions on performance.

In order to determine and optimize returns, some measurement is needed to find out what consumers are experiencing. The book 'Actionable Web Analytics' supports this statement: "We're recognizing that our customers think differently than we do, because we aren't the target audience. All we can do is run tests, measure the results, and adjust our sails."(Burby & Atchison, 2007). Internet provides many opportunities to measure and much of the measurement can be performed relative simply without heavy investments. In the beginning of the Internet era, the measurement of online customer behaviour was limited to counting hits, page views and visits. After collecting these numbers, it can be known for example how many people visited the website. What still is unsure, is if that number of visits is good, or how it can be improved.

2.4 CONCLUSIONS

The importance of measuring effectiveness in marketing is addressed in literature. The importance of measurement is acknowledged as well by marketers, but very few of them

apply meaningful measures for their organization. The literature provides methods to *optimize* ROI of websites and marketing in general, but only one article (Rust et al., 2004) provides a method to *calculate* ROI in monetary units, based on the customer lifetime value concept. Table 3 is an overview of the methods found in section 2.1. From this table it can be concluded that some cells are still empty, representing a lack in literature. The ultimate goal of this research is to fill up the cells on the left. This would mean the answer to the research question: "How can the ROI of online marketing activities be determined and optimized?" In this research we try to find out if the available methods from Table 3 on the right can be used to fill up the cells on the left. If that is possible, then this theory will be used as input in the model that will be proposed. In the next chapter the research method selection and research design will be discussed.

Table 3: Overview of the methods that can possibly be applied to calculate optimize the ROI of branding websites

	ROI, Internet and marketing (step 1)	**ROI and Internet (step 2)**	**ROI and marketing (step 3)**
ROI optimization	-	- Website optimization models	- Experimental design - Optimal budget allocation
ROI calculation	-	-	- Concept of customer lifetime value (CLV)

3 Research Method

In the first section the feasibility of different research method will be discussed and a proper one is selected. In the second section the research method will be applied to this research and the research design presented.

3.1 RESEARCH METHOD SELECTION

A research should be accomplished in a scientifically responsible way. This is needed to make the research a useful contribution to the "body of knowledge", meaning that the results should be relevant, valid and reproducible. Therefore some classical research methods are considered, using the Researcher's Toolkit[3] in Figure 5 below.

Classification of Research Methods: "The Researcher's Toolkit"

Method	Setting	Data Type	Role
Action research	Field	Qualitative	Active
Case study	Field	Qualitative	Passive
Experiment	Either	Quantitative	Active
Non-reactive	Either	Quantitative	Passive
Survey	Field	Quantitative	Passive

Figure 5: Researcher's Toolkit

The researcher's toolkit classifies research methods using three criteria:

- Does the research take place in the field or the lab?
- Is it based on qualitative or quantitative data?
- Is the researcher's role passive or active?

A researcher in a passive role has no influence on what happens in its environment. A researcher in an active role makes a change and observes the results; there is a direct cause-effect relationship.

We try to apply these criteria to this research. The first criterion is obvious in this case: the research takes place in the field. The 'data type' in this research is not easy to define as quantitative or qualitative. Of course web statistics are quantitative, but online surveys are based on qualitative data. Also qualitative data from interviews has been used. The researcher's role in the organization is passive (create model), but as well active (apply model). This leaves three possible research methods: action research, case study and survey. The applicability of these methods is briefly discussed below.

Research method 1: Action research

The idea of action research is to make a change in the research field and observe the results (the impact of the change). By analyzing the results, conclusions and recommendations can be made. In this way research ideas can be validated through testing in practice. The focus

[3] From D.L. Moody, Information Systems Research Method course, fall 2007)

of this research is not the observation as a result of the change made, but instead the design process of this change as such. This means that action can be applied to this research for validating the model to be designed, but not for the design process as such.

Research method 2: Case study
The idea of a case study is to observe a situation in the field and learn from it. In this research the researcher's role is active, because a method has to be designed. The researcher is more a change agent rather than a passive observer. Therefore a case study seems not to be the right choice as a proper research method.

Research method 3: Survey
The idea of a survey is to explain or predict a phenomenon. Since the goal of this research is to create an artefact and not to explain or predict a phenomenon, this again is not a suitable method.

The conclusion so far is that no research method really supports the design process. Only action research could be useful for the validation aspect. This means we have to look further for a suitable research method. This is further complicated because the research activities should be useful for Heineken, but the result should as well be a useful scientific contribution. This problem is also called "the utilization problem of academic research" (Van Aken, 2004). What is a research method that fits this research, and is both practical and scientific? In order to answer this question we look at two complementary paradigms in the information systems research field: behavioural-science and design-science (March & Smith, 1995). The definitions of both paradigms will be given below.

Behavioural-science paradigm
"Behavioural-science paradigm has its roots in natural science research methods. It seeks to develop and justify theories (i.e., principles and laws) that explain or predict organizational and human phenomena surrounding the analysis, design, implementation, management, and use of information systems." (Hevner et al., 2004)

The design-science paradigm
"The design-science paradigm has its roots in engineering and the sciences of the artificial" (Simon, 1996). "It seeks to create innovations that define the ideas, practices, technical capabilities, and products through which the analysis, design, implementation, management, and use of information systems can be effectively and efficiently accomplished". (Hevner et al. 2004)

Instead of focusing on the behavioural-science paradigm as is common in science, we consider "design-science" as a possible research method. In short, design-science aims to create knowledge by building artefacts. Or in other terms: "while explanatory theories tell "what is", predictive theories tell "what will be", and normative theories tell "what should be', design theories tell "how to/because". (Walls et al. 1992). In the next section the applicability of design science in combination with action research will be discussed.

3.2 *DESIGN SCIENCE AND ACTION RESEARCH*

The applicability of design science

Hevner et al. (2004) characterized design-science research by the following properties:

- unstable requirements and constraints based upon ill-defined environmental contexts
- complex interactions among subcomponents of the problem and its solution
- inherent flexibility to change design processes as well as design artefacts (i.e., malleable processes and artefacts)
- a critical dependence upon human cognitive abilities (e.g., creativity) to produce effective solutions
- a critical dependence upon human social abilities (e.g., teamwork) to produce effective solutions

All the properties mentioned above seem to fit more or less the design aspect of this research. For example, at Heineken the requirements are unstable and complex due to the fast changing Internet environment. Complex interactions exist between the subcomponents, because of the many different data sources (see Chapter 5) and the inter-departmental nature of the organisation. The design requirements are not clear from the start, and are likely to change during the development. Creativity is needed, because the solution will not be a choice between existing solutions, but a new model should be created. Also social abilities and teamwork are needed, since the problem and solution are not obvious or structured and affect many people in the organization.

Applicability of action research

Action research is a systematic method for learning from experience and can be applied when the research takes place in a situation characterized by the following properties (Baskervill and Wood-Harper, 1996)

- the researcher is actively involved, with expected benefit for both researcher and organization,
- the knowledge obtained can be immediately applied, there is not the sense of the detached observer, but that of an active participant wishing to utilize any new knowledge based on an explicit, clear conceptual framework,
- the research is a (typically cyclical) process linking theory and practice

Moody and Shanks (2002) add that action research can be applied to (1) test ideas which are designed to solve practical problems and (2) to test ideas when they are in their early developmental stages. In this research, as mentioned, the researcher is actively involved and the research links theory and practice, so using action research to validate the theory in practice can be a good option.

Applying design science in combination with action research

In order to use design and action research as two approaches in one research, we look at the existing literature to see how they can substitute each other. We can immediately see some similarities, take for example the research processes in Figure 6. Both action research and design science use a cyclical process to improve research theory. Also, they both claim to deliver expected benefits for both the organization and researcher. The similarities are sometimes so obvious that one author concluded: "We claim that action research and design science should be considered as similar research approaches" (Järvinen, 2005). Finally, design science and action research both have the same major downside regarding the scientific foundation. Moody and Shanks explain about this: "the lack of generally agreed criteria for evaluating action research further complicates the publication review process. These constraints make the approach a difficult choice for academics tied tightly into the journal system of scholarly communication".

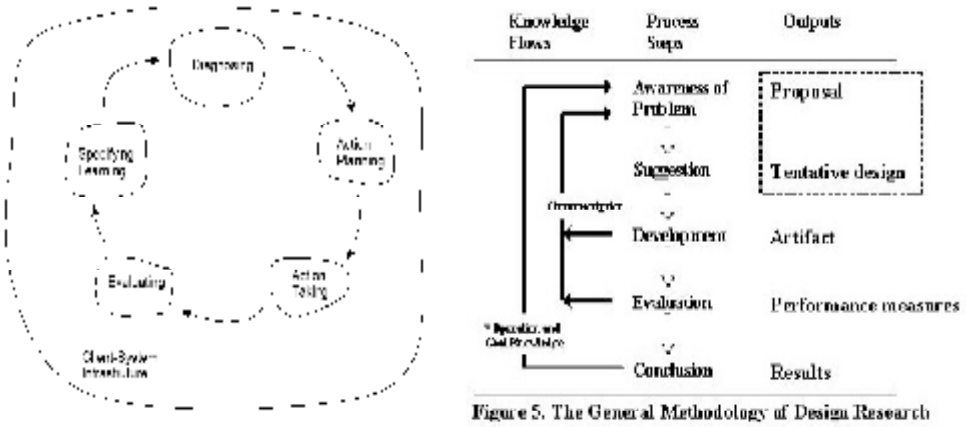

Figure 6: cyclical process of action research (left: Moody and Shanks, 2002) and design science (right: Takeda et al 1990)

Iterative research methods like design science and action research seem to be the best option for this research, but they do have (similar) downsides which should be kept in mind before research conclusions can be drawn.

- Difficulty of generalising result beyond specific cases: like case study research, action research is concerned with single situations, from which it is difficult to generalize
- Research bias: the research sacrifices some level of objectivity in action research by being directly involved in the action
- Lack of control: it is never possible to be sure that the outcomes achieved were due to the intervention and not some other factor.

In the next chapter the actual design of this research is explained, based on both action research and design science.

3.3 RESEARCH DESIGN

3.3.1 Research steps

In Figure 7 the research design is presented. As mentioned earlier, first the definition of ROI, available data and the ROI determination/optimization methods will be discussed. The design of the model is mainly based on design science; action research provides tools for validation. The design phase consists of two cycles. In each cycle the model is applied to a Heineken branding website. To improve the generalizability of this research, two websites with very different consumer target groups are chosen: www.heineken.nl and www.crystalclear.nl. From these applications, conclusions and possible model improvements will be drawn. In the validation phase, action research will be applied to provide guidelines to further improve the validity of the model.

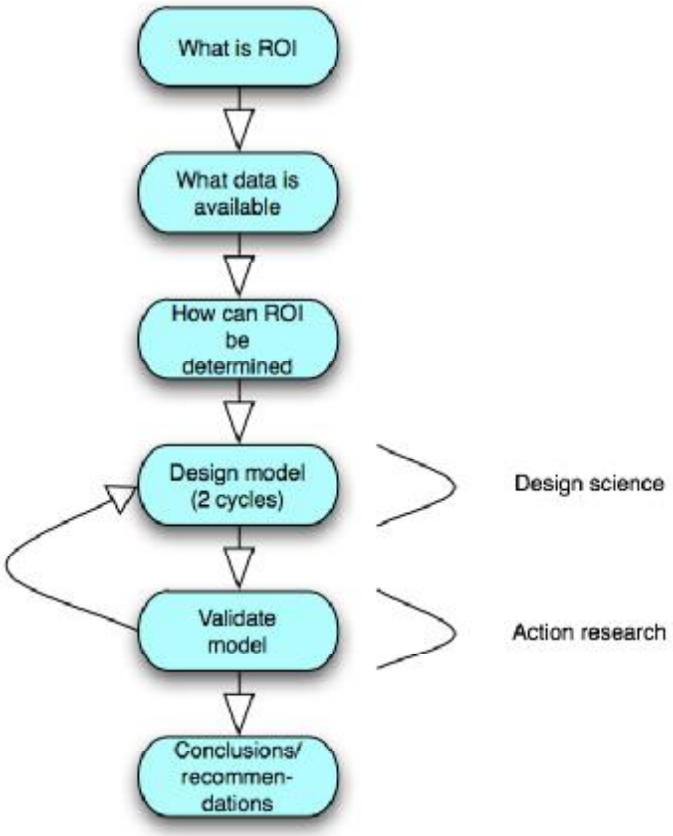

Figure 7: Research design

3.3.2 Research context

The framework below (Figure 8) is based on Hevner's (2004) 'information system research framework' and helps to understand the context of the research. It explains in what environment the research takes place and how it can provide a useful contribution to the 'body of knowledge'. The Heineken environment (left) is the problem area, consisting of people, organizations and technology. The knowledge base (right) provides the knowledge for developing the solution. Examples of this knowledge are scientific papers or books. Both the Heineken environment and the knowledge base deliver input to the research. The research itself (in the middle) consists of development and evaluation stages. The results of the research are (1) the application at Heineken and (2) an addition to the knowledge base, both represented by the two arrows at the bottom.

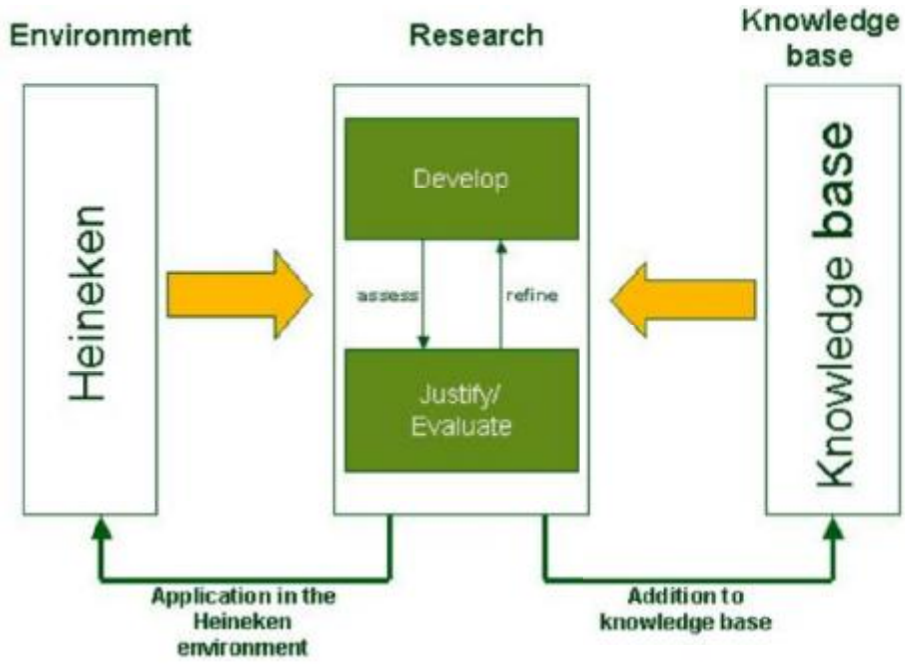

Figure 8: Research framework

4 What is ROI

Before calculating or optimising the ROI, it is important to know what is meant by ROI. Therefore in this chapter the definition of ROI will be discussed, followed by a discussion about the drivers that influence the ROI.

