Improving the Business Processes at Gladior BV

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Improving the business processes at Gladior BV

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There are so many man who can figure costs, and so few who can measure values

(unknown author)

Management summary

This research attempts to find improvement opportunities for the campaign setup processes at Gladior BV, a firm specialized in search engine marketing. Since the foundation of Gladior in the late 1990s, the demand for search engine marketing has grown considerably each year. This led to a focus on growth at Gladior. Over the years search engines have changed much, which complicated the process for setting up search engine marketing campaigns. Besides that, due to these changes the performance of campaigns also became more uncertain.
The changes created over time all kinds of problems in the campaign setup processes. These problems negatively affected customer loyalty and campaign performance.

In this research, improvement opportunities for the campaign setup processes are formulated based on the insight in the course of processes, problems that occur in those processes and the causes of those problems. The processes are analyzed with the use of process management theories suited for analyzing primary processes in service industries.

Theoretical framework

In a literature review several suited process management theories are identified. From the identified theories, 'lean manufacturing' and 'customer participation and service blueprinting' are selected for the analysis of the campaign setup processes. 'Lean manufacturing' focuses on removing non value adding activities from processes. By removing non value adding activities, capacity can be saved. This capacity can be used for executing activities that add value from a customer viewpoint. 'Service blueprinting and customer participation' focuses on improving processes by analyzing the internal cooperation and customer interactions in the service delivery process. This theory is suited for this research because it pays attention to special aspects of the service delivery process and because setting up campaigns involves multiple departments. Several tools are selected from these theories that can support in detecting problems in the current processes. These tools can also support in formulating solutions to those problems identified.

Analysis of the current situation

In order to analyze the processes, interviews with employees were carried out. Besides that, data was collected by observations and by verifying information by employees. Additional information was collected by tracking five orders through the campaign setup process.

The campaign setup processes exist of several steps. First, the order has to be matched with a customer, before keywords can be determined on which the customer should become findable in search engines. After determining the keywords, texts have to be written for these keywords. When the texts are finished, a special webpage can be build for each keyword. Those pages, which are called landing pages, are optimized for generating visitors and customers via search engines. All landing pages together form a campaign. The final step of this process is supporting the customer with implementing the campaign to his website.

In the analysis of the campaign setup processes, several main problems are identified. Most outstanding is a lack of flow in these processes. Besides that, rework occurs due to quality problems in campaign items. Finally the process flow and the quality of the campaign are negatively influenced by poor customer contributions in the process.

After grouping the problems together based on their cause-and-effect relations, four focus area's are created for the solutions. These focus area's are: allocation of tasks, prevention and detection of quality problems, customer participation in the process, and the existence of waste in the internal processes.

Solutions

After the identification of the problems, solutions are formulated for the problems identified in the focus areas. The allocation of tasks can be improved by applying job rotation at Gladior Partner (a department of Gladior) and by applying a highest priority system for determining priorities of tasks. Finally 'visual management' can be applied to improve the clarity about process status and performance.

The prevention and detection of quality problems can be improved by executing processes according to their natural course. Besides that, Poke-Yoka and Peer review can be applied at all process where it is currently absent (and where it is also possible to apply). At those processes Poke-Yoka can (partially) prevent quality problems from occurring, while peer review can prevent that quality problems reach the next process step or the customer.

Customer participation can be improved by educating customer about the business processes in the sales processes, by making appointments with the customers concerning the matching of campaign items, and by using more media rich communication mediums for matching campaign items with the customer. If the customer allows it, Gladior should also implement the campaign instead of the customer. Even though the implementation of campaigns leads to additional work, it can ensure the implementation is carried out correctly. And a correct and complete implementation can positively affect campaign performance.

In order to remove waste from the internal processes, Gladior should improve the transfer of orders from the sales process to the campaign setup process. Next to that, Gladior should also automate process steps in which data is currently entered into a database for the second time.

The main benefits that Gladior can derive from implementing these solutions are:

1. Higher quality campaigns, that have a better chance on a good campaign performance.
2. Less rework on campaign items created in setup process. Due to less rework cost savings and capacity gains can be realized.
3. Less customer demands from customers to analyze campaigns or to implement improvement opportunities to campaigns, because the customer is unsatisfied with the performance.
4. A better quality perception by the customer, due to a better campaign performance and a better experienced guidance at customer participation moments.
5. An increased process flow, due to a decrease in waiting time on customer contributions and better task scheduling.
6. More clarity for employees about task priority and process status.
7. And hopefully: an improvement in customer loyalty.

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Preface

This research is carried out to conclude the bachelor program 'Industrial Engineering & Management' given at the University of Twente. The educational program 'Industrial Engineering & Management' studies the technical aspects of business administration. The bachelor thesis is meant to test if a student is able to apply that expertise in a real business. The research is carried out at Gladior BV, an online marketing firm from Enschede (The Netherlands). This report will elaborate on the research carried out at Gladior.

This assignment is supported and made possible by several people to whom I owe gratitude to. First of all I want to thank the management of Gladior, who made this project possible and who gave me the freedom to carry out the project. Next to that, I want to thank all the employees of Gladior for their support and for making valuable time available when I requested their help. I also owe gratitude to J.J. Stok, a fellow student and former employee of Gladior, for making me familiar with Gladior and their (internal) organization. I want to thank my study counsellor S. Zuidema for getting me in contact with Gladior and my supervisors.

I also owe much gratitude to my supervisors P. Bliek and O.A.M. Fisscher for their support while carrying out the project, and J.N. Hicks, lecturer and research associate of the University of Twente, for sharing his experience, insight and vision on some of the aspects of this project. My appreciation also goes to C.F.M. ter Braack and R. Meijboom for checking this document on language errors. I also owe gratitude to my fellow students J. Jongejan, F.A. Cornelissen and R. Meijboom for their support during this project and for sharing insights about this project. Last but not Least I want to thank my parents for supporting me during my educational career in several ways.

I had a great time during this project at Gladior, in which I saw and learned a lot about business and management in practice. Due this research I was able to make an important step forward in my personal and professional development. I hope that my project and this report are useful for Gladior, and support them in the realization of their ambitions.

Enschede, September 2008

Michel Bieze

1. Introduction to Gladior and the Research Approach

Gladior B.V. is an online marking firm specialized in search engine marketing. Search engine marketing focuses on promoting websites by improving their visibility in result pages of search engines. The overall aim is to generate more visitors and to boost the number of online sales, leads, and company image.

Search engine marketing is a relatively new form of marketing, which was introduced in the Netherlands in the end of the 1990s. Since that time the search engine marketing market has grown considerably each year. This led to a focus on growth and attracting new customers among search engine marketing firms.
Since the end of the 1990s there were also many changes among search engines. Not only is the current search engine market dominated by other players, but search engines also have become more advanced in determining search results. This changed search engine marketing from a simple trick to a professional form of marketing. As a side effect this increased the time required for setting up and maintaining search engine marketing campaigns, the amount of required customer participation, and the variance on campaign results increased. Where in the past high positions in the result pages of search engines almost could be assured, positions are now more dependent on uncontrollable factors. So while the efforts in setting up and maintaining a campaign have increased, campaign results have become more uncertain.

The business focus of Gladior is to expand their customer base, by attracting new direct customers as well as expanding their reseller channel. The main focus is currently put on expanding in the Dutch market. But Gladior also has aspirations for international expansion. Gladior opened a German sales office for serving German customers. Even though Gladior and some of their resellers experience themselves as rather successful in attracting new customers (in the Dutch market), Gladior and their resellers are on the other hand struggling with a high contract cancellation rate. So they experience problems with binding customers to them for a longer period.

In order to improve customer loyalty this research focuses on improving the campaign setup processes. It is expected that these processes contain many improvement opportunities, especially concerning the quality of the campaigns and the time required for setting up campaigns. Higher quality campaigns lead to better results. Besides that it can also decrease the campaign maintenance that is required afterwards. Eventually it is expected that the outcome of this research can support Gladior in binding customers for a longer period to them.

This first part of this chapter will provide a background to Gladior and the current challenges in the organization. The second part of the research will provide some background to those challenges and introduce the research approach of this research.

1.1. Description of the business

This section provides some background to Gladior by describing the history, products and markets, organizational structure and the organizational strategy of Gladior.

1.1.1. History

Gladior B.V. is a relative young enterprise, located in Enschede (the Netherlands). The history of the company goes back to 1998, when Peter Schinkel started a sole proprietorship called Siteserve. After Peter Schinkel came in touch with Marcel Disberg, owner of a web design firm, they decided to start up a professional search engine marketing firm. This led to the foundation of Gladior in 2000, one of the first professional search engine marketing firms in the Netherlands.

In 2000 Gladior offered search engine marketing campaigns to direct customers. In 2001 Gladior also started distributing their campaigns through resellers. Currently Gladior has forty employees, around seventy resellers and over a thousand active campaigns.

1.1.2. Products and markets

Gladior offers several services related to search engine marketing. Their main specialization is search engine optimization. Search engine optimization is focussed on generating visitors via the natural results in search engines. This service is offered to customers by landing pages. Landing pages are additional pages for a website, which are optimized for search engines on relevant keyword combinations. When a visitor uses such a keyword combination in his search query, these pages should be shown high between the results. In order to achieve high positions, landing pages should be build according to the latest search engine guidelines and best practices. Otherwise the page can be excluded from the search engine, or might not achieve high positions. It is expected that the lower the ranking of a page between the results, the less visitors it will attract.

Landing pages used in a search engine optimization campaign are also optimized for generating conversions. A conversion occurs when a visitor performs the desired action presented on the page. Examples of conversions are ordering a product, putting an information request, or following a link to other relevant information.
Search engine optimization is offered to direct customers and to customers of resellers. Gladior has over one thousand active search engine optimization campaigns. This service is offered in a subscription form, with a contract period of a year.

An example of a search engine marketing campaign is exhibited in figure 1.1. This page is shown at the first position on the result page for the keyword combiration 'film huren' (rent a movie). When the visitor clicks on this result, he "lands" directly on the page created by Gladior. At this page the visitor can directly rent or stream movies.

Figure 1.1: Example of a search engine optimization campaign

Search engine advertisement

Another service provided by Gladior are search engine advertisements. This are paid advertisements that are presented above or at the right of the search results. In these cases the search engine like Google is paid to show the advertisement at certain (combinations of) keywords. The pages used for search engine advertisement also have to be optimized for generating conversions. The difference between search engine optimization and advertisement is exhibited in figure 1.2.

This service is mainly sold to direct customers of Gladior. Most resellers setup these campaigns by themselves for their own customers. Gladior has about fifty active advertisement campaigns. This service is offered on a subscription basis or on a budget basis. Contracts on a budget basis have to be renewed at the moment the budget has been completely used.

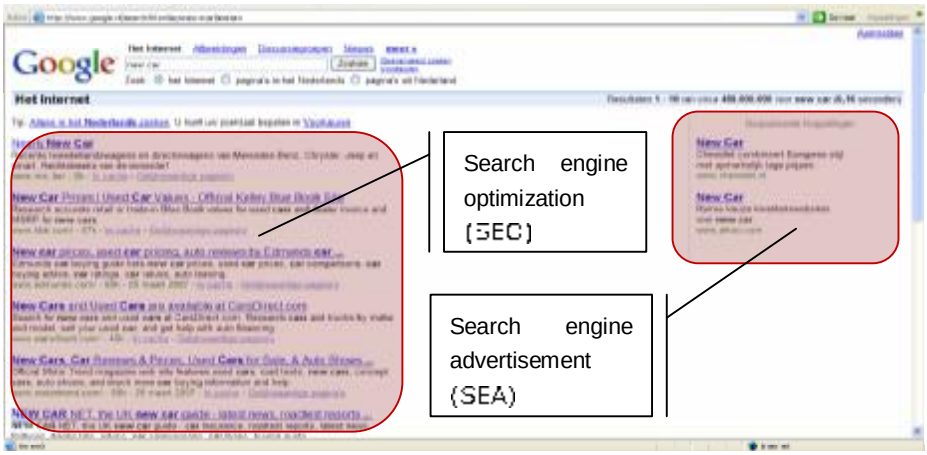

Figure 1.2: The difference between SEO and SEA

Other services provided by Gladior are primarily additional to search engine optimization. Gladior for instance offers consultancy about how customers can improve their website concerning search engine friendliness and optimization, in order to further boost performance of the campaigns.

Customers of Gladior

The customers of (resellers of) Gladior are companies that want to improve the visibility of their website in the search engines. Gladior and most resellers focus on serving small and medium sized firms located in the Netherlands. But Gladior and some resellers also serve some customers from Germany, Belgium, United Kingdom, Poland, France, and Italy. Gladior differentiates themselves from competitors by focusing on automation. For instance process steps of the campaign setup process and campaign monitoring are automated. Due to the automation Gladior experiences cost advantages compared to competitors, which makes the service is especially suited for small and medium sized firms. Due to the automation Gladior also can collect relatively much information about their campaigns, which makes it easier to detect trends in (changes in) campaign performance.