4.1 DEFINITION OF ROI

When is said "let's maximize the ROI of this website", in many cases this person does not mean the financial definition, but he or she just wants the website to perform optimal. But if the monetary return of online marketing activities must be calculated, the financial definition of ROI should be clear.
In general it can be stated that the *business* definition of "return on investment" refers to "the measurement of revenue or profit that a company generates from a specific investment or several investments" (Schultz & Gronstedt, 1997). In other terms: it measures how effectively the firm uses its capital to generate profit.

The most basic ROI formula resulting from the definition above is:

$$ROI = \frac{revenues - investment}{investment}$$

Equation 1: basic ROI formula

Equation 1 is a difficult measure for comparing investment alternatives, since the formula does not take in account periods of time and cost of capital.

The *financial* definition from literature of ROI (generally called ARR: accounting rate of return) is the average annual profits from a project into the average investment costs (Drury, 2000).

$$ARR = \frac{Average\ annual\ profits}{Average\ investment}$$

Equation 2: Accounting Rate of Return

When the average annual net profits are calculated, only additional revenues and costs that follow from the investment are included in the calculation. The average annual net profit is therefore calculated by dividing the difference between *incremental* revenues and costs by the estimated life of the investment. The ARR can be increased by improving the average annual profits or lower the average investment.

The use of ARR is being criticized as a capital investment criterion (Brealey and Myers, 2003), because it can create biases. For example, an accountant can manipulate the number of assets to use as input. Also, the ARR ignores the time value of money; it does not make distinction between a project with early earnings or one where cash flows do not occur until near the end of its life (Drury, 2000). Companies usually use ARR calculations to evaluate the profitability of existing businesses.

It should be considered if the ARR equation is a good measure at all. Therefore other more robust methods can be considered, which are based on cash flows. A classic example is the net present value (NPV). First take a look at the equation of the NPV (Equation 3). This is the straightforward way of determining whether a project yields return in excess of the alternative equal risk investment in traded securities.

Equation 3: Net Present Value

$$\mathrm{NPV} = \sum_{t=0}^{n} \frac{C_t}{(1+r)^t}$$

The NPV equation can be seen in Equation 3 above. C represents the net cash flows in year t. In case of higher spending than earning, like is common in the start-up years, C_t can be negative. The rate of return r is the return available on an equivalent risk security in the financial market. The NPV is a measure often used to choose between alternative investments opportunities.

Lenskold (2003) discusses ROI for marketing and proposes the equation below (Equation 4). Lenskold makes a distinction between the initial investment and the expenses to be made in the future. Dividing the future cash flows (excluding the initial investment) by the initial investment results in a ratio that says something about how profitable this initial investment is. Lenskold explains: "Maximizing ROI is not the same as maximizing profits, but the ROI measurement tool enables valuable decision making at the corporate, department, and campaign level for marketing. The "investment" represents the marketing expense, and the "Net Present Value of Profits & Expenses" represents the resulting flow of profits and expenses, with future cash flow discounted back to reflect the time-value of money." Note that the '&' between 'Profits' and 'Expenses' is in fact a minus.

$$\mathrm{ROI} = \frac{[\text{Net Present Value of Profits \& Expenses}] - \text{Investment}}{\text{Investment}}$$

Equation 4: ROI (Lenskold, 2003)

Equation 4 makes a distinction between the initial investment and the future cash flows. Outside the field of marketing, the initial investment principle is often easy to identify. For example, in case of building a new plant the initial investment is the building of the plant itself, and the operating profits and expenses are the future cash flows. But how can this distinction be made in case of online marketing? 'The website development costs are the initial investment, and the future campaign revenues and costs are the future cash flows?' An advantage of making distinction between initial investment and future cash flows is that it results in a ROI ratio. This ratio can be used to compare returns on investments are not easily compared using monetary values. A major concern is that the height of the ratio depends very much on the definition of the initial investment. Also, equation 4 does not result in an annual return rate, but a single rate for possible multiple periods. This makes it hard to compare to other investment opportunities. NPV equation (Equation 3) does not result in a ratio, but is less biased and therefore a better option to apply than Equation 4.

If the NPV is theoretically the best option, can the NPV be implied to value online marketing projects?
If so, the following data is needed:

- net future cash flows (including the initial investment)
- periods (investment – effect on cash flows)
- cost of capital

The number of years to use in the calculation will be hard to select, because marketing campaigns often are short-term investments, but can cause an impact for a long time. It should be clear how long this impact will last in order to relate it to the initial investment. Also the cost of capital is also hard to determine. In order to identify a cost of capital, the risk of investing in this marketing campaign should be known. The cost of capital is usually based on historical projects with similar conditions; it could be determined when historical online marketing investments are analysed. Until now no major problems occur for applying

the NPV, but the assumptions about cash flows will be harder to make. How can the impact be known (or at least assumed) of an online marketing activity on the cash flows? Therefore the success of the application of the NPV is depending on one aspect: to what extend can the effect of online marketing on future cash flows be estimated.

Out of section 4.1 can be concluded that different measures from the financial field can be used to determine the return of marketing, but there is no one standard ROI equation. This explains the confusing use of the term ROI in theory. Lenskold's ROI formula can be applied, but then it should be possible to identify an initial investment. An initial investment is hard to identify in (online) marketing. ROI is not a well-defined formula, but no more than the definition in words, used in this paper: "the measurement of revenue or profit that a company generates from a specific investment or several investments."
The ARR and NPV are concrete equations that can be used for online marketing project. The choice between these two options depends on the purpose (evaluate investment alternatives or running businesses) and the availability of data. The ARR is suitable for evaluating running businesses, but is biased. The NPV is les`s biased, better suited to choose between different investment alternatives, but requires more detailed input data. To what extend the NPV can be calculated, depends on the availability of information about the future cash flows. This will be discussed in Chapter 5. From now on the term ROI will only be used to refer to the definition in words. In case of calculations, the concerning equation will be mentioned. In the next section the drivers of ROI will be discussed.

4.2 DRIVERS OF ROI

The focus of this research is on the measurement of the impact of online marketing activities. This impact should result in increased brand awareness, ultimately resulting in increased brand loyalty. Investing in a branding website is therefore investing in brand equity. There can be distinguished two views on brand equity (Schultz & Gronstedt, 1997):

- Financial based view: brand equity is the economic value of a brand (as an asset).
- Customer based view: brand is an equity typically defined as the composite of customer awareness and quality perception of a company, a product, or a service and their associations and loyalty to it.

The financial based view considers *brand equity* as an asset representing an economic value. This value can be made visible by the difference between a company's acquisition value and its book value. Another option is using a company's stock value, which can reflect the economic value of the brand. Online marketing, as every marketing channel, contributes to the economic value of a brand. If this increased brand value can be measured in cash flows, it can be used in the equations in section 4.1.
In the customer based view the *customer* can be viewed as an asset to the firm. Rust et al. (2004) explains: "the firm cannot perfectly predict how much an individual customer will contribute to its net worth, but it can calculate the expected value of the cash flows associated with an individual customer based on the customer's characteristics and the firm's planned marketing actions." The same paper provides an interesting conceptual view on the relation between marketing activities and their ROI. This view is visualized in the "marketing return framework", depicted in Figure 9.

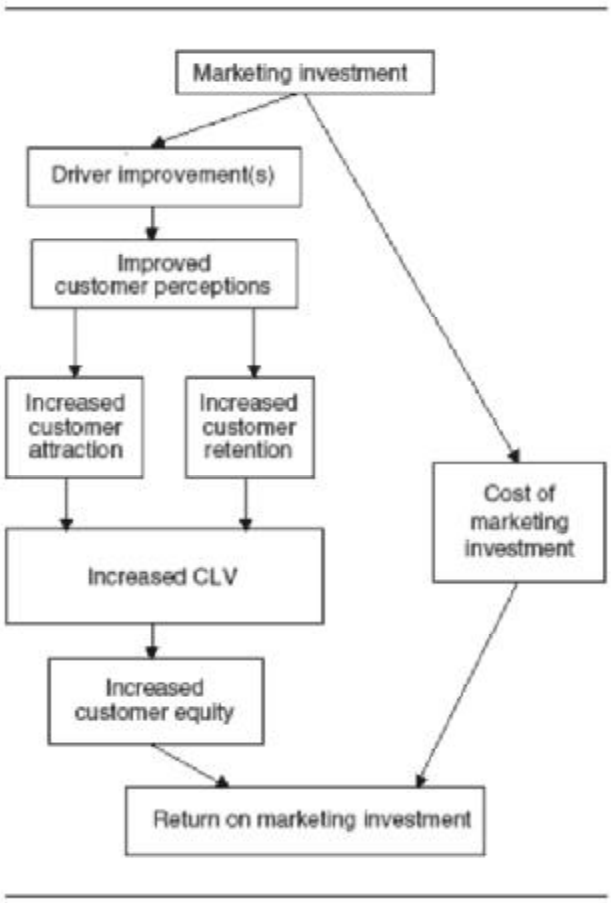

Figure 9: Marketing return framework (Rust et al, 2004)

The framework views marketing as an investment that produces an improvement in a driver of customer equity. In this Figure for simplicity reasons only one driver is visualized. In real life many drivers can exist. Examples of drivers are: price, advertising awareness, service quality and loyalty programs. A driver leads to an improvement in customer perception, which results in more customers (attraction) and more loyalty (retention). Increased attraction and retention lead to increased customer lifetime value, as is proven in the article of Berger et al. (1998). Finally, the increased CLV leads to increased customer equity, finally resulting in a return on marketing investment. The 'increased customer equity' together with the 'cost of marketing investment' are the input to calculate the return. The actual return can be calculated using the financial measures proposed in section 4.1.

Lenskold (2003) has another view in his three-tier framework (Figure 10). The framework visualizes the marketing ROI optimization process. The ultimate goal of a company is to make profits at 'tier 1'. The profits can be maximized by the combination of three subcomponents in 'tier 2': customer lifetime value, total number of customers and marketing expenses. This differs from the perspective of Rust (2004), who argues that only the CLV can increase the marketing ROI. 'Tier 3' provides more details about which performance indicators can be used to measure and optimize the three subcomponents of tier 2. Lenskold also argues that each of the three subcomponents in tier 2 are less effective on their own than when used in combination.

Lenskold's three subcomponents are originally meant for marketing in general, but can they also be applied to online marketing? Below an attempt will be made to concretize the subcomponents for online marketing on branding websites.

1. Maximize the number of customers
In case of branding websites, maximizing the number of customers would mean maximizing the number of visitors. Measures for this subcomponent are conversion, retention and referrals (see figure 10). Sales conversion rates could not be used for online sales, since this is not the core business of a branding website. Other types of conversions than sales should be considered, like watching commercials, joining games, subscribe for newsletter, member get member actions etc. Retention could be measured online by using web analytics software. Referrals can be measured by adding a member-get-member functionality to the website.

2. Maximize the customer lifetime value
In order to calculate the CLV, assumptions need to be made about the future buying behaviour of the customers and the future market conditions. An attempt to make these assumptions for branding websites will be done in Chapter 6.

3. Minimize marketing expenses
It is not very difficult to obtain marketing expenses in a company. The challenge here is to use the expenses in a meaningful way in order to minimize the costs and maximize the results. Since the calculation of the cost per sale is not possible, other ratios should be calculated like the costs per click, visitor, impression etc.

The conclusion of this section is that theoretically the customer-based view is the best option to value a marketing investment. A good measure for the customer-based view is the Customer Lifetime Value. To what extend we can use the CLV measure depends on the availability of data, which will be discussed in the next chapter. Lenskold's framework is interesting, but he does not give a scientific foundation for the framework, nor an empirical proof through a conducted case study. This minimizes the contribution of his ROI theory. At least his insight that more drivers should be discussed to determine/optimize the ROI than just the CLV measure is interesting.

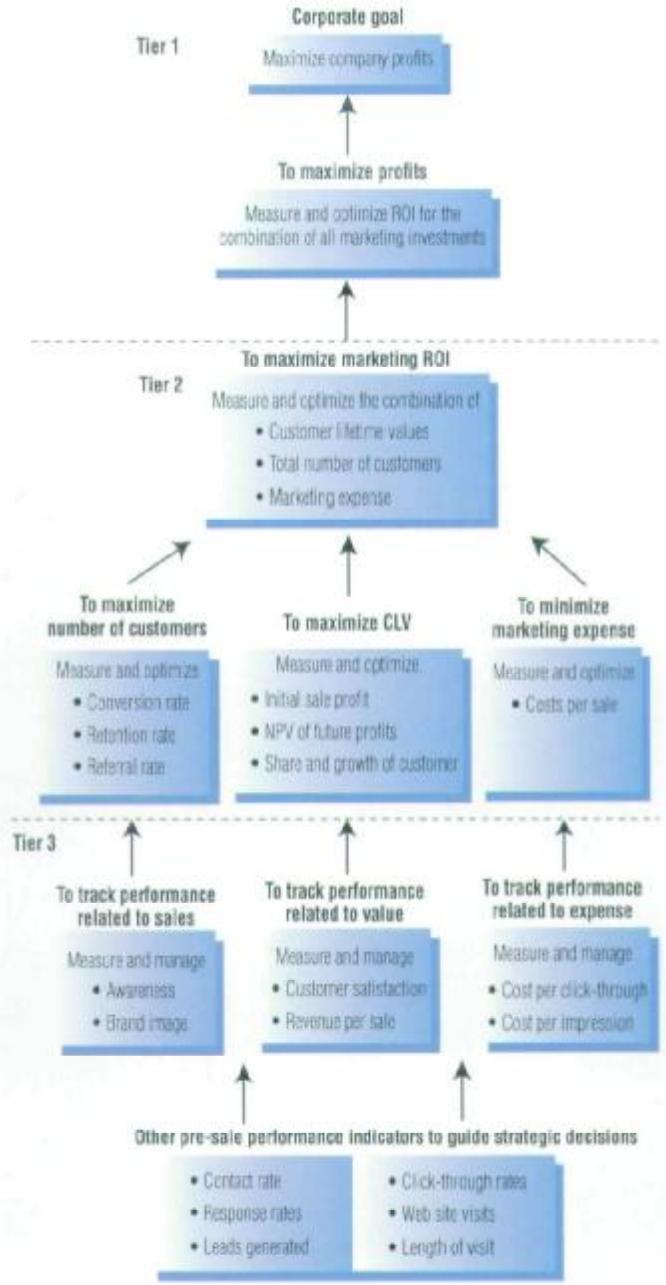

Figure 10: Three tier ROI improvement framework (Lenskold, 2003)

5 Available data

In order to evaluate the performance of a website, some data must be collected. In this section the available data will be discussed. The observation (and data collection) of the online behaviour of website visitors is often called *web analytics*. The definition of web analytics according to Eric T. Peterson (2004) is: "Web analytics is the assessment of a variety of data, including web traffic, web-based transactions, web server performance, usability studies, user submitted information and related sources to help create a generalized understanding of the visitor's experience online". In this research this definition will be used. This definition implicates that multiple sources of data are possible, as long as the data says something about the behaviour of visitors on the website. The techniques to collect the required data to measure can be classified into *behavioural, attitudinal* and *secondary* data (Burby & Atchison, 2007). The different types of data will be discussed below.