Search engine marketing is attractive for many companies because it is a form of pull marketing. The visitors attracted by the are already searching for (information about) a product of service. Therefore this form of marketing is demand driven; which is the essence of pull marketing. Search engine marketing also allows for micro targeting. Campaigns in search engines can be targeted to persons that are having a specific problem, or search for a specific brand or product. As a consequence, the total marketing costs per order or per sale are much lower compared to traditional forms of advertisement.

Market characteristics

The search engine marketing market can be considered as very dynamic. Since the foundation of Gladior the market has changed a lot. Due to changing guidelines of search engines (for determining the ranking of the search results), Gladior regularly has to update their technology.

The market for search engine marketing is relatively young and immature. This has as a consequence that customers have little knowledge about search engine marketing, especially concerning the selection of providers, the participation during campaigns, and the assessment of results. On the other hand the knowledge level is growing steadily.
The market has a high growth rate. The expected market growth rate in the period 2007 until 2010 is between 25 and 35 percent a year. This growth rate also has negative influences, because due to the market growth rate the number of campaigns increases, which increases the number of pages competing for positions for specific keyword combinations. That implies more efforts in order to obtain results, which leads to a lower return on investment on campaigns.

Competition in the market

In the Dutch market there is relatively little to no competition between search engine optimization providers, because the demand is growing faster than the supply. There are relatively little professional search engine optimization firms in the Netherlands. Search engine optimization is relatively knowledge and labour intensive. Both knowledge and experience are considered important in setting up good search engine optimization campaigns. In the Netherlands there is a shortage of employees specialized in search engine optimization, which makes it hard to attract personnel. On the one hand this creates a disadvantage concerning capacity problems, while on the other hand it forms an input barrier for new players.

In the Dutch market the competition between search engine advertisement providers is increasing. The knowledge required for search engine advertisement campaigns is relatively easily accessible. Next to that, there is relatively little capital required for setting up a search engine advertisement firm. Due to that there is a proliferation of search engine advertisement firms in the Dutch market.

For the near future it is expected that the search engine marketing market will remain dynamic. Not only due to changes in search engines, but also because the role of internet in live becomes more important and the internet population will become more and more a reflection of the demographic composition (Blacquière, 2007). As a consequence online marketing will offer the same possibilities for targeting market segments as offline marketing. Because the role of internet is expected to become more important in our lives, people will spend a larger percentage of their time online. Advertisers are expected to anticipate on that by increasing their online marketing budgets, which are for instance used for search engine marketing. That will result in an increase of the number of pages competing for positions for specific keyword combinations, which will make it more challenging to obtain good campaign results.
It is also expected that because internet becomes more important in our lives, users gain more skills in searching information online. Due to the improved skills users might use more (multiple) searches using more specific keywords. As a consequence insight in customer behaviour will become more important in order to successfully target campaigns towards specific customer or customer segments.

1.1.3. Organizational structure

Gladior makes together with the firms Innovadis and Gladior GmbH part of a holding called Striction. Innovadis is a company specialized in internet & data applications, while Gladior GmbH serves the German resellers and customers of Gladior. All companies in the holding are located in the same building and share the staff departments: system administration, human resources, administration, and finance.

The organizational structure of Gladior exists of three layers: board of directors, coordinators (middle management), and employees. The board of directors exists of two members: the founders Peter Schinkel and Marcel Disberg. The middle management exists of three members, a coordinator for each department of Gladior.

Gladior is divided into two parts: 'Gladior Direct' & 'Gladior Partner'. Gladior Direct is the direct sales channel of Gladior, and is responsible for attracting and maintaining direct customers. Gladior Partner is the supplier of technical part of search engine marketing campaigns for resellers and Gladior Direct. Gladior Partner is responsible for the technical setup of campaigns, technical maintenance of campaigns, and innovation of search engine marketing.
During the research, plans were created in order to juridical split Gladior Partner and Gladior Direct in 2008 to make the organizations independent. From then on, Gladior Direct will be an official reseller of Gladior Partner, meaning that they officially have to purchase campaigns and support like any other reseller.

Gladior Direct – non technical part of campaigns

Gladior Direct is directed by the sales coordinator and exists of a 'direct sales' and a 'campaign management' team. The 'direct sales' team is responsible for attracting new customers. The 'campaign management' team is responsible for setting up new campaigns for customers, customer relationship management with existing customers, and for maintaining campaigns. The campaign management team was created in May 2007, during the period this research was carried out.

Gladior Partner – technical part of campaigns

Gladior Partner exists of a research & development (R&D) department and a quality & service department. Both departments are directed by a coordinator.
The quality & service department is responsible for technical part of setting up new campaigns (building landing/advertisement pages), evaluating campaigns, providing technical support and education to resellers, and acquiring and maintaining resellers.

The research and development department is responsible for developing new tools and software for (automating/improving/evaluating) search engine optimization, automating process steps, and analyzing search engines and the influence of algorithmic updates on campaigns (organisatiestructuur, 2006, company document). A visualization of the organizational structure can be found in figure 1.3.

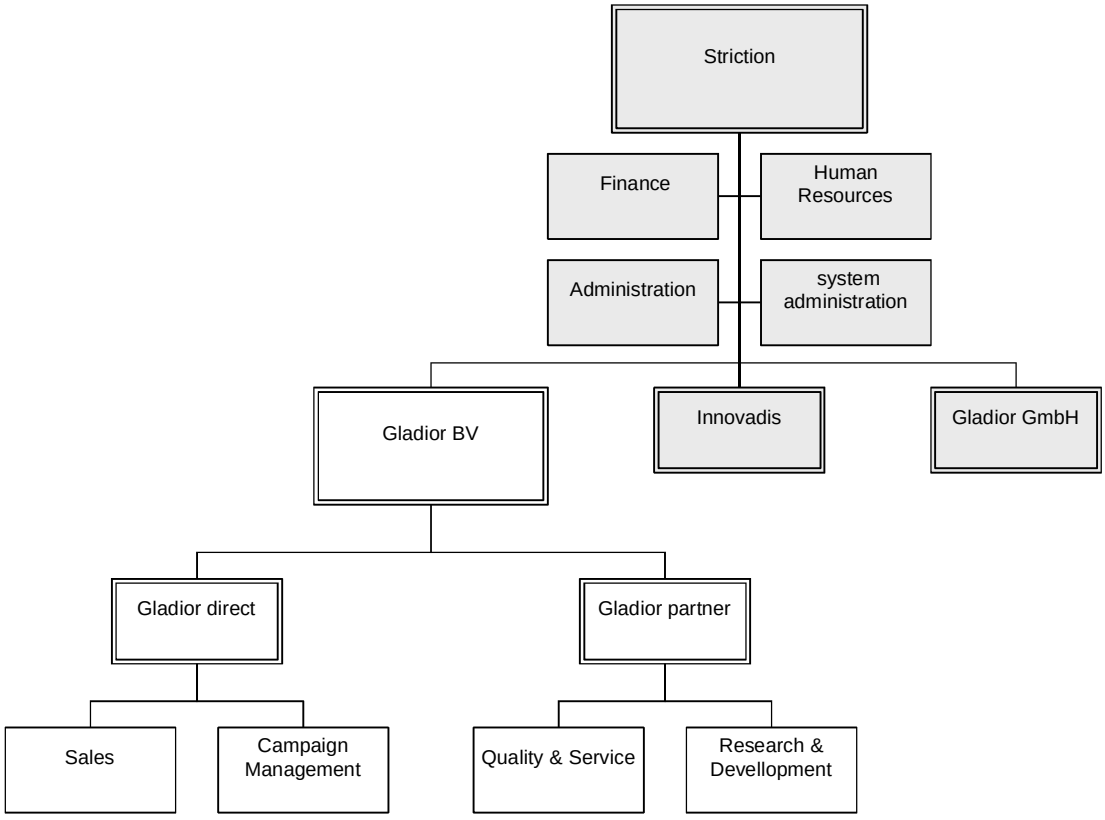

Figure 1.3: Organizational structure of Gladior

1.1.4. Organizational strategy

The mission statement describes the basic business scope and operations of the organization (Daft, 2003). The mission statement of Gladior is:

> *We facilitate organizations with the realization of their marketing objectives by means of deploying online services.*
> *Our drive is to create success for our customers by continuous development and daring to take chances*

Gladior Direct aims at making direct customers as successful as possible by supporting them in acquiring new customers. The focus of Gladior Partner is making resellers as successful as possible. Since best practices in search engine marketing develop rather quickly and Gladior attempts to differentiate themselves from competitors by automation, developing innovative tools and techniques in the field of search engine optimization is considered as very important.

Gladior their overall intention is to grow. Gladior Direct want to grow by attracting new customers and by expanding campaigns of existing customers. Gladior Partner wants to grow internally by developing additional search engine optimization services and tools (that can be sold to new and existing customers of resellers), and grow externally by attracting new resellers.
Besides the mission statement and a overall intention, Gladior had not formulated their organizational strategy at the time of this research.

The previous section introduced Gladior. The next section will introduce the research approach of this research.

1.2. Research approach

This section introduces the research approach of this research by discussing the background of the research, the research objective, research questions and the limitations of the research.

1.2.1. Background of the research

The original research description Gladior for this research concerned an analysis about how Gladior could successfully expand to the German market. Since the foundation of the German department Gladior experiences challenges concerning successful serving that market.

Initial research

In order to analyze if a research about successfully expanding to German could make a relevant contribution to Gladior their operations, an initial research was carried out. For this initial research two meetings were planned with the employees of Gladior GmbH to discuss the current challenges and problems the German department is coping with. Besides that, one meeting was organized with the management of Gladior to discuss why Gladior would like to expand internationally and what challenges and problems are currently experienced by the Dutch department. To conclude the research, additional interviews were executed with employees from all functions to verify the opinion of management and to find some background for the problems and challenges currently experienced by Gladior. In annex 1 an overview can be found of the interview questions and respondents of this interview. Were relevant, additional conversations were carried out to verify new identified information.

Customer loyalty problems

The employees of Gladior GmbH indicated that the German market is a couple of years behind compared to the Dutch market, especially concerning online sales and the attitude towards online marketing. On the other hand they indicated that some German online marketing firms attempt to acquire new customers by rather aggressive sales techniques. Based on those reasons they experienced search engine optimization hard to sale in the German market.

The management of Gladior indicated that they expect the Dutch market has much growth potential the coming years. They indicated that the current customer growth rate is around 40%, while the contract cancelation rate is around 30%. These numbers are calculated by dividing the number of new customers (or contract cancellations) in a year through the number of customers at the beginning of the year. That implies that even though many new customers are attracted the actual company growth is only around 10%.

Based on that information the question was raised if this research could not better contribute towards improving customer loyalty. An improvement in customer loyalty can boost the overall growth rate. Acquiring a new customer is expected to be more expensive than retaining a existing one, due to sales (team) costs and the relative time intensity of setting up new campaigns compared to maintaining existing ones. Besides that, customer loyalty is also expected to be an important predictor of future organizational success (Kandampully, 1998). Based on those arguments it was decided together with the management of Gladior that this research should contribute to the customer loyalty of the Dutch customers.

In order to find a research focus, the remaining part of this section describes the most important causes of the customer loyalty problems identified during the initial research.

Poor campaign performance

According to the vision of the employees the high contract cancellation rate is mainly caused by poor campaign performance. A poor campaign performance is the most indicated reason by customers when cancelling their contract. Most customers determine the result by the percentage of keywords that have a top ten position in Google. The focus is put on Google because that is search engine that dominates the Dutch market. On the other hand, most customers with relative much keywords that have a top ten position in Google are easy to retain.

Three reasons are identified that negatively influence campaign performance. These reasons are: poor campaign setup and maintenance, a long campaign start up or adjustment period, and problems concerning customer and reseller participation.

Poor campaign setup

Poorly setup or maintained campaign has only a small chance to obtain top ten positions in Google. A campaign can be poor due to wrong keyword selection, poor landing pages, poor texts on the landing pages, or a poor implementation of the campaign on the customer their website. But also the website of the customer influences the campaign results, since the (technical) strength and search engine friendliness of the website determines for a part the success of the campaign.

Long campaign start-up period

The second indicated reason for poor campaign performance is a long campaign start up period. The complete campaign start up period takes on average between four to six months. This includes the time required to obtain reasonable positions in the search engines. During that period the customer pays for his campaign, but he does obtain any results (since no visitors can access the pages via the search engines). So, during the first contract year the campaign results are heavily compromised.

The campaign start up period can partially be influenced by Gladior, resellers and the customer. Partially it is also depends on the time Google requires to include the landing pages in the search results. The period that can be influenced by Gladior and the customer currently can take between one till three months. According to employees opportunities exists to decrease the time span of that period. The shorter that time span, the longer the period over which the campaign obtains results, which can make it easier to retain the customer.