5.1 *BEHAVIOURAL DATA*

Behavioural data is based on the actual behaviour of visitors on a website. The technologies to gather the required behavioural data can roughly be classified into two categories *web server log file based* and *page tag based*, and will be explained in the next section.

Short introduction to the technologies:
Technology 1: web server log file based analytics
The first logical attempt to analyze user data from websites was based on data stored in log files on the web server, mainly because this data was stored anyway. A web server log file can roughly be defined as "a text file that is written as activity is generated by a web server" (E.T. Peterson, 2004). The log file contains information about date and time of visit, IP address, source URL, server name, etc. By reading out these log files it is possible to say something about the behaviour of visitors, like the number of visits, time per visit, traffic sources etc. Since this data is normally always available in-house, it is a reliable way to perform basic web analytics. A log file is not designed specifically for web analytics purposes. The available data is in some cases just not sufficient to enable optimal visitor behaviour analysis. This is particularly the case with new web interface technologies like Flash and Ajax.

Technology 2: Page tag based analytics
Page tag based analytics is a different technology. A small JavaScript code is placed on every page within a website. This code refers to a central database. When a visitor visits a website, the browser requests a signal (in fact a .gif image) to a central database. This means that (unlike server log file based) the data is collected on the client side, but stored on a central database. This central database is usually hosted by external parties, offering an ASP (Application service provider) web analytics service. Page tags can cope with all the new technologies. The tags can be placed on the pages that are relevant to tag. A disadvantage is that if the tags are not implemented in time, the information cannot be retrieved afterwards.

The majority of the websites are measured using page tag based analytics software[4], because it enables more advanced analyses. Log file systems are still in use. For example, Heineken is still relying on it. The reason for this is that the server log file is not an advanced data source, but it is reliable because the data is always stored on a local server. The identification of unique users is still a problem for both technologies, but in general the cookie-based method used in page tag based analytics is more reliable. In Table 4 a comparison is made between the two technologies. The choice between the two different tools depends on the requirements, budget and possibly legacy systems. A new type of

[4] http://blog.immeria.net/2008/01/web-analytics-vendors-market-shares.html

behavioural tool is eye movement registration, which is discussed by Smits & Bisschops (2005). Such a tool can be used in a usability study and shows at which part of the screen users focus.

Table 4: Comparison web server log file vs. tag based analytics

	Advantages	Disadvantages
Web server log file based	- Ownership of data: the collected data can be stored on the same network as the website: no need for third parties - Ease of implementation: there is no need to modify the website	- An IP address is a unique identifier for only one session. Also many people are often connected through a single IP address - Browser caching: pages loaded from the browser cache cannot be measured - Also bots and spiders can be registered as visitors, although an advanced data filter may help to avoid this. - Massive amounts of data have to be stored
Tag based	- Flexibility of data collection: only the data relevant for measurement can be collected - Accuracy: measuring at the client side is closer to the user's actual behaviour and therefore more accurate. - More advanced and extensive measurement possible	- Besides an IP address, also cookies can be used as unique identifier. Cookies enable to recognize visitors for multiple sessions. People can sometimes clear their cookies - Data is not stored on a local server, but on a central server at a third party. The website owner does not have full control over possibly critical information. - First time right: only the measured data can be analysed.

5.2 ATTITUDINAL DATA

Data from attitudinal data sources is based on the opinion of the visitor. This data can help to understand the *why* behind problems or specific site behaviour. Data is usually collected by external parties, who are specialized in setting-up the questionnaires and providing metrics analysis.

There are three ways to conduct questionnaires electronically (van Selm & Jankowski, 2006)
- Sending the respondents the entire questionnaire in an email
- Emailing respondents and introductory letter with a hyperlink to the web based survey
- Placing a general request for respondents on a web site

The latter is the most popular method among branding websites in the FMCG industry, since no database with email addresses is needed. Also, a questionnaire on a website can target the respondents at the moment they are entering or leaving a website. The third option is hereafter referred to as an online survey.

An online survey, is a questionnaire a visitor can fill out before or after visiting the website.

This is usually done sample-wise, so not every visitor is bothered by a questionnaire pop-up. The advantages of an online survey compared to traditional surveys can be practical, like more accurate data, fast data collection and reduced costs (Ray & Tabor, 2003). Other important advantages are (van Selm & Jankowski):

- Easy to reach a sample group with special interests, by focusing on websites attracting visitors with this interest.
- Anonymity, which makes people less reserved to give their opinion.

The first advantage is also the biggest disadvantage: while it is easier to find a *specific group* of respondents, achieving a *random sample* of Internet users is problematic, if not impossible" (van Selm & Jankowski 2006). Ray & Tabor (2003) explain a possible bias: "While the population of Web users has been growing dramatically, with broadened gender and age demographics, certain market segments may not be adequately represented among them. The approximate 40% of households without Internet access likely differ in socio-economic and education levels from those online. To use the Internet as a research environment, we have to make assumptions. that the non-online population does not differ significantly in their decision-making ability, and that we can identify a representative sample from among Internet users."

Online surveys on branding websites can cause the following biases.

1. Following from the reasoning in the previous paragraph: it is not possible to create a sample group, which is representative for the whole population (for example, the population of the Netherlands). The fact that a visitor is surfing to a branding website already makes the survey biased. For example, an online survey from Heineken.nl indicated that 54% of the participants drink Heineken frequently, which cannot be representative for the whole population.
2. Even if the goal is to use a sample group that is only representative for the visitors on a website, the respondents can have different characteristic than the non-respondents. It could well be that relatively more unsatisfied visitors fill out the survey, or the other way around: the extremely satisfied visitors. In this way a wrong view will be created of the average website visitor.

The implication of the biases above is that a marketer should rely on the opinion of a group of users not representing the whole population, nor representing the actual visitors.

Something that is hard to measure in an online survey is 'top of mind awareness'[5] (TOMA). In other words: TOMA is the chance of consumers mentioning your brand or slogan as the first one in your branch of industry. Visitors participating in online surveys usually are already aware of the website, otherwise they would not visit, and are therefore a biased sample group. In order to test the TOMA, a control group is needed that is representative for a population. This is called panel research. The use of panel research is common in the TV world, but not on the Internet. The first reason is that the reach of a website, especially a branding website, is often not large enough to create robust statistics based on panel research. Another reason is the (often) relatively low budget for online marketing compared to marketing in general; there is often no money to invest in expensive panel research.

[5] Coen Dekker, Heineken Marketing Intelligence

The textbox below is an example of the online survey at Heineken.nl. This example will give an idea about what kind of questions are relevant for branding websites. These questions can provide very valuable information concerning the visitors. When surveys are performed frequently, trends can be seen in for example the grade given by the participants for the website. More important: the impact of campaigns can directly be measured. By asking characteristics of the visitors, a profile of the average visitor can be made up.

Examples of questions when visiting Heineken.nl:
- What is your reason to visit?
- How often do you visit?
- How did you get to www.Heineken.nl?
- How often do you drink Heineken beer?

Examples of questions after leaving Heineken.nl:
- Did you succeed in accomplishing your goal of the visit?
- What grade do you give to the website?
- Did the website influence your opinion about Heineken beer? How?
- What kind of things are you interested in?

Combining and relating the questions can draw conclusions about:
- Visitors profile (sex/age)
- Drinking habits vs. sex/age
- Interests vs. drinking habits
- Interests vs. sex/age
- Visit frequency
- Traffic sources
- % goals of visit on website accomplished
- Scores (general and per campaign)
- Scores on content en design
- Influence of website to brand value

The survey on Heineken.nl has a response rate of about 20%. This means that from every visitor confronted with the online survey pop-up 20% is participating. Of course the question is if 20% is high enough to be representative. 'High enough' means that it is representative for the target group, but as discussed earlier in this section, it is not possible to create a representative sample group at all. Therefore it is not possible to value the response rate of an online survey, except based on benchmarking and gut feeling. What an online survey can do is indicate *trends*, for example visitor satisfaction and respondents properties. Trends can be used to evaluate and benchmark multiple websites or different online campaigns. Another use of online surveys is providing insight in the usability of the website.

The following can be concluded about this section. Attitudinal data is useful to understand the "why" about online visitors behaviour, but the quality of the results is a problem because of the response bias. The online survey is the most popular method to collect attitudinal data. An online survey is mainly useful to:
- measure trends and the visitor's opinion on the website
- make up a profile of the average visitor

Online surveys cannot be used as an instrument representative for marketing in general, since no representative sample group can be created. Focus groups are uncommon, expensive and not very effective in collecting attitudinal data about websites.

5.3 SECONDARY DATA

Besides behavioural and attitudinal data sources, also other sources can provide valuable data. These kinds of data are called "secondary data". Some examples of secondary data will be given.

Customer relationship management (CRM)
CRM applications provide possibilities to manage the customer database. It can help companies to understand, as well as anticipate to, the needs of current and potential customers. CRM applications are often directly linked to websites and can therefore provide valuable information about the customers of a website. A CRM database enables segmentation based on the properties of the customer. It is, for example, possible to find out how many customers younger than 30 years from Rotterdam like football. This information can be used for personalized online marketing, or as a tool to adapt the website to the actual target group.

Mailing systems
A mailing system can be used to send (batch) emails. This software usually can indicate how successful a mailing is, for example by measuring the open or bounce ratio. How many respondents actually click on a link in the email, and on which links, can be measured on the website. Therefore it is important that the mailing system and web analytics software can communicate with each other.

Content management systems (CMS)
CMS systems often contain valuable information, like member statistics and transactions. Note that in this case the behaviour of the visitor is measured at the server side, while web analytics tools measure the visitors' behaviour in the web browser on the client side. It depends on the situation what the best way of measurement is: information about the visitors' behaviour in general, or about a specific customer? In general can be stated that the first is better to measure with an analytics tool (front-end), the latter with a CMS system (back-end).

Consumer desk
A consumer desk registers all the remarks made about a company, brand or a website. The information system of consumer desks can give information about online customer satisfaction. This information can be used to create insight in the satisfaction of the visitors concerning the website. Consumer desk information can also be used as performance indicator. For example, a certain increase of the number of complaints regarding the website can be a reason for action; there is probably something wrong with the content or technology on the website.

Sales systems
Sales systems can provide information regarding the offline and/or online transactions. It can be interesting to relate the visitors behaviour on the website with the actual behaviour in the shops.

5.4 COMPARISON OF THE DIFFERENT DATA TYPES

Both behavioural and attitudinal data collection techniques can provide very valuable information about the impact of marketing on the customer. The most obvious difference is that attitudinal techniques measure what the visitor *says*, while behavioural techniques measure what the visitor actually *does*. A drawback of behavioural data sources is the chance of response bias. The relations between the different data sources will be explained in the next section.

Relation 1: change and effect function
By using attitudinal methods it is easier to understand what the profile of the visitor is, like sex, age and interests. This can be very useful to check if the intended target group is also the actual measured target group. If this is not the case, marketers should change their online marketing strategy to reach the right target group, or change the target group to the one that is actually measured. The result of this change of strategy can then directly be measured using behavioural data. For example, to find out if the new strategy leads to more visitors, or more website engagement. In this way both methods substitute each other. In the section below an example is given:

> An online loyalty program for a Heineken home draft system was believed to have a target group of young dynamic people, therefore the website was optimized for this target group. On the trendy website great prizes could be won, like flying in a jet fighter or paragliding. By conducting online surveys, it appeared that the actual visitors group were not young dynamic people, but middle-aged family men. After changing the content and prizes on the website, web analytics was used to measure the success of this strategy change. (source: B. Bosma, brand manager Beertender)

Of course there can be thought of other situations where this relation between behavioural and attitudinal data can be useful. Think about the visitors' opinion on certain website content or usability. Both data collection techniques can supplement each other to provide a more complete picture of the behaviour of the customer to optimize the website and/or marketing strategy. This iterative process is depicted in Figure 11 below. Note that it is possible to start in all of the three stages. For example, think of a situation where behavioural data indicates a decrease of subscriptions for a certain campaign. The reason for this decrease can then be found out by asking the visitors opinion. After changing the website, the results can again be observed through behavioural analysis.

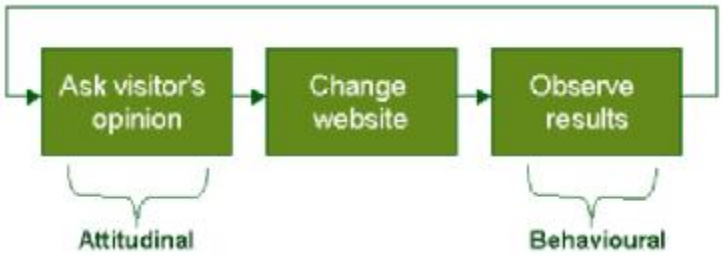

Figure 11: change-effect relation between behavioural and attitudinal techniques

Relation 2: supplementary function
Both technologies can say something about the same marketing activity, for example:

- Campaign success: the success of an online campaign can be measured by asking the visitor's opinion, but also by measuring the actual traffic. Suppose that when the traffic of a campaign is very high, one could think that it was a successful campaign. But the high traffic can also be a result of good promotion in a TV commercial. By also asking as opinion of the user, the quality (attitudinal) of the campaign can be related to the number of visitors (behavioural).
- Navigation: suppose that a marketer is positive about a campaign on his website, but the traffic to this campaign is very disappointing. If the user's opinion on this campaign is bad as well, then the campaign probably is bad. But if the user's opinion on the campaign is good, there must be another reason, like the campaign is difficult to find or badly promoted.