Customer participation problems

The last indicated reason is poor customer participation. Sometimes indistinctness between Gladior Direct and the customer exists. Since the actual quality of the campaign depends on both the customer, the reseller (or Gladior Direct) and Gladior Partner, that can lead to poor or late contributions. This indistinctness especially occurs for determining keywords and campaign implementations.

Additional causes

Next to the underperformance of campaigns, employees also indicated capacity problems (or challenges), poor communication with customers and resellers, and poor quality improvement processes as reasons for low customer loyalty.

Capacity problems

The long campaign setup period and the underperformance of campaigns are partially caused by capacity problems. Employees experience that setting up campaigns requires a lot of time. As a consequence limited attention can be paid to campaign maintenance, even if the campaign performance draws back. The main reason for the focus on setting up new campaigns are related to the high growth rate of the market and the growth aspirations of the company. In consequence many new customers are attracted for which new campaigns must be build, which decreases the attention for existing campaigns.

Poor communication with the customer

According to employees customers are relatively unaware of the campaign performance. Besides that, customers are unaware of the actions they have to perform during the campaign setup. Sometimes customers also indicated that they are not satisfied with the communication of Gladior towards them.

Underlying to this problem is also the immaturity of search engine marketing. For most new customers it is their first search engine marketing campaign, which makes it hard for them to determine what results to expect. So poor management of customer expectations can also be an additional cause of poor campaign performance (from a customer viewpoint). Besides that, due to that poor communication customers might also be unaware what is expected from them during the campaign setup or maintenance process.

Poor quality improvement processes

Last but not least, poor quality improvement processes might also influence high contract cancellation rate at Gladior. In the current quality improvement processes, quality problems are not registered. Most problems are not solved on a structural basis, but only on an incidental basis. The same accounts for questions from customers, which are answered on an incidental basis. By preventing those problems and questions on a structural basis time can be saved. Next to that, it might also improve the customer perception of the service.

An additional problem is that most of the professionals have many knowledge about how a campaign can be setup best, while this knowledge is not incorporated in the campaigns. It is expected that when this knowledge is incorporated in the campaign, that would lead to better results.

A synopsis of the identified causes of the high contract cancellation rate, together with their cause-and-effect relations, is visualized in figure 1.4. This figure is based on the "*probleemkluwen*" method (for analyzing and determining cause-and-effect relations) as described by TSM business school (1998).

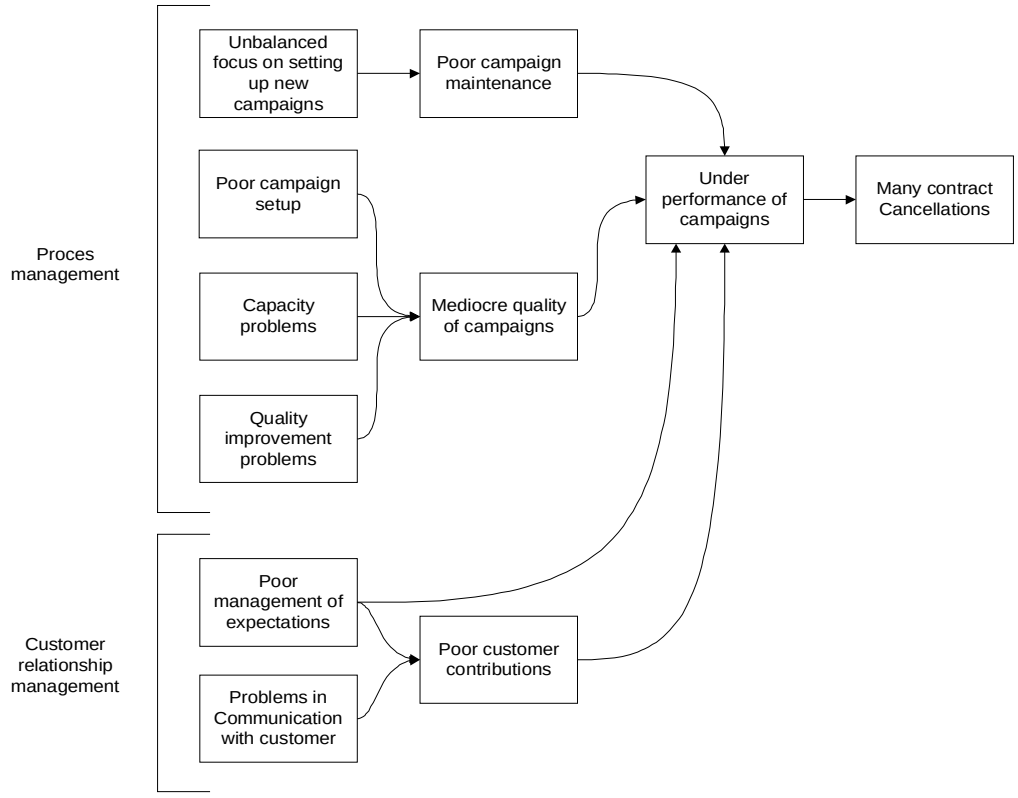

Figure 1.4: Cause and effect diagram

1.2.2. Research objective

The previous section described the background to the problems experienced at Gladior. This section introduces the objective of this research.

Based on the identified problems in the background of the research, several options for further shaping the research are identified. The problems identified in the background are based on employee and management perceptions, but not verified by additional research concerning for instance customer and reseller satisfaction. In order to test the reliability of findings, a customer satisfaction survey can be carried out.
On the other hand the assumption can be made that employee perceptions are reliable enough to accept the identified problems. Most employees have contact with customers in their daily work. Besides that, Gladior has a retention programme for customers who cancelled their contract, so that at least the reason for the contract cancellation can be discovered. In that case this research could focus on improving process management or customer relationship management, because in those fields the root causes of the problems can be found (see figure 1.4 and section 1.2.1).

Research focus

After discussing the findings from the initial research with the management of Gladior, the decision was made to focus this research on improving process management. Campaign performance is assumed to be positively correlated with customer loyalty. The current business processes are also expected to contain many improvement opportunities to structurally improve campaign performance. It is also expected that improvements in process management will have a higher contribution to the company their operations than a customer satisfaction research or an improvement in the customer relationship management.
The question arose if a customer satisfaction research will lead to new findings, and if so how reliable those findings actually are. The management of Gladior also considers improving customer relationship management not the first essential step in improving customer loyalty, because the quality of the interaction with the customer also depends on the business processes. The effects of an improvement in customer relationship management on customer loyalty can still compensated by poor business processes. A long campaign setup time, poor campaign maintenance and underperformance of campaigns can still create a negative quality experience by the customer, even when much attention is paid to customer relationship management. Last but not least a research focussed on process management could also contribute to the desired split between Gladior Direct and Gladior Partner, because more clarity is provided about the business processes and the possibility that these processes can operate independently from each other.

Selection of primary processes

After the decision to focus this research on improving business processes the question arose on which processes to focus. Section 1.1.3 indicated the most important processes per department. This research can focus on all processes or only on the campaign setup processes, campaign evaluation processes, campaign maintenance processes, or customer support processes.

In the selection of the primary processes R&D processes and sales processes are not considered. R&D processes are not taken into consideration because the initial research did not indicate problems that partially could be solved by improving R&D processes. Next to that, applying process management in R&D processes can have a negative effect on innovation output (Benner & Tushman, 2003).

Sales processes are not taken into consideration because these processes can probably better be analyzed using customer relationship management theories. In a business-to-business context the sales processes should form the basis in creating a long-term relationship with the customer, and not only focus on winning as many (individual) orders as possible (Ford, Gadde, Hakansson & Snehota, 2006). Besides that, based on the problems identified in the initial this research should focus on improving processes where the campaign performance can be influenced most. The assumption is made that the campaign performance can be influenced more in the campaign setup, evaluation or maintenance processes than during the sales processes.

From the indicated processes it was decided to focus this research on the campaign setup processes. It is expected that these processes contain many improvement opportunities. Besides that, the performance of campaigns can be influenced most at these processes. When campaigns are setup right at once rework can be prevented, both directly (because customers do not request any adjustments) and indirectly (due to a better campaign performance less evaluations and improvements are required). It is believed that such improvements can result in a better campaign performance and in capacity gains. Those capacity gains can be used for carrying out campaign maintenance and handling customer support.
Since search engine optimization is the main service provided by Gladior, this research will exclusively focus on search engine optimization campaigns.

The research objective formulated for this research is:

Making recommendations aimed at improving the campaign setup processes.

In order to make recommendations about ways to improve the campaign setup processes, theories from quality management and process management can be used for describing and analyzing the processes and for indentifying improvement opportunities. In literature quality management and process management can be considered as synonyms. In this report the term process management will be used.

1.2.3. Research questions and approach

In order to achieve the objective of this research, the following central question is formulated for this research:

> *Which recommendations can be made about the improvement of the campaign setup processes based on the insight in the course of these processes, the bottlenecks within these processes, and the causes of these bottlenecks?*

In order to answer the central question, the following research questions have to be answered in the research.

1. How can primary processes in service industries be analyzed and improved?
    - 1.1. What are suited process management theories for analyzing primary processes in service industries?
    - 1.2. Which tools from those theories can be used for analysing and improving the campaign setup processes?
2. What is the current situation concerning the campaign setup processes?
    - 2.1. Which primary processes does Gladior have?
    - 2.2. In what way are the campaign setup processes currently executed?
    - 2.3. Which problems can be identified in these processes based on the framework of this research?
3. What are solutions for the company concerning the campaign setup processes?
    - 3.1. What are multiple solutions for solving an identified problem?
    - 3.2. Which of identified solutions is most suited for solving the problem?
    - 3.3. What are recommendations for the implementation of the solutions?

Section 1.2.1 indicated that interviews and supplementing conversations are carried out in the initial research in order to formulate a research objective. The remain part of this section will describe the research approach applied to answer the research questions.

Question 1 is answered by a literature review. General books about quality management are used to identify commonly used process management theories. These theories can be used as the basis for a further literature review, to find more information about these theories and to identify additional theories. Based on discussions with supervisors and the management of Gladior focus areas are selected and relevant criteria are identified.

Question 2.1 is answered by interviews with management and employees. The primary processes are identified by an interview with management. The activities that make up the primary processes will be identified (and verified) by interviewing employees. The interviews are conducted in meetings with individual employee. Question 2.2 is answered by conducting interviews with employees involved in the campaign setup processes. These employees have to describe the processes they are involved in. Based on that input the processes can be mapped. These process descriptions are presented to employees and their colleagues for verification.

Question 2.3 is answered by applying the tools and theories identified in the answer of question 1.2. To identify the problems, the ideal situation of the theories will be compared to the situation at Gladior. In order to answer this question process descriptions, process data currently available at Gladior and observations of employees are used and analyzed. During these observations questions are addressed about bottlenecks in the execution of the process, challenges in the process, frequently occurring quality problems, and the desired situation from the employee viewpoint. In order to complete the answer of this question, some orders of the same size will be tracked during the campaign setup. Question 2.4 is answered by grouping identified problems based on their common cause.

Question 3 is answered by comparing the theoretical ideal situation with the current situation, by meetings and informal conversations with employees and management (which improvements would they like to see concerning the problems identified) and by comparing the identified problems with the ideal theoretical situation described by process management theories identified in question 1.4. Questions 3.1, 3.2 and 3.3 are answered individually for each problem (category) identified. If there is only one identified solution, question 3.2 is skipped.

1.2.4. Limitations of the research

The point of departure for this research is to improve customer loyalty at Gladior. The initial research indicated that the largest part of the contract cancellations are expected to be (indirectly) caused by poor process management. A part of the contract cancellations might also be explained by problems in the customer acquisition process, the management of expectations, or the qualification/expertise of Gladior their employees. These points are not taken into consideration in this research.

2. Theoretical framework

Every organization aims to achieve goals. Most firms attempt to become profitable by fulfilling customer needs and desires. Processes are required in order to reach those goals. A process can be defined as a series of successive correlated events (Boer & Krabbendam, 1996). process management can be used in order to maintain or improve the efficiency and effectiveness by which customer needs and desires are discovered and fulfilled. By that a firm should be able to better achieve its goals (Wentink, 2005). This chapter introduces processes and process management, important points of attention in process management, and the selected process management theories used for analyzing the campaign setup processes at Gladior.

2.1. Introduction to processes and process management

Within organizations a multiplicity of processes are carried out. These processes can be categorized in three main types: primary, support and management processes. Primary processes can be defined as a series of activities that are directly aimed on transforming organizational input (raw materials and information) into organizational output. Organizational output exists of products and services that are useful for customer(s). Support processes are activities aimed at supplying all processes with sufficient people, means, materials and information in order to carry out transformation. Management processes aim at ensuring a desired process course of other processes. Primary, support and management processes together form a system. The relation between these processes in a system is exhibited in figure 2.1 (Boer & Krabbendam, 1996).

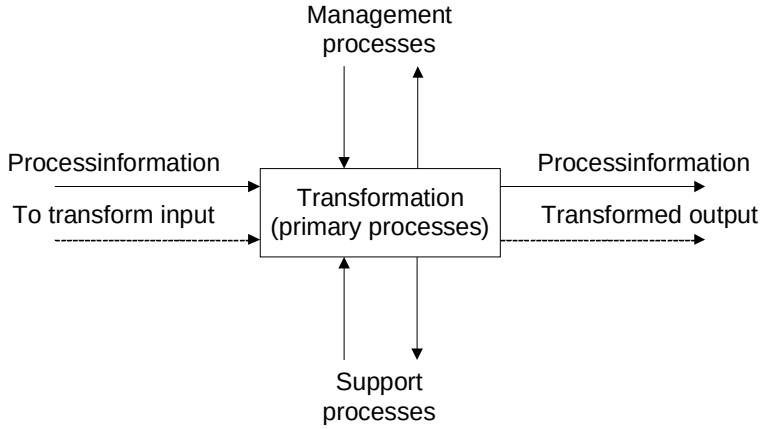

Figure 2.1: The relation between processes in a system
Boer & Krabbendam, 1996.

Productivity

Productivity is a central principle in organizations. Productivity refers to the efficiency and effectiveness by which organizational goals are achieved. Effectiveness refers to the extent to which objectives are met, or a desired situation is achieved. Effectiveness is focused at the output side of processes in relation to customer needs; "*doing the right things*". Efficiency refers to the relative use of means of production during the production and distribution of products and services. Efficiency is focused at the input and support side of processes: "*doing the things right*". Based on the extent of efficiency and effectiveness four productivity challenges can be identified, which are exhibited in figure 2.2 (Wentink, 2005).

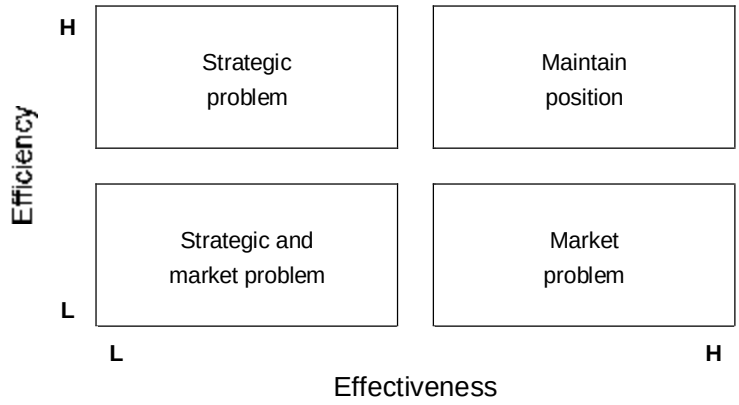

Figure 2.2: The four productivity challenges
Wentink, 2005.

Creating and maintaining organizations that work well is not easy, especially due to the continuous change in the environment of organizations (Boer & Krabbendam, 1996). Besides efficiency and effectiveness productivity also refers to the rate to which an organization is responsive to market needs, innovation of products or services, and its ability to change when this is demanded in the market. So productivity also refers to the extent to which an organization can maintain or improve its market position (Jeston & Nelis, 2006). Long term productivity can be negatively influenced by rigid processes that do not allow the organization to see and adjust to changes in the marketplace (Johnson, 1998; Bower & Christensen, 1995). So one of the challenges of process management is to align processes with the organization and its strategy (Jeston & Nelis, 2006).

Procedures

All processes in an organization are interrelated and form a network, although some processes are stronger interrelated than others. This network of processes should support a company in shaping, improving and delivering a constant level of quality. Procedures can be used to create this constant level of quality. So procedures can support a company in controlling their productivity. A procedure is a specified manner for the execution of an activity (Van Bruggen et al., 1996). One of the main aims of process management is to improve organizations by clear, simple, accepted, non-tacit, and actually used procedures that are in line with organizational strategy (Jeston & Nelis, 2006; Hammer & Champy, 1993).

A procedure, when established, has the following components (Van Bruggen et al., 1996):

- Aim of the activity.
- Responsibility of persons for carrying out certain activities.
- Materials, equipment and documents required for carrying out those activities.
- The way these materials, equipment and documents should be controlled and registered.

Especially responsibilities require special attention in process management, since most procedures involve multiple persons from multiple functions or departments (Van Bruggen et al., 1996). Organizations support the execution of processes by appointing tasks, responsibilities and authorities to their employees. The division of tasks and responsibilities can have a huge influence on the eventually quality of a product or service.

Next to the division of tasks and responsibilities, it is also important that the authorities assigned to employees correspond to their responsibilities. Having to little authority can lead to a situation in which employees cannot influence the result they are accountable for. Therefore the division of tasks, responsibilities and authorities are an important part of process management (Tepper & Mulder, 2001; Wentink, 2005).

2.2. Points of attention for process management in service industries

The previous section introduced processes and process management. This section introduces some main points of attention in process management. These main points of attention can be used for analyzing processes.

Quality of primary processes

Process management begins with describing (parts of) the processes within an organization. Since the primary process is the process that delivers products or services it has special attention in process management. The primary process exist out of multiple sub processes. In the primary processes the output of a preceding sub process should be the same as input of the subsequent sub process. Interfaces between processes are the places where quality of a product or service can be influenced most. When the output of a process is poor, it will also negatively influence the quality of subsequent processes. Therefore an organization should attempt to ensure quality at the source. So the interfaces between processes require special attention in detecting and solving quality problems (Van Bruggen et al., 1996; Reid & Sanders, 2002).

According to Wentink (2005) attributes that determine the quality of primary processes are the time between order receipt and deliverance to the customer, the time required for defining and developing an offering, the capacity to develop new products and services, and the capacity to attract new customers.

Characteristics of services

In service (and most business-to-business) environments each customer is unique and requires a solution that is to some extend customized (Hasenfeld, 1983; Ford, Gadde, Hakansson & Snehota, 2006). Due to the special nature of services, process management in service industries is to some extent different from process management in production environments (George, 2003; Wentink, 2005). Services have four major characteristics that influence processes in service industries, being (Kotler, 2003):

1. Intangibility. Due to the intangibility of services customers cannot anticipate on the exact result before purchase. Therefore buyers will also look for evidence of service quality before buying in order to reduce uncertainty.
2. Inseparability. Services are typically produced and consumed simultaneously. This also implies that customer interactions are part of the service production process, which draws special attention to service provider-customer interactions.
3. Variability. The actual (quality) of the service depends on who provides them, when and where they are provided, and on the interaction of the customer in the process (which can vary from customer to customer).
4. Perishability. Services cannot be stored or swapped. This is a challenge for a service provider when demand fluctuates (heavily).

These four characteristics of services also influence the extent to which customers can evaluate services on their (technical) quality. Where most products can be analysed on their quality before purchase, most customers cannot judge services on their technical quality, even after deliverance (Zeithaml, 1981; Ostrom & Lacobucci, 1995; Kotler, 2003).

Assessing the quality of services

According to Zeithaml (1981) and Ostrom & Lacobucci (1995) products and services can be classified in line with the following three types of evaluation characteristics:

- Products that are high in search qualities: a customer can evaluate the technical quality before buying.
- Products and services that are high in experience qualities: a customer can evaluate the quality after buying.
- Services that are high in credence qualities: a customer finds these services hard to evaluate, even after buying.

This continuum is visualized in figure 2.3. Customers rely heavily on price, personnel and physical impressions (of the service provider) in order to evaluate services that are high in experience or credence qualities. The actual quality of services that are high in credence qualities can only be evaluated by other professionals in the same field. So where customers can evaluate the quality of a product by its characteristics before purchase, customers can only determine the actual quality of a service by having it assessed by another professional in the same field. As long as such a service is not assessed by another professional in the same field, the interactions with the service provider will be an important measure of quality for the customer (Zeithaml, 1981; Ostrom & Lacobucci, 1995; Kotler, 2003).

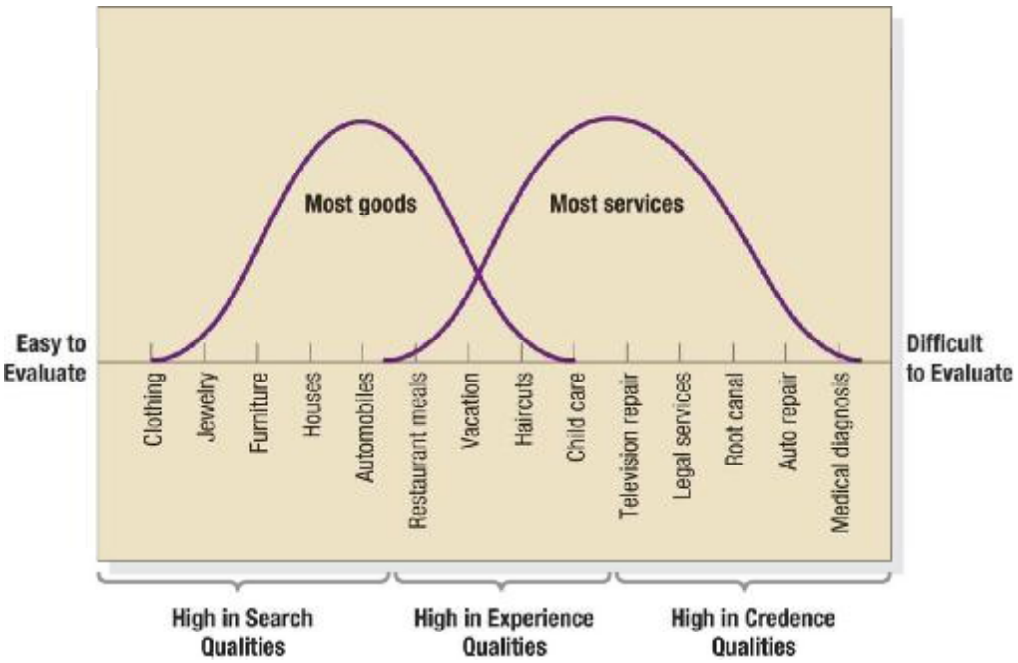

Figure 2.3: The continuum of evaluation for different products and services
Kotler, 2003.

Customers assess the quality of services by the experienced difference between the expectation and the degree to which these expectations are satisfied. This is also referred to as the customer perception of service quality (Cronin & Taylor, 1994; Zeithaml, Parasuraman & Berry, 1990). Hereby tangibles, reliability, responsiveness, assurance (competence, courtesy, credibility, security), and empathy (access, communication, understanding and customers) are the dimensions that are expected to determine the customer perception of quality (Zeithaml, Parasuraman & Berry, 1990). So good processes within a service management firm ensure that these dimensions meet customer expectations. But since customer perception is an important measure for quality, a good process allows for identifying customer needs (of each individual, unique, customer) and creating a solution according those needs (Wentink, 2005).

Efficiency in service industries

This difference of quality evaluation between products and services influences process management in service industries. A strong focus on efficiency in service industries can obstruct quality. In service industries efficiency has two dimensions: internal efficiency and external efficiency. Internal efficiency refers to the way a service provider operates, and is associated with the product of capital or labor. External efficiency refers to the assessment by customers about how a service provider operates. This external efficiency is determined by the (dyadic) relationship with the service provider and the extent to which customer needs are fulfilled. Cost saving improvements in the internal efficiency can negatively affect the quality assessment by the customer. Therefore organizations should focus on maximizing the added value from the viewpoint of the customer, instead of focusing on saving costs (Wentink, 2005).

Challenges for process management in service industries

A challenge for process management in service industries is that a large part of the production process takes place inside the heads of the employees. So the (technical) quality of a service depends on the employee(s) who execute the service processes.
Another difference with production firms is that in service industries the employees (professionals) have usually more expertise in their field than their executives. This can make professionals is some occasions resistant to process management improvements (or process standardization) in activities they are involved in. The challenge is to create accepted guidelines in those processes, without giving professionals the impression that procedures are too bureaucratic to serve the customer well (Delden, 1992; Ezerman & Mastenbroek, 1989; Maas et al., 1995).

Other challenges in service processes are tracking the flow of work (like in manufacturing operations), a tradition of individuality, a lack of meaningful data or a lack of data-based decision making, and the uncontrollability of people (people can't be controlled like machines). The tradition of individuality implies that people are left over to their own devices to structure their daily tasks, and are only given some guidelines on how their work should be performed. The lack of meaningful data implies that in most service environments it is unknown how much work there are in a queue and how long it can take to handle those work items. Examples of such work items are phone calls, e-mails, requests, reports, bills, orders, etcetera (George, 2003).

2.3. Process management theories and models for primary processes

Before processes can be analyzed, a theory or model is required to provide a basis for finding bottlenecks and for formulating improvement opportunities. This section will start with a description of the criteria used for identifying process management theories and models that can be used as a tool in this research. After that, the identified process management theories that may be relevant for this research are presented. This section will finish with a selection of the theories and models used in this research.