Relation 3: Verification function
Many things that can be measured by web analytics tools, can also be asked directly to the customer. An example is to ask for the frequency of visit, where they come from, or through which website the visitor was linked (a referral). By comparing the same metric from both types of data, the validity increases, as well it can explain the difference between what people say and what they actually do.

Besides the differences between behavioural and attitudinal techniques regarding content discussed above, some more practical differences are important to mention as well:

Difference 1: Costs
In general can be stated that the costs of qualitative online surveys are fixed and higher than behavioural web analytics software. This is because of the amount of manual work that is needed to setup and analyze the attitudinal data, often performed by third partners. The cost structure for quantitative web analytics tools is usually based on a fixed amount per page view. This implicates that the total measurement costs depends per situation/website, resulting in the fact that that online surveys may only be rewarding for high-traffic webites.

Difference 2: Response time
Behavioural data can be observed and analyzed almost real time. Since it is not based on a sample group, but on the total traffic, the conclusions based on behavioural data are faster valid. Also quantitative data is often already in a format that is immediately understandable. Web surveys often need to be evaluated and organized manually, resulting in a presentation by a third party every x months (at Heineken twice a year), resulting in a very long response time.

The conclusion is that there is no answer to the question which data type is best. As Burby & Atchison explain: “Neither type is inherently superior to the other. Just as Macs and PCs have their particular marketplace sweet spots, behavioural and attitudinal data are both great tools. What’s more, when you put them together, the sum is much greater than the parts. “

In this section, possible data sources have been discussed. In the next section will be discussed how much of the ROI can be measured based on this data.

6 Determination of ROI

In this chapter the methods for calculation/optimisation of ROI from literature on online marketing on branding websites will be discussed. Beside the concepts from literature, other possible methods will be discussed as well. Finally, a conclusion will be drawn about which method is feasible to use in the model to be designed.

6.1 APPLICATION OF METHODS FROM LITERATURE

Branding based websites "typically involve experiential content that doesn't directly drive a transaction" (Burby, Atchison 2007). This is the most common website type in the FMCG industry. The relation between online marketing on this type of website and the actual sales is indirect, and therefore it is more complex to measure the ROI. For example, for a website in the automotive industry it is possible to monetize the number of leads to a local sales person. The (chance sales person sales a car) x (profit margin) will result in the average profit per lead. In the FMCG industry the success rate of a lead to a supermarket is hard (if not impossible) to determine. Recall Table 3 in the conclusion of the literature review, now again depicted below as Table 5. In the following sections the methods mentioned in table 5 will be discussed, to start with the only ROI calculation theory: the customer lifetime value.

Table 5: Overview of the methods that can possibly be applied to calculate or optimize the ROI of branding websites.

	ROI, Internet and marketing (step 1)	**ROI and Internet (step 2)**	**ROI and marketing (step 3)**
ROI optimization	-	- Website optimization models	- Experimental design - Optimal budget allocation
ROI calculation	-	-	- Concept of customer lifetime value (CLV)

6.1.1 Customer lifetime value

The concept of customer lifetime value is defined as: "the monetary value of the customer (or group of customers) for the duration of the customer-firm relationship or customer's lifetime" (Rust et al 2004). The same Rust et al. use a Markov switching matrix to model customer retention, defection, and possible return. In such a model, the customer has a probability of being retained by the brand in the subsequent period or purchase occasions. The probabilities of purchasing Brand A and Brand B can be calculated as many purchases out as we choose by successive multiplication by the switching matrix. Multiplying the results by the contribution per purchase yields the customer's expected contribution to each brand for each future purchase. Note that this is for an individual customer. Multiple individual customers are needed to create a representative sample group.
Even if all the information needed to use this CLV calculation methods is available, there is still a need for 'buttons' we can tune to optimize the ROI. This relation between measuring and action is called the 'bridge of actionability' (Palmer, 2002). Calculating the ROI is useful, but more important is how it can help making decisions. In this case the bridge of actionability works as follows. Assume that a firm can identify drivers that influence consumer decision-making and compete for marketing resources in the firm. Examples of drivers are advertising awareness, service quality, price etc. A change in the allocation of the drivers results in a revised Markov switching matrix. The changed switching matrix results in turn into a changed CLV and therefore a changed ROI.

The final ROI formula is shown below. The (discounted) expenditure stream is denoted as E, discounted by the cost of capital. ΔCE is the improvement in customer equity that the expenditures produce. Note that this method is comparable to the NPV method, because it is based on discounted cash flows.

$$ROI = (\Delta CE \quad E) / E$$

The calculations by Rust et al. sound plausible, but need quite some data as input to create reliable assumptions. The following data is needed:

- From interviews with managers can be identified: (1) competing firms and customer segments (2) drivers that correspond to current or potential management initiatives, (3) the size of the market and (4) internal financial information, such as the discount rate and relevant time horizon. Also, estimations should be made of the contribution margins for all competitors.
- The brand switching data in a certain market sector can be collected by doing cross-sectional panel research. An alternative is the use of longitudinal historical panel data. The information to be collected for each surveyed person includes information about the brand purchased most recently, average purchase frequency, and average volume per purchase.
- The drivers should be connected to customer perceptions to quantify the effects of marketing actions at the individual customer level. The calculation of ROI requires an estimate of the rating shifts that will be produced by a particular marketing expenditure. For example, a firm may estimate that an advertising campaign will increase the ad awareness rating by 0.3 on a five-point scale. These data can be obtained by (1) using historical experience with similar expenditures, (2) by trusting the managers' judgements for the estimations, or (3) by using simulated test markets.

If these data requirements would be translated to marketing at branding websites, the following remarks can be made

- The impact of a brand's online marketing investment on a driver needs to be determined. This means that historical online marketing investments should be related to the driver improvements caused by them. This information may be possible to obtain for marketing in general based on historical (survey/panel) data, but probably not specifically for online marketing activities. For example, marketers probably know the effect of a TV commercial on the top of mind awareness (TOPA) of a brand, but do they know what the impact is of an online newsletter or campaign on this TOPA? Then they need to include the online channel in their panel research, which is often not possible to apply because of the limited reach of websites in the FMCG industry, as concluded in the previous chapter.
- Internal financial market data is needed, like the discount rate, spending horizons and contribution margins. It is not likely that a single company can get this information from competitors in a highly competitive FMCG industry, so one should rely on rough assumptions.
- It is possible to ask a visitor's buying behaviour characteristics in an online survey. It is impossible to create in a representative sample group that can provide an unbiased view of the whole market. Therefore should be relied on data from independent market research agencies, which probably cannot provide detailed data.
- Because of the many factors and assumptions, the method is very complex to use as a decision supportive instrument for optimising the Internet marketing channel.

The customer lifetime value calculation method proposed by Rust et al (2004) is a very thorough method, but it also needs very detailed data, even from competitors. A great (if not impossible) challenge is to isolate the effect of Internet on drivers that improve the customer

perceptions. This is needed to estimate the effect of online marketing investments on customers buying behaviour. It can be concluded that the method could be useful for high-level marketing decisions about the allocation of general marketing assets in an open market, but is very hard to apply for online marketing investments.

6.1.2 Experimental design

Amqvist and Wyner (2001) tried to apply experimental design in marketing. Experimental design is statistical technique long applied in other fields. By doing experiments and applying statistical techniques, one can say something about which *combination* of stimuli (or drivers) create maximum returns. This means that no ROI can be calculated, but only an optimal combination of drivers can be selected to create a maximum ROI. Almqvist and Wyner (2001) for example want to test five price points and six slogans of an online mailing. Testing all these combinations separately would take 4 x 4 = 16 test runs. By using a statistical technique called fractional design, a subset of combinations is tested in which the attributes are independent of each other. In Almqvist and Wyner's example, the number of tests to run would go down to 8.

The mailing could be sent in different batches. These kinds of split mailings are already supported by software, so called A/B testing. In A/B tests, two versions of a page are made and tested against one another to see which performs better. Burby and Atchison (2007) add that one of the versions is called the test version, and the other the control version. Ideally, the different test versions only differ one element. In this way the effect of changing one element can be isolated.

There is one major challenge for applying experimental design for branding websites: performance measurement. The article provides examples of campaign alternatives which could directly be linked to the buying behaviour of consumers. In this way, the best combination of stimuli results in the highest profit. The effect on profit cannot be applied for mailings of branding websites. Therefore should be relied on performance metrics used in the field of web analytics. For example, in case of mailings this could be (E.T. Peterson, 2005):

- % opened emails
- % response rate
- clicks per link
- number of unsubscriptions

Conclusion: in case of online marketing activities, experimental design could be used to optimize emails and websites. It has links with the so-called A/B testing. The conclusion is that experimental design could be used to optimize certain online marketing activities, but cannot be used to calculate or optimize the total online marketing returns. The only contribution of the article to this research is the possibility to limit the number experiments to test different alternatives of an online marketing campaign.

6.1.3 Optimal budget allocation

Corstjens and Merrihue (2003), marketing experts from Unilever and Accenture, were challenged to optimise the global marketing budget of Samsung Electronics. The marketing budget is several billions of dollars. At the time, Samsung was selling products in 180 categories in more than 250 countries. The executive vice president of global marketing operations for Samsung wanted to know where they are wasting marketing money and where its resources could be put to better use. They collected information about every country, like population details, spending power, market share, competitor information, product category growth rates etc. By comparing the current global marketing budget allocation with the actual marketing opportunity, they were able to show current (mis-)allocation of marketing budget. The marketing opportunity calculation is not discussed at

all in the article. The only thing the authors mention about the calculations is: “even more important, they (marketing executives) could build predictive models that would help identify where and how today’s marketing investments would yield the highest future returns, based on historical figures)

In Figure 12 the allocation to opportunity can be compared with the ideal situation in this Samsung case. The countries above the diagonal merit an increased share of the marketing budget.

In case of applying such a technique to online marketing activities, the countries would represent the current online marketing investments. To compare the different investments, indicators should be identified which can be applied for every investment. We could think of the current costs, growth rate, reach, brand perception, etc. The problem is at first the potential of the different investments should be identified. What is the growth potential of bannering or buying AdWords? This cannot be translated into hard measures like revenue growth in the Samsung case.

It can be concluded that the optimal budget allocation method could be useful to show the current (mis-) allocation of the global marketing budget, but that is also as far as it gets: is is known how much money each website should receive, but not how to maximize the returns with that money. The concept could be used for a national marketing strategy, but is hard to apply for optimising online marketing investments. Especially finding indicators to compare the different investments and identifying the growth potential is difficult. Without the growth potential aspect, just the idea of benchmarking remains, which will be discussed in more detail in Chapter 7. Because of this conclusion, no further attempt is made to find out the actual calculation used to determine the marketing opportunity.

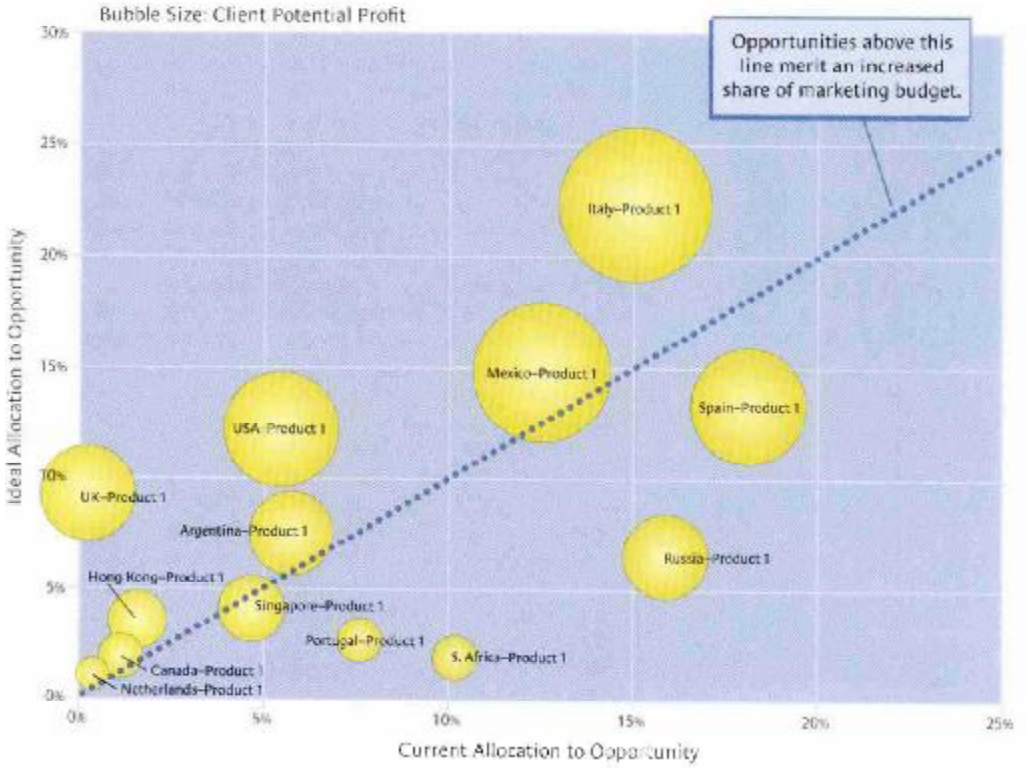

Figure 12: (mis-) allocation of global marketing budget allocation at Samsung Electronics

6.1.4 Website optimisation models

In the first part of this chapter, theory from the field of marketing was applied. In this section we will apply theory from the field of Internet. This theory is based on optimization of the returns of websites, so no ROI calculations are expected here. As mentioned in the literature review, the theory does provide score models, which are repeated in Table 6. The question is if these score models can be applied to online marketing activities. The factors are meant to apply to websites in general or e-commerce websites.