Process management identification criteria

In this research, the following inclusion criteria were used for identifying process management theories and models:

1. The theory must be suited for analyzing and improving primary processes in service industries.
2. The theory should allow an external researcher to analyze processes and formulate improvement opportunities for those processes.
3. The theory should take improvement opportunities between process interfaces into account.
4. The theory should be complete, meaning that it both provide a guide to detect quality problems and to find a solution to those problems.

Assessing the search engine marketing expertise of the employees at Gladior would be very hard in this research. Therefore process management theories and models that focus on assessing and improving the quality of employees are excluded. The management of Gladior also wants to carry out this project as an under the radar project, without applying process management directly to the complete organization. As a consequence, management is not willing to make large initial investments when the results are uncertain or payback periods can be long. Hence process management theories that require large (initial) investments are not included in this research. Because of the special nature of services and a lack of available production data, also process management theories and models that are based on statistical process control are not included in this research.

Identified process management theories and models

After searching for process management theories and models that meet the inclusion criteria, but not meet the exclusion criteria, the following process management theories and models are identified:

- Service blueprinting and customer participation.
- Lean manufacturing.
- Theory of constraints.
- Business process reengineering.

The remain part of this section provides some background by these theories and models, before the selection of models and theories will be presented.

Service blueprinting and customer participation

This theory attempts to advance the insights in how quality can be improved by dividing an organization into multiple layers. These layers are: customers, first-line employees, second-line employees, and management/support processes. According to this and supplementary theories quality problems occur between layers. Another main point is customer participation and education. More customer participation can lead to efficiency gains, but when a customer not enough knowledge this also could lead to lower quality. More education about organizational processes requires more initial investments, but can lead to better customer participation and more customer loyalty (Fliess & Kleinaltenkamp, 2004; Bell & Eisingerich, 2007a, 2007b; Wentink, 2005; Blanchard & Bowles, 2006). A simplified service blueprint is visualized in figure 2.4.

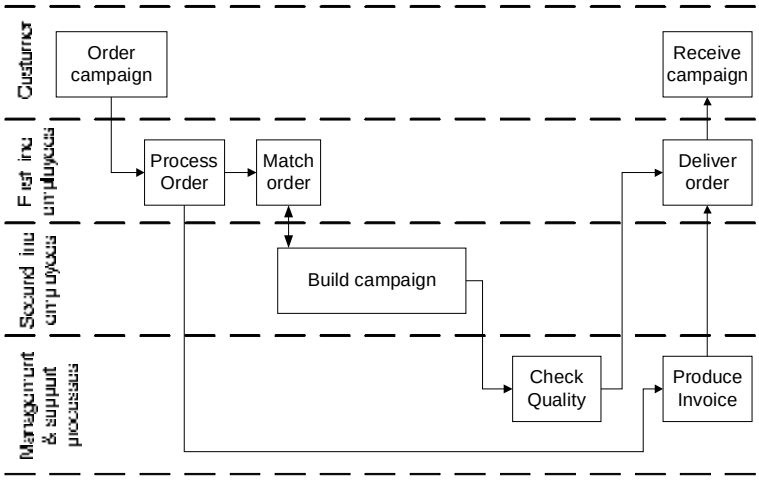

Figure 2.4: Example of a service blueprint

Lean manufacturing

This theory attempts to improve productivity by removing waste from processes using incremental process innovation. All human activity that absorb resources but do not create value are considered waste. The capacity gained by removing waste can be used carrying out processes that create value in the viewpoint of the customer, or for further improving processes. In order to remove waste from processes five basic principles should be applied: define value from a customer viewpoint, identify the value stream and eliminate waste, create flow, create pull, and pursue perfection (Ohno, 1988; Womack & Jones, 1996, 2003).

Theory of constraints (TOC)

This theory aims at continuously improving productivity, whereby productivity is defined as bringing a company closer to its goals. The main goal for most companies is to make profit. According to this theory most organizations do not focus on maximizing profits, but on decreasing unit costs. As a consequence departments within company sub-optimize processes or take conflicting measures, that decrease the overall profitability of an organization. Instead of focusing on decreasing unit costs, companies should focus on finding and improving their weakest link or bottleneck. When the bottleneck is exploited and another activity or resource has become the weakest link, the organization should focus on improving the new weakest link (Hsu & Sun, 2005; Goldratt & Cox, 1992; Husby, 2007).

Even though TOC and Lean manufacturing can be used complementary to each other (Rikhof, 2007), their basic approach is the opposite. This difference is visualized in figure 2.5. When a bottleneck is identified, Lean manufacturing will first investigate if that bottleneck is not caused by irrelevant demands in other processes. If that is the case, the demands will be removed from the other processes. TOC on the other hand, attempts to exploit the bottleneck. Consider for instance a customer relationship management (CRM) system. When that CRM system cannot process all information obtained in the sales acquisition processes (and used in the subsequent processes), the lean manufacturing approach will first analyze if the absence of that information will cause quality problems. If that is not the case, the information collection and information requests are removed from the processes. On the other hand, the TOC approach would lead to a direct expansion of the CRM system so it can process all information.

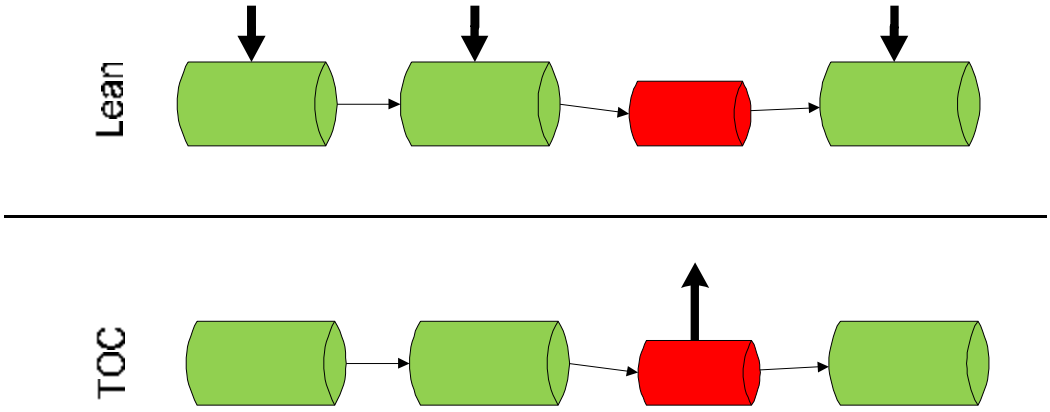

Figure 2.5: The difference between Lean manufacturing and TOC
Berendsen & Vixseboxse, 2007.

Business process reengineering

This theory aims at improving business processes by radical innovation. According to business process reengineering it is fundamental that organizations reinvent and radical redesign their business processes in order to gain dramatic improvements on important performance indicators. Organizations should thereby not look at the current execution of processes, but develop the ideal processes from scratch. Some of the main elements of this theory are the organization of processes around results, the connection of tasks in a natural sequence, having processes executed by those employees that also require the output of the process, and the execution of tasks where the result can be most positively influenced by bringing information, authority and control tasks together (Hammer & Champy, 1993).
Even though business process reengineering originally focuses on improving complete organizations (from a functional approach to a process and result oriented organization), the philosophy can also be applied on a selection of the organizational processes (Wentink, 2005).

Selection of theories and models used in this research

In a discussion with management 'lean manufacturing' and 'service blueprinting and customer participation' are selected for this research. 'Service blueprinting and customer participation' is selected because it is the only identified process management theory that pays attention to the special characteristics of services, especially the coproduction of services with the customer. The initial research indicated that customer participation currently are experienced by Gladior. Besides that, from the identified theories 'service blueprinting and customer participation' pays the most attention to process interfaces. This theory especially allows for analyzing the cooperation between the customer, Gladior direct and Gladior partner.

'Lean manufacturing' is selected because it allows for finding problems in the current processes, while its principles also indicate the desired situation. An important feature of 'lean manufacturing' is that it attempts to remove unnecessary activities from the processes as much as possible before adding new ones. Next to that, 'lean manufacturing' attempts to use easy solutions that are affordable and easy to implement (Ohno, 1988; Womack & Jones, 1996, 2003). In this project an elimination of those unnecessary activities would generate more available capacity. That capacity can be used for other activities that improve the campaign performance. This research will focus on the following 'lean manufacturing' principles: identifying the value stream (and eliminate waste), create flow and create pull. Since this research does not focus on identifying customer needs, the principle 'defining value from a customer viewpoint' will not be applied. Since George (2003) provides a framework for applying 'lean manufacturing' in service environments, this theory also can be considered as suited for applying in service organizations.

'Theory of constraints' is not selected because that theory is too broad. 'Theory of constraints' be applied to each problem or process. The points of attention for finding bottlenecks and solving bottlenecks are broad. As a consequence it depends on expertise of researcher which bottlenecks are identified (Husby, 2007). This can be especially the case in service organizations (where it is much harder to analyze the production process) and in companies where little to no production information is available.

'Business process reengineering' is not selected because it is expected that incremental innovation can lead to a better solution, while 'business process reengineering' focuses on radical innovation. Next to that, many 'business process reengineering' implementations fail due to an overemphasizes on cost reductions (which can lead to too little knowledge or experience in the process that eventually lead to a poor process), acceptation problems and performance management problems (Wentink, 2005). This increases the risk that solutions found with this theory do not lead to an improvement of the organizational operations. Besides that, the risk exists that the solutions found will not be accepted by Gladior.
Compared to 'busiress process reergireering', two of the 'lean manufacturing' principles have proven to be reliable in improving business performance independent of the business characteristics. These two principles concern the analysis of the value stream (on waste) and creating flow (Harrington, 2004). The chance that 'lean manufacturing' will lead to a solution that contributions to Gladior their operations is therefore expected to be much higher.
'Business process reengineering' also leads to a completely new process that has to be implemented completely, or is not implementable at all. 'Lean manufacturing' and 'service blueprinting and customer participation' can lead to many small improvements, which can be independently implemented. So when management or employees decide not to implement one part of the solution, other solutions found with 'lean manufacturing' and 'service blueprinting and customer participation' can still be implemented.

Both the 'lean manufacturing' and the 'service blueprinting and customer participation' theory contain many tools and points of attention for analyzing and improving services. The next section will elaborate on the tools and points of attention used in this research.

2.4. Process management analysis and improvement tools

This section further introduces the process management theories selected for this research. The description also elaborates on the tools that can be used to analyze and improve business processes with these theories. The first part of this section elaborates on the 'lean manufacturing' theory, while the second part elaborates on the "service blueprinting and customer education" theory.

2.4.1. Lean manufacturing

Lean manufacturing aims at removing waste form processes (Ohno, 1998). Process (interfaces) can contain the following types of waste Ohno (1998):

- Defects in products or tangible parts of services.
- Overproduction of goods (or service items).
- Inventory of goods or parts of the service (for instance reports) waiting for further processing or deliverance.
- Unnecessary processing by making a higher standard than customers expect/desire.
- Unnecessary movement (of people).
- Unnecessary transport (of goods).
- Waiting by employees (on an upstream activity).

According to Berendsen en Vixseboxse (2007) loosing knowledge between process interfaces is an additional form of waste that has to be taken into account, when analysing service processes.

Slow processes and quality

Originally lean manufacturing was created for manufacturing environments, but it can also be applied in service environments. Most service processes are slow processes, which are usually expensive processes. Slow processes are prone to poor quality. And poor quality negatively influences customer satisfaction and business revenues. In some occasions more than half of the costs of the service application does not add value to the service, but is spend on (correcting) the above mentioned forms of waste (George, 2003).

According to George (2003) the main reason service processes are slow is because there is too much work-in-progress. In services, work-in-progress can exist out of reports waiting on a desk, e-mails, or sales orders in a database. In poor processes these tasks/orders can spend more than 90% of their time waiting on the next process step.

Lean manufacturing principles

In order to remove waste from processes, the following steps should be taken: specify value from the viewpoint of the customer (what needs does the customer have), identify the value stream and eliminate waste, create flow, create pull, and pursue perfection (Womack & Jones, 1996, 2003).

The value stream consists of all activities (both value and non-value added) executed in the production flow. The production flow consists of all processes between order-acceptance and order deliverance (Rother & Shook, 2003). Activities that do not add value can be recognized in the value stream. An activity does not add value when customers are not willing to pay for the execution of that activity. Some of those non value adding activities directly can be removed. Other non value adding activities are currently unavoidable (due to current technologies and production assets). These activities should be eliminated by improvement projects were possible (Womack & Jones, 2003).

This approach is considerable different from other process management theories, which mainly create additional work for employees. This difference is visualized in figure 2.6.

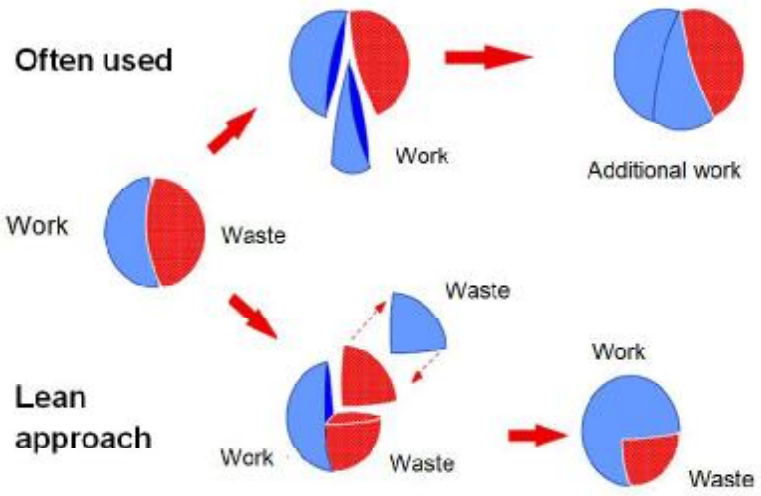

Figure 2.6: Removing waste versus creating additional work
Rikhof, 2007.

A process has flow when that process has a fluent course. Flow can be created by continuously working on each order from the beginning to the end. In that case waiting, downtime, rework and scrap do not occur in the process (Womack & Jones, 1996, 2003). The level of process flow can be determined by dividing the value added time for a service, through the time between order acceptance and order deliverance (George, 2003).
In service processes it might be hard to determine what does and what does not add value. Therefore the percentage of time an order spends waiting in the process can be used as an indication of the level of process flow. In most service organizations an order spends usually over 90% of its time waiting in the process. The benchmark of a best practice indicates that in a service organization it is possible that an order only spend 50% of its time waiting in the process (George, 2003).

In a pull process the production is demand driven. That means that all work is triggered by the customer. *"Pull in simplest terms means that no one upstream should produce a good or service until the customer downstream asks for it"* (Womack & Jones, 2003, p.67). In a process with multiple steps this implies that a part of the service is only delivered when the next process step downstream needs it, or has capacity available to process it (Womack & Jones, 2003).

The key to make a process pull is to create an input buffer in which all incoming work is collected. A new task is only released from the input buffer when another task is finished (and out of the process). When a pull processes are used, inventories can be reduced or prevented (George, 2003).

Pursue perfection is the final 'lean manufacturing' principle. When the other four principles are applied, the principles will interact with one-another in a virtuous circle. The more lean a process becomes, the more new wastes can be identified and removed. Pursuing perfection implies that the process of recognizing and removing wastes never ends (Womack & Jones, 2003).

Available lean manufacturing tools

As indicated in the previous section, this research focuses on analysing and improving processes by focussing on the value stream, flow and pull. The 'lean manufacturing' theory contains many tools that can be used to create a 'lean company'. Many of those tools are oriented at manufacturing environments, like machine maintenance, overall equipment efficiency and setup time reduction (Womack & Jones, 2003). Since voice of the customer is an important in defining value from a customer point of view, lean manufacturing also makes use of a lot of tools from customer research (George, 2003). Since both these subjects are not part of (the scope of) this research, these are not taken into account.

The tools provided by the lean manufacturing theory that can be used for analysing and improving primary processes in service industries are:

- **5S**. 5S refers to the five practices that lead to a clean and manageable workplace. The five practices are: organization, tidiness, purity, cleanliness, and discipline. (Womack & Jones, 2003). These practices can also be applied to information systems and office spaces, because information shortage in services is equivalent to material shortage in manufacturing. Besides that, searching for information or data does not add value to the service (George, 2003).

- **Value stream mapping**. Value stream mapping is a method for visualizing material and information flows. Value stream mapping supports in analyzing and improving primary processes, especially in detecting waste within processes (Rother & Shook, 2003).

- **Policy deployment**. Policy deployment is a strategic decision-making tool that can be used to determine the amount of resources to be allocated to which initiatives, in order to accomplish the business objectives (Womack & Jones, 2003).

- **Standard work**. Standard work is precise description of each individual work activity, including allowed cycle time and the work sequence of (specific) tasks (Womack & Jones, 2003).

- **Poka-Yoke**. Poka-Yoke is a mistake proofing device or procedure for preventing or detecting a defect during order-taking or manufacturing. Poka-Yoke can be used to prevent a defect reaching the next production step or the customer (Womack & Jones, 2003).

- **Visual management**. Visual management is the placement of production activities, performance indicators, and production status in a plain view. That way the status of the system can be understood at a glance by everyone involved (Womack & Jones, 2003).

- **Lean waste matrix**. A lean waste Matrix is qualitative method for detecting waste in processes. In a lean waste matrix the types of waste are shown vertical while the individual process steps are shown horizontal. Due to this type of presentation employees can detect waste in the processes they are involved in (Berendsen & Vixseboxse, 2007).

- **Benchmarking**. Benchmarking is a method for analyzing what solutions and best practices are already available in the marketplace. Good performing processes within the organization can be used as a benchmark, or practices used by industry leaders in the subject (George, 2003).

- **Job design and task scheduling**. When lean manufacturing is applied in manufacturing operations, job design and the factory layout sometimes have to be reconsidered in order to remove waste from the processes. In order to create flow, the task scheduling procedures sometimes have to be reconsidered (Womack & Jones, 2003). In order to improve leanness of service processes, the job design and task scheduling procedures sometimes need to be reconsidered as well.
  According to Daft (2003) the following main types of job design can be distinguished: job simplification, job rotation, and job enlargement. Using job simplification each employee is responsible for carrying out one main task. Using job rotation each employee is responsible for carrying out one task for a certain amount of time or tasks, before he rotates to another to another task. Using job enlargement a worker is responsible for carrying out all tasks that make up a complete process (Daft, 2003). This is visualized in figure 2.7.

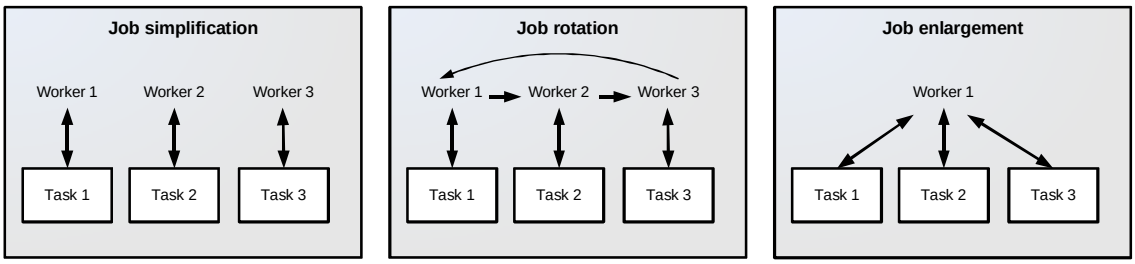

Figure 2.7: Three main forms of job design
Daft, 2003.

From the above mentioned tools, value stream mapping, Poka-Yoke, visual management, lean waste matrix, and job design, planning & scheduling are selected for this research. Value stream mapping en the lean waste matrix are tools that can support problem detection, while Poka-Yoke, visual management, and 'job design and task scheduling' allow for improving processes.

5S is not selected because it is expected that the improvement opportunities found with that tool are relatively small compared to other improvement opportunities found with other tools, considering the problems identified in the initial research.
Policy deployment is not selected because that tool does not support in analyzing primary processes, but only supports in selecting improvement projects and allocating resources to those projects.

Standard work is not selected because services are to some extend customized for every customer. The question arises to which extent standard work allows for customization. Besides that, guidelines for executing primary processes can change rather fast due to changes in search engines. Since Gladior is a small and dynamic company, the question arises what would be the enduringness of the solution found.
Benchmarking is not selected because that tool only improves performance when it is applied in a process that already has a medium to good performance. But applied at processes with a poor performance, it only further decreases process performance (Harrington, 2004). Since management expects this process has many improvement opportunities, the process performance might be rather poor. In that case benchmarking would not improve process performance.

In order to analyze and improve task scheduling, algorithms described by Pinedo (2005) will be used. Pinedo (2005) describes a broad range of algorithms for different scheduling problems. Since it is hard to predict on forehand if, and if so which, scheduling problems exists, relevant algorithms will be explained and applied were relevant in the report.

Supplementation of the tools

In order to complete the 'lean manufacturing' part of the framework, it is complemented with two points of attention from other process management theories.

1. **Natural connection of tasks**. Activities should be executed according to a natural connection and in parallel were possible. This point of attention is derived from 'business process reengineering' theory. As indicated by George (2003), most service processes are slow processes. Especially when processes involve multiple departments and disciplines, waiting can easily occur. In those occasions employees might work in advance on the service delivery process, while they actually first require input from a colleague or another firm before they can proceed. In such a situation wastes can easily occur, like rework or rejects. By verifying if processes are executed in a natural way, these kind of process problems can be identified. Besides that, such a verification can contribute by improving process flow because scrap and rework can be eliminated from the process.

2. **Peer review**. This point of attention is derived from a quality of professionals theory. Poka-Yoke is selected as one of the tools for analyzing and improving processes in this research. In order to assess services of Gladior on their technical quality, knowledge about search engine marketing is required. This knowledge is not possessed by all employees, resellers, and customers (after all Gladior is hired for that knowledge). So only other professionals are able to assess the service on their technical quality and can detect possible quality problems. Peer review can support in detecting quality problems which otherwise would have remained undetected (but can negatively influence campaign results). Besides that, spelling errors in the keywords or texts and lay-out problems in the landing page can also have a negative effect on the experienced quality by the customer or reseller. Peer review can support in detecting those quality problems.

After discussing the 'lean manufacturing' theory and the selection of lean tools for this research, the following section will continue with the 'service blueprinting and customer participation' theory.

2.4.2. Service blueprinting and customer participation

The main point of departure of 'service blueprinting and customer participation' is that successful service provision depends both on the customer and the service provider. So failures the service delivery can be caused by both the service provider and the customer. Quality problems in the service delivery process can occur due to problems in the internal processes or due to customer participation problems. An example of a cause of a service provision failure is a late and poor customer contribution.

Service blueprinting is a method for analyzing and improving service processes. This method is suited for individual service companies and service supply chains. A blueprint is a two-dimensional picture of a service process. The horizontal axis represents the actions executed by the customer or service provider, while the vertical axis represents the different areas of action (Fliess & Kleinaltenkamp, 2004; Wentink, 2005).
In service blueprinting, the structure of service provider exists of several layers: customers, frontline employees, 'staff and production employees' and management. Each layer in this blueprint is separated by a line (Fliess & Kleinaltenkamp, 2004; Wentink, 2005).

According to service blueprinting, most of the quality problems arise between layers. The interaction between the customer and the frontline employees is especially important, although quality is also influenced by the way staff and management support the service deliverance process (Wentink, 2005). Quality can influenced most at the following layer interfaces (Wentink, 2005; Fliess & Kleinaltenkamp, 2004):

1. The line of interaction. This line separates the customer action area from the supplier action area; in what way do frontline employees interact with the customer. Above this line the activities, choices, and interactions performed by the customer are shown.
2. The line of visibility. This line separates the actions visible and those invisible to the customer; in what way do back-stage employees (that do not directly have customer contact) support the frontline employees. Above this line, actions executed and decisions made by frontline employees can be found.
3. The line of internal interaction. This line differentiates between front office and back office activities. How do staff/support employees co-operate. These employees have internal customer-supplier relations in the service delivery process.
4. The line of control. This line separates between the management zone (planning, managing, and controlling) and the support zone (support activities), and indicates how planning and control activities support the executive activities.

An example of a simplified service blueprint can be found in figure 2.4.

Points of attention in Service blueprinting are:

- **Customer induced and customer independent activities**. Customer induced activities are activities triggered by customers. In order to serve the customer, the customer needs to participate in the process. Customer induced activities are associated with production risk, the risk that a service provider cannot fulfil its promises towards the customer (Fliess & Kleinaltenkamp, 2004).
  Customer independent activities are independent of a certain customer and produced before customer demand. These activities are associated with market risk, the risk of not finding enough customers for the service (Fliess & Kleinaltenkamp, 2004).

- **Passive versus active information**. In the service delivery process, production risk increases with the number of contact moments between the customer and the service provider. During each contact moment the customer can introduce new information in the process (Fliess & Kleinaltenkamp, 2004).
  New information can be passive or active. Passive information is processed in the process, but does not influence the service process or the requirements about the outcome. Active information comprehends information about customer wishes, special needs, deadlines, etcetera. That information can influence the service process or the requirements about the outcome. Production risks increases with an increase in opportunities for presenting new active information during the service delivery process (Fliess & Kleinaltenkamp, 2004).

- **Customer participation versus standardization**. Customer participation can be enlarged by increasing the number of activities (decisions, interactions, tasks) above the line of interaction. From the service provider point of view, increasing customer participation can lead to more efficiency, because the customer executes tasks that otherwise would have been executed by employees of the organization. But increasing the amount of customer participation also requires better process management at the service provider, because customer contributions have to be timely, qualified, and according to minimum requirements in order to be useful. Poor contributions can lead to an increase in total costs, lead time and the number of tasks (customer contact and rework) that have to be carried out by the service provider (Fliess & Kleinaltenkamp, 2004).