Table 6: Website performance score models

Article	Scope	Dimensions
Merwe & Becker (2003)	e-commerce website	▪ interface ▪ navigation ▪ content ▪ reliability ▪ technology
DeLone & McLean (2004)	e-commerce website	▪ system quality ▪ information quality ▪ service quality ▪ use ▪ user satisfaction
Palmer (2002)	general website	▪ system performance ▪ navigation ▪ interactivity ▪ responsiveness ▪ content quality
Smits & Bischops (2007)	general website	▪ financial perspective ▪ customer perspective ▪ website perspective ▪ organisation perspective

The EC success model from Delone & McLean (2004) in Figure 13 below will now be discussed briefly. The model provides 3 basic quality factors, which should lead to 'use' and 'user satisfaction' by the visitors, ultimately leading to 'net benefits'. In this example the model is applied to the online bookstore barnesandnoble.com. Every factor can be measured by an indicator. Do these factors indicate something about the returns of online marketing investments? Of course it is important that an online campaign is technically reliable, has high quality contents, and should lead to satisfied users. But what are the net benefits of an online campaign? The one stated in the Figure, incremental sales, would be the best one. Together with the details about the concerning investment, the ROI can be calculated. But as explained before, the direct incremental sales due to an online campaign on a branding website is hard to determine. If this model is compared to the 'marketing return framework' (Rust et al., 2004) in figure 9, then it is possible to compare the three factors on the left with the 'driver improvements' in the marketing return framework. The two factors in the middle can be compared with the 'improved customer perceptions'. The factor 'net benefits' can be compared to the 'return on marketing investments'. De EC success model is more general and not specifically meant to calculate the ROI. What it does contribute to this research, is the relation between drivers and their metrics. For example, the driver 'user satisfaction' is measured by the number of repeat purchases. In this way the model provides steering tools: to improve the user satisfaction, the focus should be on increasing the number of repeat purchases.

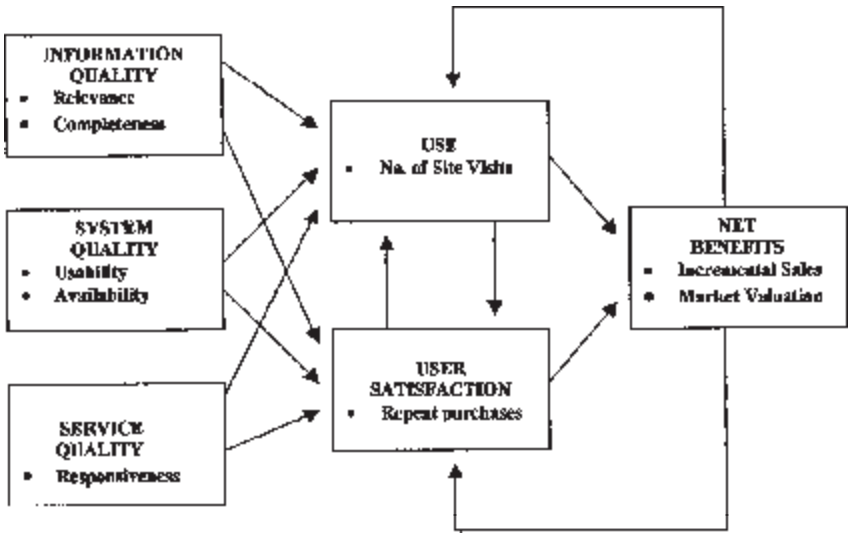

Figure 13: Barnes & Noble.com EC success model (Delone & McLean, 2004)

The Internet Scorecard model (Table 7) from Smits & Bisschops has another approach. This model is based on the balanced scorecard theory (Kaplan & Norton, 1992). The idea of the model is that it classifies website metrics into 4 perspectives, forcing the user to view a website from different perspectives. The 4 perspectives are 'financial', 'customer', 'website' and 'organisation'. The model classifies website metrics into the 4 categories. The financial perspective provides metrics like revenue, cost per new customer, etc. and does not contain useful financial metrics for branding sites. If the EC success model would be compared with the Internet Scorecard perspectives, we see that the 'system quality' fits the website perspective, 'net benefits' can be compared to the financial perspective and the remaining factors fit the customer perspective. The comparison with the Internet Scorecard shows that the EC model lacks the organisation perspective. None of the mentioned methods does provide guidelines for norms to evaluate the actual value of an indicator.

Table 7: The Internet Scorecard

Financial perspective	To what extend does the website contribute to the company's financial results?	▪ Revenues ▪ Costs acquisition ▪ Costs internet operations ▪ Profits
Customer perspective	What should we do to have satisfied customers?	▪ Reach ▪ Acquisition ▪ Visits ▪ Conversion ▪ Retention ▪ Customer satisfaction ▪ Brand awareness
Website perspective	What do we need for a successful website?	▪ Content ▪ Usablility ▪ Design ▪ Technical performance
Organisation perspective	How do we setup the organisation to create a successful website?	▪ Structure ▪ Knowledge and competences ▪ Systems ▪ Tools

6.2 OTHER POSSIBILTIES TO DETERMINE THE ROI

Beside the discussed methods found in literature, in this chapter some more ideas will be given to increase the insight of the return of a website.

6.2.1 Option 1: web only coupons

This option is based on providing visitors online coupons that can be measured at the retail sales channel. Practically this means that the sales person in the retail store has to scan the coupon and send it to the information system of the FMCG company. The number of leads can then be multiplied by the product margin to give insight in the returns, like in the automotive example described in the previous section. In theory this is possible, but companies in the FMCG industry often have many different retail channels. This makes it technically very difficult and also expensive to implement these kind of tracking methods.

6.2.2 Option 2: value the online content

The core business of branding websites is not online sales, but this does not mean that no conversions take place on the websites. Many branding sites offer online content like films, movies and other downloads. Online campaigns often offer possibilities to subscribe, or to join a newsletter. These kind of online activities can also be regarded as conversions. It would be possible to monetize all these conversions, meaning that a certain value is assigned to every conversion that takes place on the website. The problem here is the following: how much is it worth if a visitor plays an online game? Or signs up for a newsletter? Valuing the online content is an easy way to calculate a return, but it is questionable if this return can be valued properly.

6.2.3 Option 3: rely on attitudinal data

Attitudinal data sources like surveys provide very useful information about, for example the brand perception lift. The perception lift shows the influence of a website visit on the brand perception of a customer. The result is for example "before their visit, 70% of the visitor had a positive feeling about brand X, after the visit it was 74%". The website has a positive impact on the brand perception of the visitor, but how much is that 4% increase worth? Monetizing these kind measures based on qualitative information is hard and probably impossible.

6.2.4 Option 4: branding web indicators:

Again the online marketing cannot be related to the offline sales and therefore no monetary ROI can be determined, but the behaviour of customers online can say something about a brand's value. There exist some quantitative indicators that can say something about the brand value. More about branding indicators can be found in Chapter 7.

6.2.5 Option 5: benchmark to websites

If it is not possible to determine a monetary value of the ROI, the least that can be done is benchmarking the available indicators to (1) previous marketing activities of the same website, (2) other internal websites or (3) external websites. The latter is difficult, since this information can be very competitor sensitive. The first and in particular the second are very useful indicators. Especially in the FMCG industry, companies have many different brands. The fact that every brand nowadays has its own website provides perfect opportunities to do internal benchmarking. A variety of data can be benchmarked; behavioural, attitudinal and secondary. The challenge here is to benchmark the right website and the right data to each other.

6.2.6 Option 6: benchmark to other media

One option to measure the relative effectiveness of online marketing is to benchmark it to traditional marketing channels like Radio, TV, newspapers or magazines. It would be possible to compare the reach of for example a TV commercial with the reach of a website and compare the costs per consumer reached.

TV commercials are usually rated by a methodology called Gross Rating Point (GPR). This represents the percentage of the target audience reached by a commercial. If the commercial appears more than once, the GRP Figure represents the sum of each individual GRP.

Example:
- Number of appearances: 12
- Average percentage of target audience reached: 20%
- GRP: 12 x 0.20 = 2.4

Note that the result of the GRP calculation does not say much about the reach: if 20% of the target audience is reached 5 times, the GRP would be 1.0, but the reach is still only 20%. Of course now the question is if GRP calculation can be applied to Internet websites. There are strong arguments against the application of the GPR method on Internet, which will now be explained.
An Internet website does not appear like a TV commercial for a passive TV watcher. Instead, a visitor has to surf to the website. The visitor of a website already knows the brand, or is at least actively searching for certain products or services. In other words: a visitor of a website is already triggered or has a reason to visit the website. The overview (Figure 14) is given to clarify the multiple ways to visit a website. Globally this ways are (1) typed in the URL directly in the browser or (2) referred from another site. The reason for the first way can be that the visitor is triggered by a commercial on TV, or visits on its own initiative.

Visitors can be referred from a search engine or a banner/link placed on an external site. Generally can be concluded that TV has an awareness function, while a website's function is often beyond the awareness phase, more a brand building function. The type of appearance differs. In order to compare, it is needed to specify how many appearances on TV have the same impact as a visit to a website.

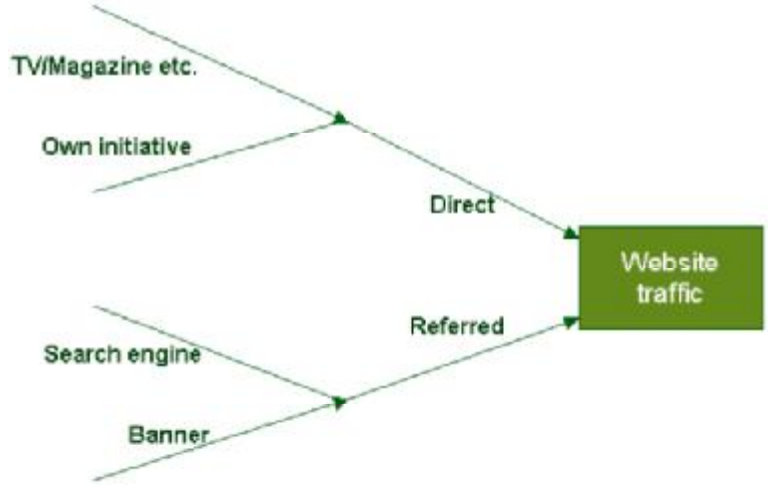

Figure 14: Multiple ways to visit a website

Instead of GRP, it is also possible to focus just on the reach of a marketing activity. Traditional media can provide statistics on the reached target group. The same can be done for a website: behavioural sources can provide the number of unique visitors and attitudinal data can provide information about the composition of the reached group. The reached target group can then be calculated by multiplying the number of unique visitors with the percentage of actually reached visitors in the target group. In order to compare TV and Internet, it is possible to look at the relative costs per person reached in the target group. This can then be calculated by dividing the total costs by the number of persons reached. An example of such a comparison between a TV commercial and a website is given in Table 9

Table 8: Comparison of the costs per reached person between TV and Internet

	TV commercial	Website
Reach of target group	250.000	50.000
Costs	€500.000	€60.000
Relative costs	€2,- /person	€1.20/person

A concern about the numbers in Table 9 is if the experience of a consumer watching a TV commercial is the same as a consumer visiting a website. Or better: do TV and Internet have the same impact on the brand perception? The only way to compare this is by doing research on TV commercials using focus groups and for online campaigns using online surveys. Both methods can measure the impact of the website on the brand perception. A comparison can be made by comparing the percentage of increased (or decreased) brand perception. A point of concern in case of a multi-channel marketing mix is that different channels cannot always be valued separately, resulting in a disturbed measurement. The website can contribute as well to the brand perception in a focus group. Also other occurrences can influence the brand perception and therefore disturb the measurement, think of for example a negative press release. Another point of concern is the possible biased brand perception from online surveys, as discussed in Chapter 5.

The conclusion can be drawn that combining the three numbers in Table 9 can give a rather good view of the differences in commercial efficiency between Internet and traditional media. At least better than just the GRP method used for TV purposes. The three numbers are:
- Reach of target group
- Cost per reached person
- Impact on brand perception

A concern must be made about the validity of the last number in case of a mixed marketing strategy and possible biased survey outcomes.

6.3 CONCLUSIONS

In this chapter theory about ROI calculation/optimisation is applied in case of online marketing activities at branding websites. First theory from the general marketing field is discussed. The conclusions are that the CLV methods is a good method, but is also very complex to use and needs detailed data as input that is hard to obtain in this case. Since the CLV method was the only option to calculate the ROI, the remaining methods are focused on optimisation. Experimental design can only partly be useful to optimise small-scale problems. It can be a helpful tool, but not a complete and robust ROI optimization method. The budget allocation method is better suited for high-level budget decision-making and cannot be applied on just online marketing.
From the field of Internet some website optimisation models were discussed. The models are not specified enough to apply on branding websites, but the categorising of metrics idea can be very useful.
Beside the theoretical model, other possibilities exist to create more insight:
- Benchmarking websites: very useful, especially for FMCG companies.
- Benchmarking traditional channels: a method is proposed in this chapter, but the difference between the impact of a TV commercial or a website on a customer's brand value is not clear.
- Web only coupons: hard to apply in case of many retail channels, which is common in the FMCG industry.
- Rely on survey data: can provide very helpful data, but is biased.

Lenskold (2003) argues that more factors determine the ROI of a marketing expense, like number of customers and minimizing marketing expenses. These are exactly the things that can be obtained by using web analytics and can be included in the ROI model in the next chapter.

The concepts found in theory that will be used for the model, will be discussed in the next chapter.

7 Model design cycle 1

In this chapter first the model requirements will be given. After this the concepts from literature that could be incorporated in the model will be discussed. Finally, a complete design cycle will be conducted, consisting of a design, application and evaluation phase

7.1 MODEL REQUIREMENTS

The model design requirements are identified based on conversations with Heineken employees, since Heineken was the initiator of this research. This was done by having conversations with the marketers and e-business consultant. Their roles and dependencies are already discussed in the introduction, but some remarks have to be made. The classic IS roles are the business user, data analyst and the application developer (DeLone & Maclean, 2004). Using these terms, the marketers should be seen as the end-user, who should finally use the model in the business. The e-business consultants are the data analysts, since they have to interpret the data in the model and translate it into advice to the marketers. At the same time, the e-business consultants are end-users as well, since they have to be able to create the model based on the interviews with the brand managers. The application developer is not included in this phase as a stakeholder yet, since the technical realization will occur later. The technical feasibility is ensured because of the extensive analyses on available data in Chapter 5.
Marketers in general are not IT-specialists and might have difficulties to interpret raw web analytics data. This means that the model should be able to give a meaning to the metrics, so the marketers are able to understand the model and become aware of the website visitors behaviour. The model should as well help e-business consultants and marketers in their decision-making.
E-business consultants should be able to fill in the model based on an interview with a marketer. In the feedback session afterwards the model must be used as a communication paper, this means that both the e-business consultant and the marketer should be able to understand the model.

From the conversations with marketers and e-business consultants the following criteria can be identified, which are explained below.

- Useful
- Easy to use
- Decision supportive
- Normative
- Suitable as foundation for the technical realization

1. Useful
If a model should be introduced into an organization, the people in the organization must somehow be triggered to use it. As for any other IS system, the two criteria from the technology acceptance model (F.D. Davis, 1989) can be applied. These criteria are (1) perceived usefulness and (2) perceived ease-of-use. This requirement is about the first criteria and can be defined as: "the degree to which a person believes that using a particular system would enhance his or her job performance". The e-business consultant should see the use of a system, otherwise he or she is not likely to use it.

2. Easy to use
The second criteria from Davis can be defined as: "the degree to which a person believes that using a particular system would be free from effort". The right balance must be found between the complexity of the model and the effort to use it. Too much complexity would create a barrier for the users, which would reduce the effectiveness of the model.

3. Decision supportive
The model should not only provide information about the return of the website, but should also have a decision supportive function. This implicates that the model should contain steering information for the people who make the decisions, in this case the marketing department. This means that the model should have properties of a decision support system (DSS).
In order to make the model a DSS, there should be a relation between the metrics and the marketing decisions to make. An effective website supports the strategy of the company. But how can be known that a website is in line with the strategy? Decent metrics should be identified that can give insight in to what extend the website supports the marketing strategy. This relation is visualized in Figure 8 below. In order to measure the right indicators, the marketing strategy should be translated into proper website metrics, represented by the right arrow. The website metrics have an indication function, represented by the left arrow, to indicate if the website is performing according to the marketing strategy. The indication function transforms the metrics into *indicators*, which will be the term to use from now on in this research. So in this research there is a difference between the terms 'metrics' and 'indicators': indicators are not only qualitative numbers, but have a steering function linked to the strategy.

4. Normative
If an online campaign attracts 30,000 visitors, how can be known if 30,000 is a good score or not? The model should give some normative indication about the values of a certain metric. In the world of corporate performance management, the use of the balanced scorecard is very popular (R.S. Kaplan & D.P. Norton, 1992). Even the balanced scorecard does not provide norms, since this is depending on the company's situation. Instead the only way to evaluate the performance of a company by using a scorecard is to benchmark it to other companies in the same branch of industry.
In the previous chapter was concluded that particularly in the FMCG industry benchmarking is an effective way to evaluate the performance of a website. The model should provide possibilities to benchmark different marketing activities on critical aspects. In order to make websites comparable, some key indicators that are critical for the evaluation of a website need to be identified. The selection of the right indicators will be discussed later in this chapter.

5. Suitable as foundation for the technical realization
Obviously the model should reflect the functional requirements needed for the technical realization of the model. The final product will be an off-the-shelf software package, a tailor-made solution, or a combination of both. Examples of dashboards from commercial web analytics software and a tailor-made solution can be found in appendix B. The first dashboard is a screenshot from the web analytics software 'Google Analytics', which looks about the same for every website. The second dashboard is tailor-made for the real estate website www.funda.nl.

7.2 *DESIGN ELEMENTS*

The model will not contain the calculation of the ROI based on the concept of customer lifetime value. Although these calculations sound very plausible in theory, it is too complex to apply them in case of branding websites. Since this is the only possibility to calculate the return, now optimisation theories will be considered. The other theories from marketing, experimental design and optimal budget, do also not offer feasible solutions. Therefore only the concepts from the Internet optimisation theory from the field of Internet will be used.

What determines an optimal website? Although theory proposes multiple factors determining the success of websites, these factors are not based on the marketing strategy. From a marketers view, a website is successful if it is functioning according to its strategy.

An advantage of this thinking is that the process of creating the model starts at the business side and not at the IT side. When the business demand from the marketers is leading, the IT solution will be designed to support the business. In this way excessive functionalities can be avoided. The Internet Scorecard (Smits & Bisschop, 2007) can be used to check if the strategy is complete and how certain strategy aspects can be measured, but is not a workable model for optimizing a branding website. Therefore there is a need for a simple to-the-point model that marketers are able to understand and which is helping them making decisions.
The website's strategy is the basis for determining the websites success. This means that indicators should be identified which support the strategy. The Internet Scorecard speaks in terms of strategy, success factors and indicators. The strategy can be translated to success factors, which in turn can be measured by indicators. These indicators should be compared to a target. The action to be taken depends on the comparison of the target and the indicator. This block chart is shown in Figure 15 below, including examples of every block.

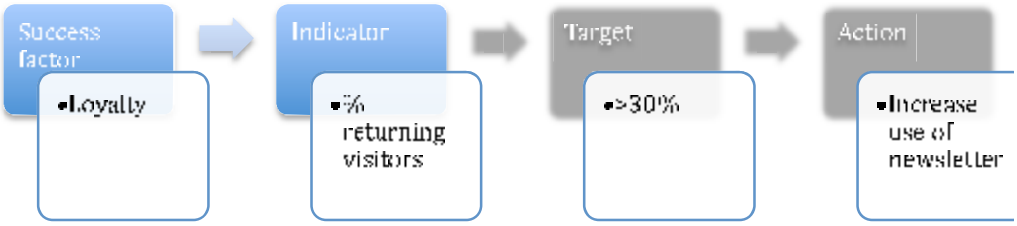

Figure 5: The translation from success factor to action (Smits & Bisschop, 2007)

In this figure (15) the strategy is missing, which can be placed before the success factor block. In the model proposed in this paper, even another step will be used to increase the decision supportive ability. Here the success factors are linked to an activity, which in turn are measured by indicators. This seems to be complex, but the activity is a crucial factor because this helps the end user of the model with its decision about what should be done to improve an indicator. Therefore the block chart in Figure 16 will be proposed. For simplicity reasons, the target and action blocks are eliminated. The click through rate mentioned in the figure represents the percentage of the people who click on the banner, relative to the number of people which viewed the banner.

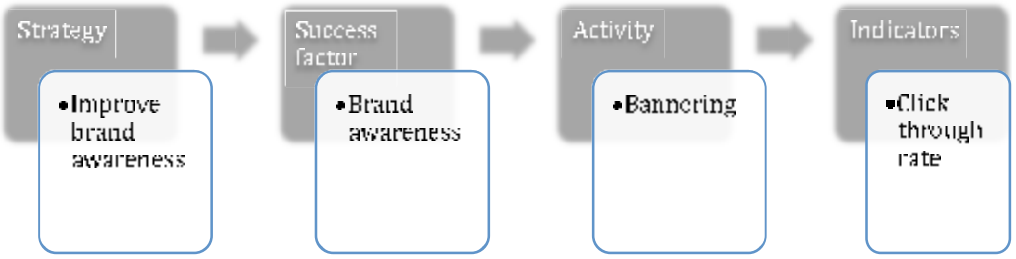

Figure 6: The translation from strategy to indicators

Selection of indicators
At first Burby & Atchison emphasize that the indicators should be measured over time, not just once. If a change is made to a website, it should be determined whether it's driving indicators in the right direction. Burby & Atchison are the only authors who propose indicators for branding websites, namely:

- frequency and lengths of visits
- branded keywords used in search engines
- pageviews/visit
- average time spent

- visitor loyalty (how often visitors return)
- average order value per person who visited branding content compared with those who did not
- customer satisfaction surveys
- brand perception lift studies
- branded searches in search engines
- number of refers to friends (send-a-friend)
- blog buzz: number of brand occurrences in blogs

A recent article in a marketing blog [6] adds to these indicators:

- percentage direct traffic (visitors typing in www.brandname.com in the address bar)
- number of registrations

Note that the proposed indicators are from both behavioural and attitudinal data sources. The exact definition of the different indicators can be found in the concerning literature, especially 'The Big Book of Key Performance Indicator' is a great reference. An official web analytics terms definition reference document is maintained by the Web Analytics Association[7].

Benchmarking

The discussion about other possibilities to obtain insight in the ROI in the previous chapter (6.2) showed that benchmarking to other websites,, especially in a FMCG company is a usable method. This means that the model should support benchmarking. A concern with benchmarking, especially internal benchmarking, it is not clear if the company's best website is also good compared to competitors. This information will probably be impossible to obtain, although one web analytics software vendor (Google Analytics) does support anonymous industry average benchmarking. This service is still in a beta phase and support some basic indicators only (Visits, Pageviews, Pages per Visit, Bounce Rate, Average Time on Site, and New Visits). There exist websites that provide information about the statistics of many websites. Examples are www.alexa.com, www.compete.com and www.nielsen-ratings.com. A complete overview and review can be seen on the website www.antezeta.com. This same website concludes about these website statistics suppliers: "In the absence of anything better, there is a strong temptation to think these statistics might be better than nothing. Yet, numbers derived without scientific rigor are worse than nothing as they provide a false sense of confidence in business decision making, a confidence which lacks a solid foundation based in reality."

7.3 MODEL DESIGN PROPOSAL

The model that will be proposed exists of a (1) model structure and (2) a process description to fill out the model structure. An example will be given to improve understanding.

7.3.1 Model framework

The model that will be proposed is nothing more than a structured overview linking a website's strategy to performance indicators: the model framework. The model structure is presented in Table 10. The relation between the four columns is discussed in section 7.1.2 Figure 16.

[6] http://www.marketingfacts.nl/berichten/20070412_wat_rapporteer_je_in_een_online_branding_dashboard/

[7] http://www.waa.org

Table 9: Model framework

Online strategy	Success factor	Activities	Indicators
Description of the website's strategy	Description of the website's success factors	Description of the activities that support the concerning success factor	The indicators that can value the performance of the concerning activity

7.3.2 Model creation process

Now an attempt will be made to translate the marketing strategy into real indicators. This translation process is based on the process flow in figure 16. The steps are:

1. Conduct an interview with a marketer
2. Write down the online marketing strategy
3. Translate the online marketing strategy into website goals
4. Allocate marketing activities per marketing goal
5. Allocate measurable indicators per marketing activity

The five steps will be discussed below

1. Conduct an interview with a marketer

The success of an interview depends on the skill of the interviewer. The interviewer should give the marketer the opportunity to speak freely about his ideas about the website and his daily activities concerning the website. The experience is that this works better than specifically asking which success factors or indicators he or she likes. The interviewer should translate this story afterwards using the next steps.

2. Write down the online marketing strategy

An Internet marketing strategy can be defined as the approach by which Internet marketing will support marketing and business objectives. An online marketing strategy is part of the marketing strategy, which in turn is derived from the corporate strategy. An Internet marketing strategy should therefore be in line with the strategies on a higher level. To define a strategy a company should answer the questions like "why do we have a website" and "what is the function of our website in our general marketing strategy". The Internet marketing strategy of branding websites is often not directly related to sales, but more focused on improving the customer's brand perception.

3. Translate the strategy into website success factors

In this research success factors are the drivers that make sure the intended strategy works out. Examples are: creating brand awareness, increase customer loyalty, higher merchandize sales, improve customer satisfaction, etc.

4. Allocate marketing activities per website success factor

In this research activities are he practical things that have to be done to fulfil the marketing goals. An example: for the goal "attract visitors" activities can be done like placing banners, sending newsletters or optimise the website for search engines.

5 Allocate measurable indicators per marketing activity

Indicators are needed to see if the performed activities are successful or not. Indicators are web metrics that can tell something about the performance of a marketing activity. The activities are successful if the indicators are positive. These indicators can have different sources of data, as described in Chapter 5. Suggestions for indicators are given earlier in this chapter.

Example
An example of a complete framework is given in Table 11. The strategy explains the role of Internet in the marketing strategy: giving customers a great online experience to increase the brand perception. The statement "increases the brand perception" is supported by the success factor 'brand awareness'. This success factor is linked to activities. All these activities bring visitors in contact with the brand and in this way support the brand awareness among customers.
The indicators should indicate if the activity is performed well or not. For example, in Table 11 a sudden rise in the bounce rate (people leaving the site right after arriving at the landing page) could indicate that the new design of the landing page is not optimal. The model does on purpose not give guidelines about time units (like number of subscriptions *per week*). This will depend on the reporting frequency need of the marketer.

In the next section the model will be tested by applying to the website www.heineken.nl.

Table 10: Example of the first model proposal framework

Online strategy	Success factor	Activities	Indicators
Give visitors a great online experience every time they visit the website, to increase the brand perception of brand X	Brand awareness	Place banners on external sites	- Number of clicks - % conversion
		Send out a newsletter	- Number of emails sent - % opened - % response
		Optimize content & design	- Bounce rate - Average number of pages per visit - Average time on site - Views per sub page
		Lead generation	- Number of subscriptions for newsletter - Number of downloads
	Customer loyalty	Keep visitors satisfied	- Number of returning visitors - Number of complaints

7.4 *APPLICATION HEINEKEN.NL*

7.4.1 Introduction to the website

Heineken is the best selling beer brand in the world. The website Heineken.nl is a branding website exclusively for the Dutch market. Every 6 weeks a new full screen future (a website campaign theme) is launched at the website. A new feature at Heineken.nl means that the website looks completely different. The last 5 features can be viewed. About 80% of the website is filled with these features. The remaining part of the websites consists of a music portal, a merchandising web shop, information about the beer and a link to general Heineken Netherlands company info. Because in this case the company has the same name as the beer brand, this website has slightly different characteristics than the other Heineken branding websites because it also fulfils the role as corporate website.
Besides this portal function, the idea of the website is to give the visitors the ultimate Heineken experience. The visitors should experience the Heineken brand's keywords: *inventive, positive* and *great* (in Dutch: *groots*). Figure 17 is a screenshot of the Euro 2008

Football feature. Heineken is also offering the *Heineken Highlights*, which is a monthly newsletter to promote online and offline Heineken activities.
Data is available from a log file based web analytics tool, mailing system, online surveys, external web shop fulfilment company and the consumer desk.

Figure 7: Screenshot of the Heineken.nl website (18-06-2008)

7.4.2 Application

For this research an interview was conducted with the brand manager of Heineken. The main things the brand manager wanted to know about his website were (1) what the visitors are doing on the site, (2) how long they stay and (3) what they think about the features. For the first two, behavioural data sources can be used. The latter can of course only be measured by using attitudinal data sources.
Table 12 is the result of the application of the model to Heineken.nl. The main success factor of the website is creating brand awareness. This means that visitors should be attracted to the website, and when arriving at the website they should be the best possible Heineken brand experience. The website should be that attractive that customers will visit frequently. Note that data is used from different data sources: behavioural (web analytics), attitudinal (online surveys) and secondary (number of complaints).