  A service provider can only meet customer requirements at lowest cost when both the service provider and the customer know which resources and contributions are required. Fliess & Kleinaltenkamp (2004) distinguish between four types of process situations that differ in the extent to which supplier and customer know why, where, when, and how to participate in the process. The four types are (Fliess & Kleinaltenkamp, 2004):

  1. **Innovative service process**. Both the customer and the supplier do not know how to direct the process, without using trial and error. This is seen a lot in innovation projects.
  2. **Customer dominated service process**. The customer has a knowledge advantage compared to the supplier. The customer does know more exactly how the supplier should operate. In that case the customer is more likely to direct the service deliverance process. This is seen a lot in the automotive industry, where customers direct the supply chain.
  3. **Supplier dominated service process**. The supplier has a knowledge advantage compared to the customer. The supplier does know more exactly when, where and how the customer should participate in the process. The supplier tends to direct the deliverance process.
  4. **Mature service relationship process**. Both the customer and the supplier exactly know how to deliver the service. This is mainly seen in mature service industries.

  The four types are exhibited in figure 2.8.

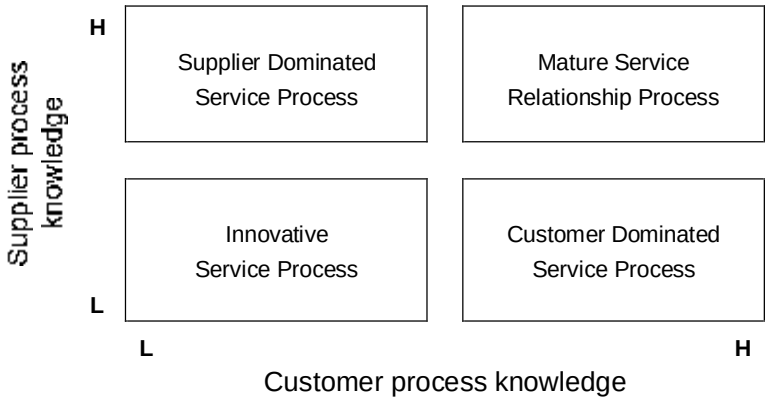

Figure 2.8: Four types of process knowledge of service processes

The process knowledge level of the customer and the supplier can affect the willingness of the customer to cooperate in the process. The lower the knowledge of the customer, the higher the willingness is expected to be. This knowledge levels also affect the efficiency and the effectiveness of the cooperation (Fliess & Kleinaltenkamp, 2004).

In order to prevent the negative aspects of customer contributions, a service provider can standardize their (interaction) processes and minimize the number of contact moments with the customer. Less contact moments make it easier to ensure good customer participation, without disregarding customer satisfaction too much. On the other hand that makes the service less flexible, which might make it harder to find enough customers for the service (Fliess & Kleinaltenkamp, 2004).

By standardizing the process and reducing the number of contact moments, the service outcomes also become more standardized. That should lead to a decrease in the total costs of the process. But as the service process becomes less flexible; there are fewer possibilities for customization, and the target group might become smaller and more specific. When the processes become too inflexible, the organization might come in a situation in which it cannot find enough customers for its service. That will eventually lead to an increase of the costs per process (Fliess & Kleinaltenkamp, 2004).

- **Customer education.** The quality of the participation of a new customer in a service process depends on the amount of customer education given about the processes at the company. Research in financial services indicated that customer knowledge about a firm their methods and services increases customer loyalty. This implies that service providers can increase customer loyalty by educating the customer about the firm and the processes. This also leads to more efficiency because customers are better informed about their required input in the service delivery processes (Bell & Eisingerich, 2007a, 2007b).
  On the other hand, educating customers about the market showed to be negatively correlated with customer loyalty. Better informed customers tend to be more critical towards their service provider, and are better able to shop around for other providers (Bell & Eisingerich, 2007a, 2007b).

- **Media richness**. Communication is an important part in service organizations. The message communicated should fit the communication medium. The richness of the medium indicates the extent to which it is suited for processing active information. Communication media have different capacities for resolving equivocalness, dealing with the possibility of multiple interpretations, and facilitating understanding. The richness of a medium depends on the possibility of direct feedback, the capacity for transmitting multiple signals (like body language and voice tone), the usage of natural language, and the personal focus of the medium. The hierarchy of communication mediums based on their information richness is (in descending order): face-to-face communication, telephone, e-mail, letters, information systems, and database records (University of Twente, 2004; Daft & Lengel, 1984).

Selection of tools

The above mentioned points of attention are all taken into account in this research. Customer induced and customer independent activities are already part of the research, since creating pull (customer induced) processes is part of the lean manufacturing theory. Passive versus active information can be used to detect quality problems, because passive information presented late in the process can cause rework or defects.
Customer participation versus standardization can be used to improve processes. The typology of the four types of service processes can support in detecting quality problems caused by possible knowledge gaps between Gladior and customers. Besides that, it can support in verifying if the amount of customer participation is in line with the knowledge levels. When problems occur, customer education can used for finding additional solutions in the trade off.
Media richness can be used to analyze current communication mediums used to communicate with customers and employees at another level in the service blueprint, and to analyze if the medium meets its purpose. A better alignment between communication medium and the message can improve the communication in the processes.

Mapping processes

In this research the business process modelling notation will be used to map process. These modelling conventions can be found in the literature of White (2004). Directions for reading process maps will be discussed at relevant places in the research.

2.5. Chapter summary

This chapter described how primary processes in service industries can be analyzed and improved. The description exists of an introduction to process management, an overview of suited process management theories for analyzing business processes in service industries, a selection of theories for this research, and a selection of tools for analyzing and improving processes in this research.

A process can be defined as a series of successive correlated events. Process management can be used to maintain or improve the efficiency and effectiveness of processes. Within organizations a multiplicity of processes are executed. These processes can be categorized in three main types: primary, support and management processes. When a specified manner is formulated for executing a process, that is named a procedure. Primary processes exist out of multiple sub processes. At the interfaces between those sub processes quality can be influenced most. An important attribute for determining the quality of a service process is the time between order receipt and order deliverance to the customer.

For process management of service processes the special characteristics of services play an important role. These characteristics influence the extent to which customers can evaluate services on their technical quality. An important challenge for process management in service industries is that a large part of the production process takes place in the heads of the employees. Besides that, the flow of work is also hard to track due to the intangibility of services.

Suited process management theories for analyzing primary processes in service industries are: 'service blueprinting and customer participation', 'lean manufacturing', 'theory of constraints' and 'business process reengineering'.
The aim of 'service blueprinting and customer participation' is to improve business processes by analyzing and improving the cooperation between the several layers involved in the service delivery process. Hereby also the interaction with the customer is an important factor for the actual quality of the services that can be delivered. 'Lean manufacturing' attempts to improve processes by removing waste from processes using incremental innovation. Hereby waste is everything that does not add value from a customer viewpoint. 'Theory of constraints' focuses on bringing an organization closer to its goal (making profit) by identifying and exploiting bottlenecks within an organization. 'Business process reengineering' attempts to improve processes by developing the ideal process from scratch, and replace the current process by the ideal process.
From these theories 'service blueprinting and customer participation' and 'lean manufacturing' are selected for analyzing and improving processes in this research.

From the 'lean manufacturing' theory the tools value stream mapping, Poka-Yoke, visual management, lean waste matrix, and 'job design and task scheduling' are selected for this research. These tools are complemented with checking the processes on a natural connection of tasks and peer review. From the 'service blueprinting and customer participation' theory the following points of attention are selected for this research: customer induced activities, passive versus active information, customer participation, customer education and media richness of the communication mediums.

After describing how primary process in service industries can be analyzed and improved, these theories will be used in the next chapter for analyzing the campaign setup processes at Gladior.

3. Analysis of the campaign setup processes

Chapter one introduced Gladior and their organizational challenges, while chapter two described the theoretical framework for this research. This chapter describes the current situation concerning the campaign setup processes. The campaign setup processes will be discussed by a description of the campaign setup processes and the bottlenecks identified in those processes. First a description of the primary processes will be given.

3.1. Primary processes of Gladior

The first chapter paid attention to the desire of management to split up Gladior in two individual companies, Gladior Partner and Gladior Direct. After the split Gladior Partner should be responsible for the technical setup (building the landing pages) and technical maintenance of campaigns. Gladior Direct should function like other resellers of Gladior Partner, and be responsible for customer acquisition, non technical campaign setup and the maintenance of campaigns. Since the organizational structure should support the business processes and not the other way around, this chapter will discuss the execution of processes according their natural course. Since processes concerning R&D and services other than search engine optimization are not part of the scope of this research, these processes are not described in this section.

Gladior has the following primary processes: customer acquisition, setting up new campaigns, campaign monitoring, campaign evaluations, 'campaign maintenance and adjustments' and customer/reseller support. The remaining part of this section elaborates on these processes.

Setting up new campaigns

The primary process of Gladior starts with the customer acquisition process. After a new customer is acquired, a campaign has to be setup for that customer.

Setting up a new campaign exists of four main phases: determining suited keywords (which is called the campaign advice), write texts for those keywords, building landing pages, and implement the campaign. Determining suited keywords, writing texts and implementation are processes that are executed at Gladior Direct, while Gladior Partner is responsible for building the landing pages. These process steps are explained and discussed in further detail in section 3.2.

Campaign monitoring

Gladior Partner created several tools that together monitor the performance and technical status of campaigns. These tools will also notify Gladior and resellers about changes in technical status, for instance when a campaign is implemented (by the customer).

When a campaign is implemented, the tools provide information about the performance and the technical status of the campaign. This information is used by Gladior, resellers and customers for campaign evaluations and for finding improvement opportunities. The technical status is used to detect campaigns that do not fully meet the latest campaign guidelines set by Gladior (for instance, concerning the implementation). Due to guideline updates or website adjustments it can occur that a campaign does not meet the guidelines anymore. In that case Gladior and resellers will automatically be informed about the technical status.

Campaign evaluations

Gladior Partner periodically evaluates campaigns manually to find further improvement opportunities. These manual evaluations focus on improvement opportunities that cannot (yet) be detected by tools. These improvement opportunities can lead to maintenance tasks for Gladior Partner, Gladior Direct, resellers or customers.

When the campaign is implemented, Gladior Direct periodically evaluates the campaign with the customer. Dependent of the campaign size and the performance of the campaign, this evaluation should take place one or two times a year. In reality, campaign evaluations are not always carried out due to capacity problems.
Campaign evaluations are supported by tools and improvement opportunities presented by Gladior Partner. The evaluation process can be triggered by campaign improvement opportunities indicated in a technical campaign evaluation by Gladior Partner, a customer complaint, or by time (when the last evaluation is more than half a or one year ago). Campaign evaluations with the customer can lead to requests for campaign adjustments.

Campaign maintenance and adjustments

Sometimes campaign updates or adjustments have to be carried out for campaigns. Reasons for a campaign update or adjustment are for instance: poor campaign performance, changes in the lay-out or structure of the website, improvement desires of the customer, or improvement opportunities formulated by Gladior Partner. In those occasions, Gladior Direct carries out the tasks concerning keyword selection, writing texts and supporting the customer with the implementation. Technical campaign adjustments are delegated to Gladior Partner. Technical campaign adjustment concern all changes to the landing page that do not concern the keyword or texts, like for example an adjustment in the lay-out of the landing page.

Customer/ reseller support

Gladior Direct is responsible for handling questions and complaints from customers. When Gladior Direct is not able to handle the question, Gladior Partner is consulted. Reseller support exists of answering questions of resellers; both questions of the resellers as well as customer questions that cannot be answered by resellers. Only in very exceptional situations Gladior Partner has direct contact with final customers, except for customers of Gladior Direct.

Figure 3.1 presents a visualization of the primary processes of Gladior, according to the business process modelling notation. An explanation of this mapping method can be found in annex 2.

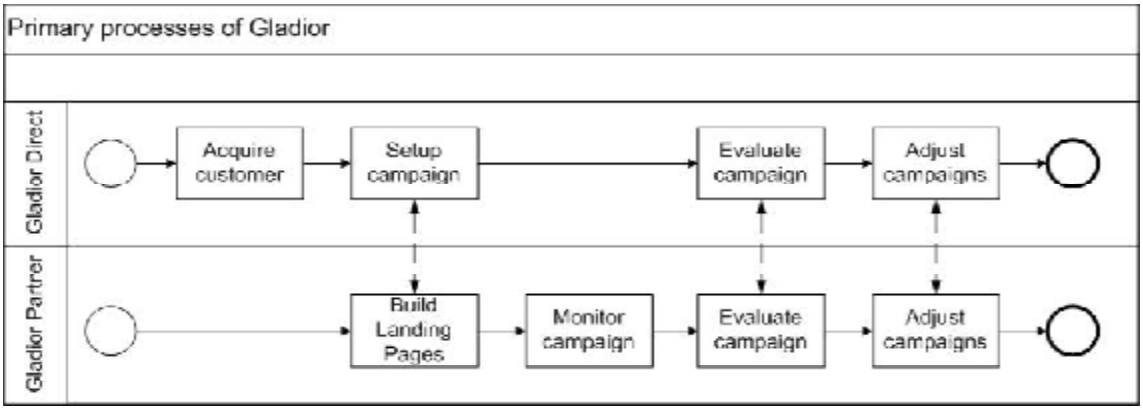

Figure 3.1: Overview of the primary processes of Gladior

3.2. Current execution of the campaign setup processes

As indicated in the previous section, setting up campaigns involves multiple activities. When the official split between Gladior Direct and Gladior Partner is realized, the execution process steps are also divided over multiple companies. Hereby Gladior Direct and other resellers will become responsible for carrying out the non-technical part of the campaign setup, while the technical part of setting up the campaigns (building the landing pages) is outsourced to Gladior Partner.