Table 11: Model applied to Heineken.nl

Online strategy	Success factor	Activities	Indicators
Give visitors a great online Heineken experience by offering a new online feature every six weeks.	Create brand awareness	Optimise campaign success	- The (extra) number of unique visitors due to campaign - Bounce rate - % conversion - number of publications in blogs - Costs per unique visitor

			- Overall grade for campaign
		Optimise newsletter	- Number of emails sent - % opened - % response - Number of sign-outs
		Optimise content & design	- Bounce rate - Average number of pages per visit - Views per sub page
		Optimise online brand experience	- Change in brand perception after visit (%) - Average time on site - Number of merchandizing products sold
	Create loyalty	Keep visitors satisfied	- Number of returning visitors - Number of complaints

7.5 EVALUATION/VALIDATION

7.5.1 Results from presentation to stakeholders

The principle of evaluation from action research theory is that the stakeholders should evaluate if the outcomes are conforming to the expectations. The stakeholders are the marketers and e-business consultants. The overall opinion was that the model was easy to understand. The fact that the presentation of this model to the stakeholders started an extensive discussion proved that the model is a good basis for discussion. Although the model was received rather positive, some serious concerns can be made:

- The relation between the success factors and the activities was not always clear, for both e-business consultants and marketers.
- The number of indicators is too high to show the marketers. Confronting marketers with this many indicators made them confused.
- The e-business consultants wondered if it is possible to create standard templates for every type of website.

7.5.2 Results from evaluation based on model requirements

The model requirements can be used as expectations.

- *Useful*: the stakeholders definitely saw the use of the model.
- *Easy to use*: the stakeholders have not been filling out the model by their selves; therefore the usability is not tested this time. As shown in the stakeholder evaluation, the model was not always easy to understand.
- *Decision supportive:* the numbers that can be measured in the different data systems now have an indication function. These numbers are transformed from metrics into indicators and now say something about a marketing activity. This supports the use of the model as a decision supportive tool.
- *Normative:* The model does not provide guidelines for setting norms.

- *Foundation for technical realization:* The model is a useful foundation for the technical realization. It shows what data is needed and therefore indirectly shows which data sources should be used. As well it shows the relation between the indicators and the marketing performance, this can give guidelines for the design of the dashboard. The data sources are not explicitly mentioned in the model.

7.5.3 Conclusions

The selection of the proper indicators is very depending on the situation. It could be easy to make standard templates of indicators per activity. It is important to make these templates not the starting point, otherwise there is a great chance that non-relevant indicators are chosen. Wrong indicators can cause unrealistic evaluations of online marketing activities. A big advantage of this model is that the process of creating the model starts at the business side and not at the IT. When the business demand from the marketers is leading, the IT solution will be designed to support the business. The model is validated through testing with the stakeholders at Heineken en by comparing the model to the initial mode requirements. Important issues that should be addressed in the second design cycle are:

- Make the relation between the success factors and the activities more clear.
- Make the model easier to use for marketers.
- Research the possibility of making standard templates for other websites (also non-branding websites).
- Provide guidelines to make the model normative.
- Research the possibility of including the data sources explicitly.

8 Model design cycle 2

In this chapter design improvements will be made to the model, followed by the application on crystalclear.nl. Finally, the model will be validated through (1) testing at the stakeholders at Heineken (2) comparing to the initial requirements and (3) evaluating the model's contribution to science.

8.1 MODEL DESIGN IMPROVEMENTS

8.1.1 Improvements overview

In order to overcome the concerns of the first model, the following adjustments will be made

- The 'success factors' will be replaced by the 'goals'. For the new marketing goals, terms will be used, based on the general lifecycle of a website visitor. The general lifecycle for e-commerce websites consists of *reach, acquisition, conversion, retention* (E.T. Peterson, 2004). In this research the terms are adapted to branding websites: *attract, engage, convert and retain.* The new terms should result in a model which is easier to use and understand by the stakeholders.
- The number of indicators is not decreased, but instead there is made a distinction between the normal performance indicators and key performance indicators. These key performance indicators will also be the basis for the benchmarking function to other websites. Benchmarking will be added, to at least provide some guidelines for setting the norms. Also, in Chapter 6 benchmarking turned out to be the best option to set norms. This benchmarking will be done internally, since competitor information is hard to obtain. The benchmarking options will be discussed in the next sections.
- Standard indicator templates for non-branding websites is possible in a further research, but outside the scope of this research.
- Data sources can easily be included, by adding an extra column to the model. This will not be added to the new model, because it is in contrast with the first improvement of making the model easier to understand. Also, the technical realization can be done afterwards, because the data source is in this phase not very relevant.

8.1.2 Benchmarking

The first question to be answered is which indicators are suitable for benchmarking branding websites. To make a distinction between the benchmarking indicators and the normal ones, the term key performance indicators (KPIs) will be used.
The KPIs are preferably not related to the actual brand market size. It is for example obvious that Heineken.nl will attract more visitors per month than the website of a smaller brand like Rivella Light. This does not automatically mean that Rivellalight.nl is a less atractive website than Heineken.nl. The KPIs that may be suitable to use for benchmarking, will be discussed below.

Costs per unique visitor
An aspect that should be included in the benchmarking function are the costs of a website compared to its performance. Since the conclusion from Chapter 6 was that the ROI could not be calculated, at least the budget should be spent wisely. An online campaign often has a clear goal on the website, like leaving a phone number, subscribe to a newsletter, or print a coupon. Each of these things can be regarded as a conversion. Has the conversion of printing a coupon the same value as signing up for a newsletter? Conversions and conversions are difficult to compare, they therefore cannot be benchmarked to each other right away. A more objective cost benchmarking measure are the costs per unique visitor, because this compares the reach of the campaign with the costs made and therefore measures how effective the marketing budget is spent.

Reach
In general can be stated that the reach of a website is represented by the number of unique visitors. The definition of unique visitors is "the number of inferred individual people (filtered for spiders and robots), within a designated reporting timeframe, with activity consisting of one or more visits to a site. Each individual is counted only once in the unique visitor measure for the reporting period." (Burby & Brown, 2007) In the previous paragraph was concluded that the number of visitors is not a suitable KPI, since it is related to the market size of the brand. A better option is to use a percentage: the percentage of unique visitors reached within a target group. The size of a target group for websites is not so hard to identify; statistics can be used from research agencies[8]. Chapter 5 concluded that it is not possible to obtain reliable data about the profiles of the visitors, based on online surveys. Therefore, also the percentage of the target group reached is not a suitable KPI for benchmarking.

Average pageviews per visit
"The number of pageviews in a reporting period divided by number of visits in the same reporting period" (Burby & Brown, 2007). The number of pageviews per visit indicates how many clicks a visitor performance during a session. The value of the pageviews per visit is very much depending on the website design or technology. For example, a website entirely using 'Flash technolology'[9] only counts for one pageview per visit. Also, a website showing all the relevant information at a single page is not per se less attractive than a website providing information at multiple pages. Because of these arguments, the average number of pageviews is not a suitable KPI.

Average time on site
"The length of time in a session. Calculation is typically the timestamp of the last activity in the session minus the timestamp of the first activity of the session." (Burby & Brown, 2007) The average time a visitor is spending on a website indicates to what extend the visitor is engaged by the website. This is an unbiased KPI, not depending on market size, website design or technology.

% Returning visitors
Returning visitors are "the number of unique visitors with activity consisting of two or more Visits to a site during a reporting period" (Burby & Brown, 2007). The % returning visitors means how many visitors have been visiting the website more than once. Therefore this percentage indicates how loyal the customers are to a branding website. Again a decent KPI.

Bounce rate
The bounce rate is "the number of exits from a page divided by total number of page views of that page" (Burby & Brown, 2007). It indicates how attractive the landing page (the page visitors arrive) is. This is an unbiased KPI, although caution should paid to the use of age checks. The percentage of people leaving due to an age check is not representative for the quality of the landing page.

Click through rate newsletter
Almost all branding websites send out newsletters to attract people to their website. The click through rate is "the number of click-throughs for a specific link divided by the number of times that the link was viewed" (Burby & Brown, 2007). The click-through rate (CTR) of a newsletter means the percentage of the receivers actually clicking on a link in the newsletter. The CTR depends not only on the design, but also on the actuality of the

[8] References for the Netherlands: http://www.cbs.nl, http://www.stir.nl
[9] http://www.adobe.com/products/flash/

database and the goals of the newsletter. In general the newsletter CTR is a useful and relatively unbiased KPI.

The most appropriate KPIs for benchmarking are
- Costs per unique visitor
- Average time on site
- % Returning visitors
- Bounce rate
- CTR newsletters

In appendix C some possible visualization techniques are presented for the benchmarking function. In the next section the model design proposal for the second design cycle will be provided.

8.2 MODEL DESIGN PROPOSAL (2)

The renewed model design consists of three parts: the model framework, the model process and the benchmarking function. The process of creating the model remains the same as in proposal one. The framework is slightly changed and the benchmarking function is added.

8.2.1 Model framework

The framework again shows the relation between the online strategy and the measurable indicators. Instead of success factors, the new framework uses the term goals. The goals are now the same for every website: attract, engage, convert and retain. The goals will now be explained briefly.
- Attract: lead visitor to the website
- Engage: keep visitor on the website
- Conversion: let the visitors do certain activities.
- Retain: customers should come back next time.

The renewed framework is shown in Table 13. Only the second column is changed with respect to the first model proposal.

Table 12: Model framework

Online strategy	Goals	Activities	Indicators
Description of the website's strategy	Attract Engage Convert Retain	Description of the activities that support the concerning success factor	The indicators that can value the performance of the concerning activity

8.2.2 Model process

The process of filling in the model did not change. The result did change, an example of the framework can be seen in table 14.

Table 13: Improved model

Online strategy	Goals	Activities	Indicators
Give certain visitors a great online experience every time they visit the website, to increase the brand perception of brand X	Attract	General feature	- Number of unique visitors
		Place banners on external sites	- Number of clicks - % conversion
		Send out a newsletter	- Number of emails sent

			- % opened - % response
	Engage	Optimise content & design	- Bounce rate - Average number of pages per visit - Average time on site - Views per sub page
	Convert	Generate leads	- Number of subscriptions for newsletter - Number of downloads
	Retain	Keep visitors satisfied	- % Returning vs. new visitors - Number of complaints

8.2.3 Benchmarking function

The benchmarking function will be used to provide norms to evaluate the indicator values. The KPIs suitable for benchmarking are:

- Costs per unique visitor
- Average time on site
- % Returning visitors
- Bounce rate
- CTR newsletters

Practically this results in a comparison like figure 15. The colour coding will be used to stress the winning value.

Table 14: benchmarking table

Bench marking					
	Costs per unique visitors	Average time on site	% Returning visitors	Bounce rate	CTR newsletter
Heineken Crystal Clear					

In the next section the model is applied to the website www.crystalclear.nl.

8.3 *APPLICATION CRYSTALCLEAR.NL*

8.3.1 Introduction to the website

Crystal Clear is a young soft drink brand. The drink can be classified as light sparkling lemonade. The target group are modern confident women between 18 and 35 years old. The current website was launched in April 2008. The goal is to launch a new campaign on the website every 3 months. To give an example, the current campaign is cooperation between Crystal Clear and local retail shops. Visitors can virtually look around in the shops and search for discount labels. When they find five labels, they can print out a coupon and get discount at the retail stores. CrystalClear sends out newsletters to promote the campaigns.

The brand manager indicated that she wanted to offer visitors online campaigns on a frequent base, to create a loyal group of visitors who can identify their selves with Crystal Clear. Important for her is to know how people arrive on the website, what they do and if they come back again.

Figure 8: Screenshot of the CrystalClear.nl website (24-06-2008)

8.3.2 Application

The first part of the model is the framework. The result can be seen in Table 16. Since the website is in fact only a platform for campaigns, the activity 'optimise campaigns' is the most prominent one. Joining the campaign can be a conversion itself but, to create a steerable model, this conversion is placed under "optimise campaigns". The choice of the goals, activities and indicators is subjective and depends on the brand manager. The brand manager should be able to understand the model in order to use it.

Table 15: Model applied to Crystal Clear

Online strategy	Goals	Activities	Indicators
Attract confident young women by offering them interesting online activities, in order to let them identify their selves with Crystal Clear and get interested in the crystal clear products.	Attract	Optimise campaigns	- Number of unique visitors - Costs per unique visitor - Bounce rate - % conversion (join, subscribe, send-a-friend) - Number of referring pages - Top 5 referring pages - Number of announcements in online blogs
		Send out a newsletter	- Total subscriptions - New subscriptions - Number of sign-outs - % opened emails - % response (clicks to websites) - % conversion (join campaign)
	Engage	Optimise content & design	- Bounce rate - Average number of pages per visit - Average time on site - Views per sub page
	Convert	Promote product	- Number of visitors at product page.
	Retain	Create loyalty	- % Returning vs. new visitors

The second part of the model is benchmarking. To test the benchmarking function, Crystal Clear will be compared to Heineken.nl. Note that the used numbers are not the actual numbers because of the sensitive data. The following KPIs will be used:

- Costs per unique visitor
- Average time on site
- % Returning visitors
- Bounce rate
- CTR newsletters

The data is compared for two months, while both websites were running a campaign. See appendix D for the graphs of the weekly number of unique visitors of both websites.
The benchmarking table can be seen in Table 17. The cells in green are the winner in the benchmark. From the benchmarking result, the following conclusions can be drawn:

- The costs per unique visitors do not differ much.
- The bounce rate of CrystalClear is twice as high as for Heineken. Therefore attention should be paid to the content & design of the landing page. Strangely, those visitors staying spend much more time on the website, so it could well be that the loading time is too long.
- The visitors of Heineken.nl are slightly more loyal. This motivate CrystalClear.nl to think about how the website can be adapted to make return.
- The newsletter of Heineken.nl is performing half as good as the one from Crystalclear.nl. It would be useful to compare the newsletters to each other, to check why Heineken.nl is underperforming.

Table 16: Benchmark results

Bench marking					
	Costs per unique visitors	Average time on site	% Returning visitors	Bounce rate	Average CTR newsletter
Heineken	0.87	0:01:08	18.3%	31%	4.5%
Crystal Clear	0.82	0:02:06	16.3%	63%	9%

8.4 *EVALUATION/CONCLUSION*

8.4.1 Results from presentation to stakeholders

The principle of evaluation from action research theory is that the stakeholders should evaluate if the outcomes are conforming to the expectations. The stakeholders are the marketers and e-business consultants. The change of terms from indicators to goals improved the understanding, because these terms are easier to explain. Again two concerns were made:

- The unique costs per visitor benchmark is not fair, because Heineken.nl has more visitors anyway because of its historical greater reputation. Also, Heineken.nl is the corporate website for the Heineken N.V. A solution can be to draw a baseline in the graph, that excludes the visitors that come to the site anyway, regardless the campaign.
- The number of unique visitors may not be fair for benchmarking purposes, but should still be included in the benchmark to create a more complete overview.

8.4.2 Results from evaluation based on model requirements

The model requirements can be used as expectations.

- *Useful*: the stakeholders still see the use of the model, and would use it their selves.
- *Easy to use*: the stakeholders still have not been filling out the model by their selves; therefore the usability is not tested this time. The use of different terms improved the understanding.
- *Decision supportive:* is improved due to the benchmarking function
- *Normative:* benchmarking provides norms, so this is a serious improvement
- *Foundation for technical realization:* the benchmarking function might make the technical realization more difficult

8.4.3 Results from evaluation scientific contribution

The research did not succeed in designing a model to calculate the ROI, but at least the upper left cell in Table 17 can be filled in. This means that a methods is contributed that improves insight in, and provides guidelines for improvement, for the ROI on branding websites.

Table 17: Scientific contribution

	ROI, Internet and marketing (step 1)	**ROI and Internet (step 2)**	**ROI and marketing (step 3)**
ROI optimization	- Branding website optimisation model	- Website optimisation models	- Experimental design - Optimal budget allocation
ROI calculation	-	-	- Concept of customer lifetime value (CLV)

9 Final conclusions/recommendations

9.1 CONCLUSIONS

Marketers acknowledge the importance of measurement, but only 20% of them apply meaningful measures for their organisation. Marketing investments do have the properties of any other investment, but marketers somehow do not focus on the return of these investments.
Literature provides methods to *optimise* the return on interest (ROI) of websites and marketing in general, but only one article (Rust et al., 2004) provides a method to *calculate* ROI in monetary units, based on the customer lifetime value concept. No literature could be found about the calculation or optimisation of the ROI concerning branding websites.

Different sources can be used to collect information about a website. The data sources can be subdivided into attitudinal, behavioural and secondary data. The most common attitudinal data source is the online survey. Although an online survey can provide valuable information about the visitor's profile and opinion, the response bias is a persistent problem. Because of this response bias, no reliable data can be collected about the impact of online marketing on offline sales. The analysis of behavioural data is usually called web analytics. All other data sources, like the CMS, consumer desks, etc, are called secondary data. By combining the different data sources, more advanced analyses can be made.

There is no standard financial equation for the ROI. This explains the confusing use of the term ROI in theory; some authors mean a financial equation, others use ROI only in terms of 'optimal performance'. *The* ROI is no more than a definition in words: the measurement of revenue or profit that a company generates from a specific investment or several investments. In other terms: it measures how effectively the firm uses its capital to generate profit. Different equations can be used to determine the ROI, the choice depends on the availability of data and the subject of the calculation (a running business or investment alternatives).

The only possibility from literature to calculate the ROI, is the concept of customer lifetime value. This can be defined as the value of the customer (or group of customers) for the duration of the customer-firm relationship or customer's lifetime". Although the CLV is a great measure for the calculation of the ROI, it cannot be applied to branding websites. The reason for this is that the effect of online marketing concerning branding websites cannot be expressed in cash flows.

The reach of both TV and websites can be compared, but the question is if a TV-commercial has the same impact on a customer as a website visit. The standard measure for TV commercials, the gross rating point (GRP), cannot be applied to websites.

The designed model is based on website optimisation theories. The model exists of a framework, a process description and benchmarking function. The framework has to be filled out for every website separately, since the strategy and activities on every website differ. This means that no standard template per type website can be created. The model has the following functions:

- It helps translating and relating the website's strategy into measurable indicators.
- It can be used as a decision supportive tool, because the indicators are linked to activities that can be steered.
- It provides norms for valuating the indicators, based on benchmarking.
- It provides the basis for the technical realization of the framework.

The model fills a gap in the literature by contributing a ROI optimisation theory specifically for branding websites.

Research suggestions

- To improve the generalisability of the model, it should be applied (and maybe redesigned) to other types of websites. Examples are content, e-commerce, lead generation and loyalty websites.
- To further improve the generalisability, the model should be tested in other companies than Heineken.
- To further improve the validation of the model, more extensive action research models can be applied based on the empirical validation. (Moody & Shanks, 2003)
- Further research can be done on the implementation of the model in the organisation, and the translation of the model into a technical design.

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11 Appendices

11.1 APPENDIX A

Databases:
-Web of Science (www.isiknowledge.com)
-Scopus (www.scopus.com)

Step 1
Action: search databases with keywords marketing, Internet, ROI

Results

	Results	**Relevant**
Web of Science	3	0
Scopus	15	0

Action: create search key word synonym table

Result

	Field		
Synonyms	ROI	Internet	marketing
	return on investment	online	
	return	web	
	Performance measurement	website(s)	

Action: search databases with synonyms using the search phrases below
Example search phrase step 1 (Scopus):
"KEY(ROI or return or "return on investment" or "performance measurement") AND KEY(internet or online or website* or web) AND KEY(marketing)"
Example search phrase (Web of Science):
"TS=(ROI or return or "return on investment" or performance) AND TS=(internet or online or website* or web) AND TS=marketing"

Results

	Results	**Relevant**
Web of Science	20	0
Scopus	48	0

Step 2
Action: search databases with keywords Internet, ROI (+ synonyms)

Results

	Results
Web of Science	785
Scopus	259

Action: Filter on subject area: business, management and computer science

	Results
Web of Science	207
Scopus	136
Total relevant	12
Forward citing	0
Backward citing	0
Total	12

Step 3
Action: search databases with keywords Marketing, ROI (+ synonyms)

Results

	Results
Web of Science	305
Scopus	426

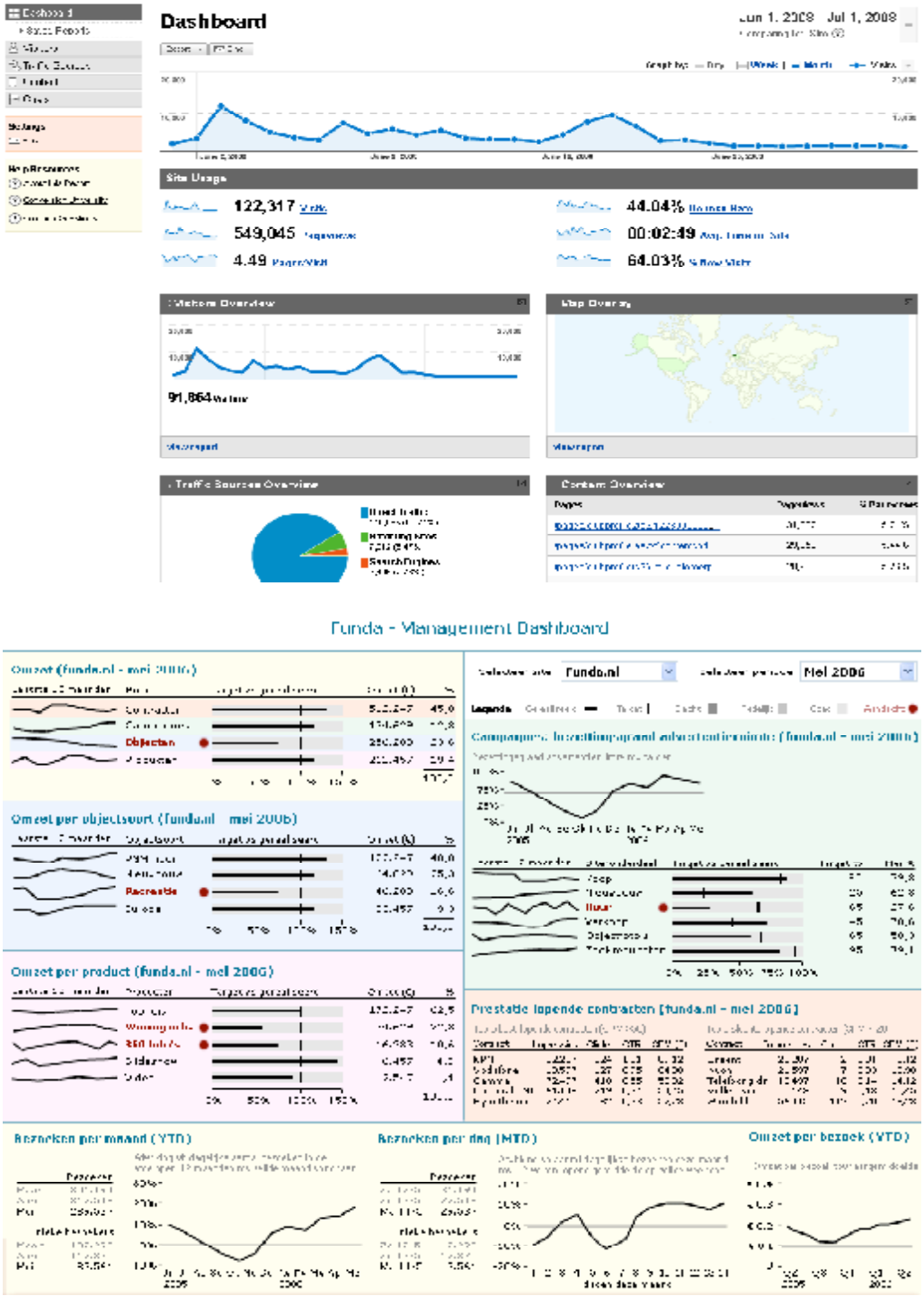
Actions: Filter on subject area: business, management and computer science

Results

	Results
Web of Science	153
Scopus	170
Relevant	8
Backward citing	3
Forward citing	0
Total	11

11.2 APPENDIX B

Dashboards of an off the shelf (Google Analytics, at the top) and a tailor made solution (www.funda.nl, at the bottom).



11.3 APPENDIX C

A spider chart, also known as a radar chart or star chart, is a two-dimensional chart of three or more quantitative variables represented on axes starting from the same point. In Table 19 an example is given of three (fictive) branding websites scored on KPIs. In the lower section the normalised scores can be found. This normalisation is done to make the different KPIs comparable and will happen in the following way: the highest score of a certain KPI receives 100%; the remaining KPIs receive the percentages relative to the highest score. The normative scores are the foundation for the spider chart in Figure 19. Here you can see that for example website 2 reaches the most visitors, but at first glance the website does not look attractive enough because the bounce rate is much higher than for example website 3. In this case the visitors engagement should be improved by changing the content & design. Advice about how to improve the content and design can be obtained by looking at website 3. Of course the benchmarking can also be done none graphical, simply using a spreadsheet with additionally color-coding, as is depicted in Table 20 below.

Table 18: Websites scored on KPIs for benchmarking purposes

Facts					
	Cost per unique visitor	bounce rate	returning vis.	CTR	time on site
website 1	0.87	30%	50%	12,0%	0:01:30
website 2	0.65	40%	30%	11,3%	0:00:59
website 3	1.9	10%	80%	16,0%	0:00:41

Normalized					
	Cost per unique visitor	bounce rate	returning vis	CTR	time on site
website 1	50,0%	75,0%	100,0%	100,0%	100,0%
website 2	100,0%	100,0%	60,0%	94,2%	65,6%
website 3	75,0%	25,0%	100,0%	100,0%	69,5%

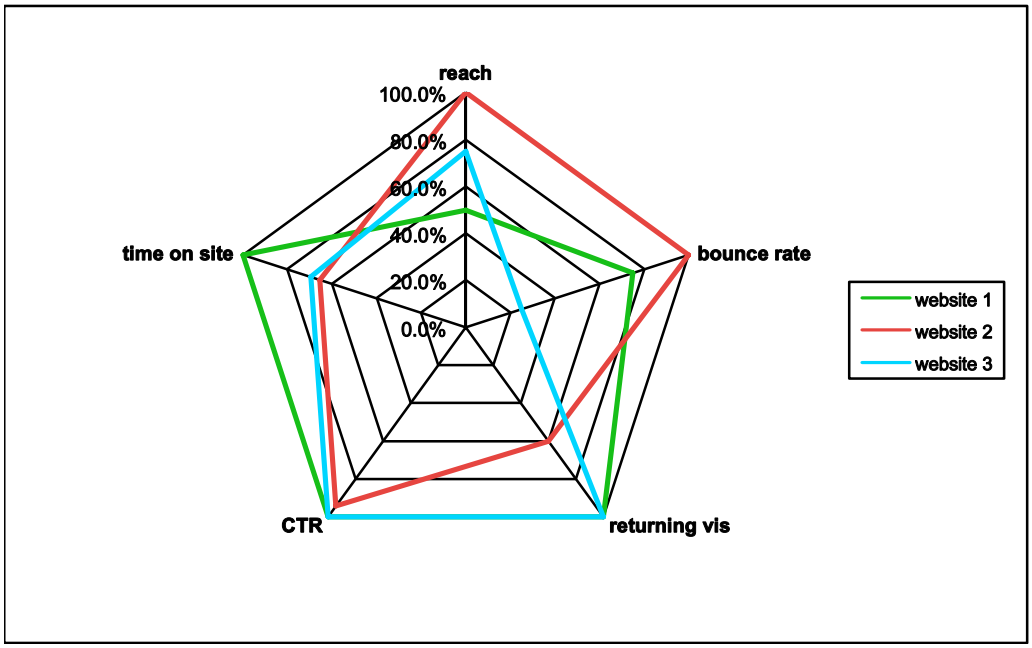


Figure 9: Spider chart for benchmarking websites with the same business model

Table 10: Evaluating benchmarking results using colours: green is best, red is worst.

Facts					
	reach	bounce rate	returning vis	CTR	time on site
website 1	2000	30%	50%	12.0%	0:01:30
website 2	4000	40%	30%	11.3%	0:00:59
website 3	3000	10%	80%	16.0%	0:00:41

11.4 APPENDIX D

Figure 11: Weekly number of unique visitors at crystalclear.nl

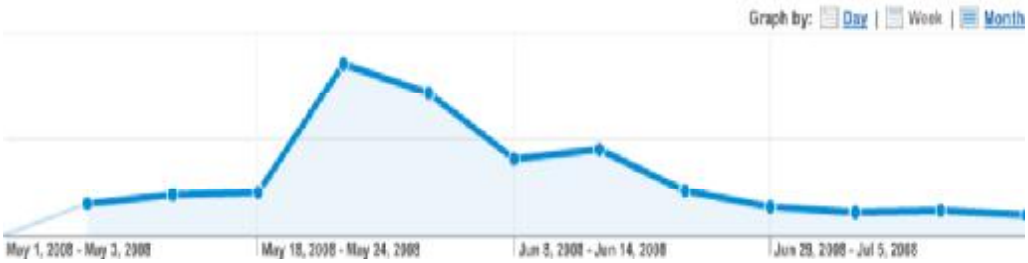


Figure 12: Weekly number of unique visitors at heineken.nl