Based on input of involved employees from Gladior (interviews, observations and verifications), process descriptions and visualizations are made of the campaign setup processes. Since the execution of the process can already be distinguished into two parts, a different map is made for the non-technical part (Gladior Direct) and for the technical part (Gladior Partner). The process map of Gladior Direct can be found in annex 2, while the process map of Gladior Partner can be found in annex 3. Like the previous section, this section discusses the combined processes of Gladior Direct and Gladior Partner according to the natural course of the process.

Main process steps of the campaign setup process

In the campaign setup process the following main steps can be distinguished: match the order with the customer, make the campaign advice (determine keywords), write texts, build the landing pages, and support the implementation. The main steps of the non technical campaign setup are visualized in figure 3.2.

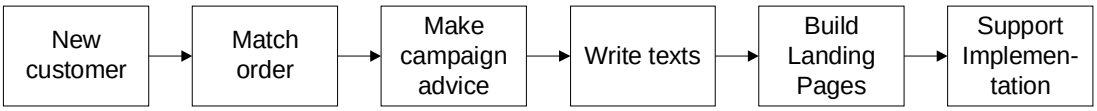

Figure 3.2: Main process steps of the non technical campaign setup

Trigger of the campaign setup process

This process is triggered when a new customer is acquired. A new customer is acquired when Gladior has a signed contract with the customer. The campaign setup process starts when the contract is turned over by the sales department to the campaign management department (of Gladior Direct). In some occasions the signed contract is associated with a customer-visit-report, a report created by the sales person with additional information about the customer and his campaign aims and desires. After receiving the contract, the order is assigned to a campaign manager of Gladior Direct, who is responsible for customer communication and the coordination of the setup process for that campaign.

Matching the order with the customer

The first process step is to match the order with the customer. This step is used to verify the information in the contract (and information in the customer-visit-report). Besides that, this process step is used to obtain additional information about customer aims and desires. During this process step the customer is also informed about the remaining steps in the campaign setup process. Usually this contact takes place by phone. During this process step, all obtained customer information is saved in a customer relationship management (CRM) system.

Making the campaign advice

After the order is matched, a campaign advice is made. The campaign advice is made by a campaign advisor; an employee specialized in determining suited keywords for campaigns. Before creating a campaign advice, the campaign advisor is verbally informed about the campaign by the campaign manager.

The campaign advice is based on the information collected by the campaign manager and the information presented at the website of the customer. This process step is supported by tool named the 'keyword advisor'. This tool analyses and advices about the suitability of a keyword for a certain website.
After the campaign advice is finished, the campaign manager verifies the advice and matches it with the customer.

Writing texts for the landing pages

After the customer has approved the campaign advice, the text writer can write texts for the campaign. These texts have to comply with certain guidelines in order to improve the chances of a successful campaign. Examples of guidelines are the text length, keyword density and uniqueness of the text. When the texts are finished, they are checked (and revised) by the campaign manager before they are sent to customer for verification.

It is also possible that the customer writes his own texts. In that case the campaign manager checks the texts and advices the customer about possible improvement opportunities. When the customer is satisfied about his texts, they are used in the campaign.

Building the landing pages

When the texts for the landing pages are approved by the customer, the landing pages can be built. Both Gladior Direct and other resellers have to order the landing pages at Gladior Partner by an online order module. In order to build the landing pages, three main steps are executed at Gladior Partner. These steps are: processing the order, building the landing pages and completing the campaign.

When the order is processed, the data of the order is verified (on completeness and correctness) and the order is entered into a campaign information database. After the order is entered, the order is allocated to one of the technical campaign managers at Gladior Partner.

The actual building of the landing pages exists of two parts. First, relevant details of the page have to be determined. Two important details are the lay-out of the landing page and the desired action the visitor is persuaded to (which is called the conversion moment). The selected lay-out is based on a page that already exists in the website. The page which has the best suited lay-out for the selected keywords, texts length and conversion moment is selected. The selection for a conversion moment is based on the characteristics of the website and possible preferences of the customer/reseller. Examples of conversion moments are a phone number to call, a link to click on, or an online form to fill out.

After these details are determined, the landing page can actually be built. Building the landing pages exists of copying the lay-out from the selected page, adding search engine optimization codes to the source code of the page, and adding the conversion moment. When the page is finished, the page is feeded into a tool called 'Template Management System' (TMS). This application checks the pages on their basic (technical) quality.

The TMS tool also offers possibilities to easily complete a campaign. The tool can produce a landing page for each keyword of the campaign, and it can add texts to the corresponding landing page.
After the campaign is completed, the technical campaign manager reviews the pages. Attention is paid to the lay-out of the page, the correct adding of the texts and the conformity of the text with the page (is for instance in the text the same conversion moment described as is present on the landing page). After this review the campaign is sent to Gladior Direct or the corresponding reseller for implementation.

Supporting the implementation

When receiving the campaign, the campaign manager of Gladior Direct will first review the landing pages. In the case no important improvement opportunities are detected, the campaign is sent to the customer. Before implementing the campaign, the customer first verifies it. When the customer approves the campaign, the campaign manager will support the implementation of the campaign by informing the customer about the implementation steps that have to be carried out. This process is supported by a tool called the 'implementation checker' (which is also accessible for customers). The 'implementation checker' provides information about implementation status. When the implementation is not fully carried out, this tool also provides information about detected problems and actions to carry out to complete the implementation.

Officially the campaign setup is concluded when the campaign is verified by the customer. But in reality the campaign managers consider this process concluded when the customer has fully implemented the campaign.

At the moment the 'implementation checker' notices that the campaign is (partially) implemented, a technical campaign manager of Gladior Partner will be notified. After the notification, he will manually check the implementation. When improvement opportunities exist for the campaign, the reseller will be informed. Otherwise the setup of the campaign is finished.

A simplified visualization of the campaign setup process is exhibited in figure 3.3. After describing the campaign setup processes in this section, the following section elaborates on the bottlenecks found within the campaign setup processes.

3.3. Bottlenecks in the current campaign setup processes

This section describes the bottlenecks in the campaign setup processes. The bottlenecks are identified using the 'lean manufacturing' and the 'service blueprinting and customer participation' theory. The first part of this section will describe the bottlenecks identified using 'lean manufacturing'. The second part will describe the bottlenecks identified using the 'service blueprint and customer education' theory.

The information used for analysing the processes on bottlenecks is obtained by interviews, conversations and observations of employees involved in the campaign setup processes. An interview scheme can be found in annex 4. All campaign size specific data (like lead time) is based on a campaign of 30 keywords. Campaign data is obtained by conversations and observations of employees, and by tracking of five orders during the campaign setup process. Obtained campaign data is verified by employees involved in the relevant process steps.

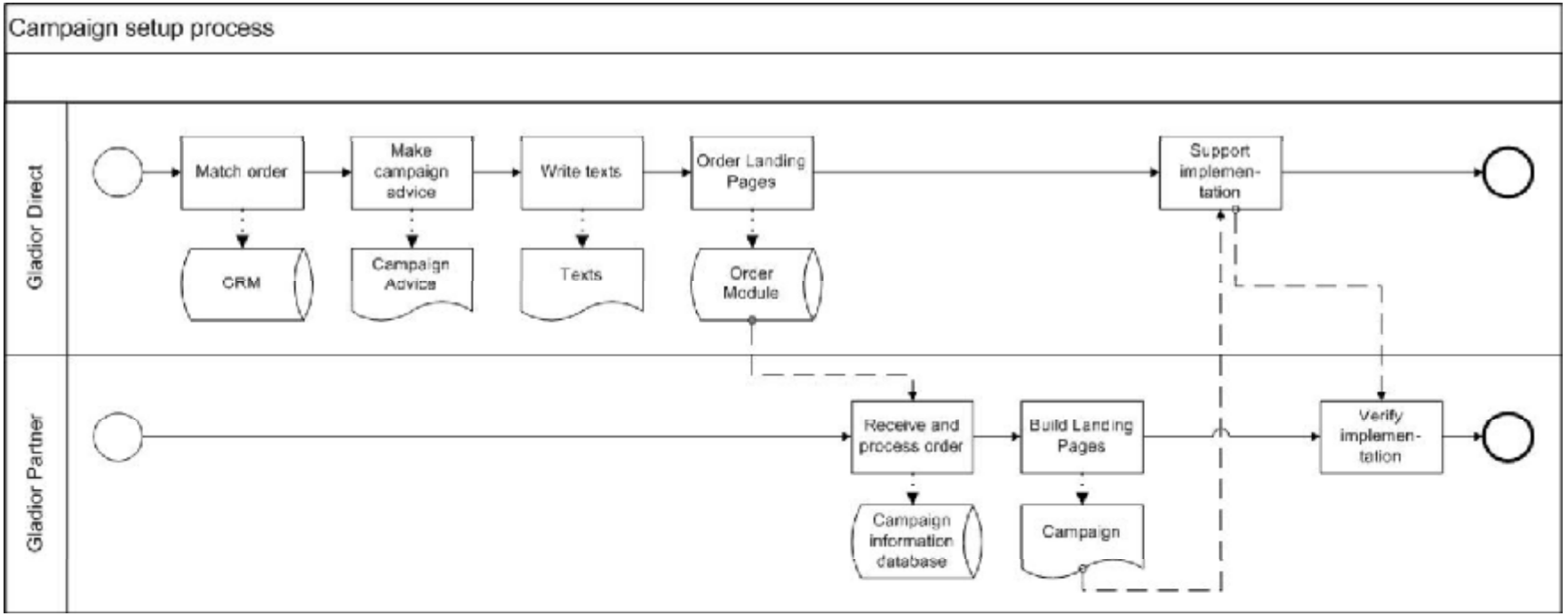

Figure 3.3: Overview of the campaign setup process

3.3.1. Lean manufacturing

The overall aim of lean manufacturing is to minimize the non-value adding activities in the value stream. Principles used to achieve this are minimizing the waste in the value stream, creating process flow and creating pull processes (Womack & Jones, 1996). In this research, the following tools are selected for analyzing and improving processes according to the lean manufacturing theory: natural course in the execution of processes, value stream mapping, lean waste matrix, 'job design and task scheduling', Poka-Yoke, visual management and peer review. This section presents the findings of the process analysis with these tools.

Natural course in the execution of processes

The process description in section 3.2 presented the natural course of the process. According to technical campaign managers from Gladior Partner this natural course is usually not followed. Gladior Direct and other resellers tend to order the landing pages after matching the campaign advice with the customer, so before the texts are written. In those occasions the landing pages are build in parallel with writing the texts. This course is visualized in figure 3.4.

Building the landing pages parallel to the writing the texts can lead to quality problems. The text format and length can influence the lay-out of page. Executing these processes in parallel can cause a situation where the lay-out of the page has to be adjusted when the texts are delivered. Besides that, by delivering the texts later Gladior Partner has to work on the landing pages twice. First the landing pages are build and send for verification to the reseller, while the second time the text are added and the lay-out is adjusted (when necessary). That is more time consuming that directly adding the texts to the landing pages.

In some occasions the deviation from the natural course is even larger. Sometimes Gladior Direct orders landing pages by just sending the URL of the website of the customer, even before a campaign advice is made. In those occasions the quality problems are larger, because the technical campaign manager has no information for determining the campaign characteristics. This problem is Gladior Direct specific, because orders of other resellers must include a campaign advice in order to be processed.

The overall influence on process flow of executing these processes in parallel is rather small. The lead time for building the landing pages is about the same as the lead time for adding the texts and adjusting the landing pages.

All other processes are carried out according to their natural course. Since all process steps require the output from the previous process step, it is not possible to carry out more processes in parallel.

Analysis of the value stream (according to the value stream map)

Together with employees from Gladior a value stream map is created for the campaign setup processes. The value stream map of the non-technical campaign setup process (Gladior Direct) can be found in annex 5 and the value stream map of the technical campaign setup process (Gladior Partner) can be found in annex 6. The value stream map is created by tracking the setup of five campaigns. Also information is verified by interviews and conversations with employees. Additional information is gained by observation of employees.

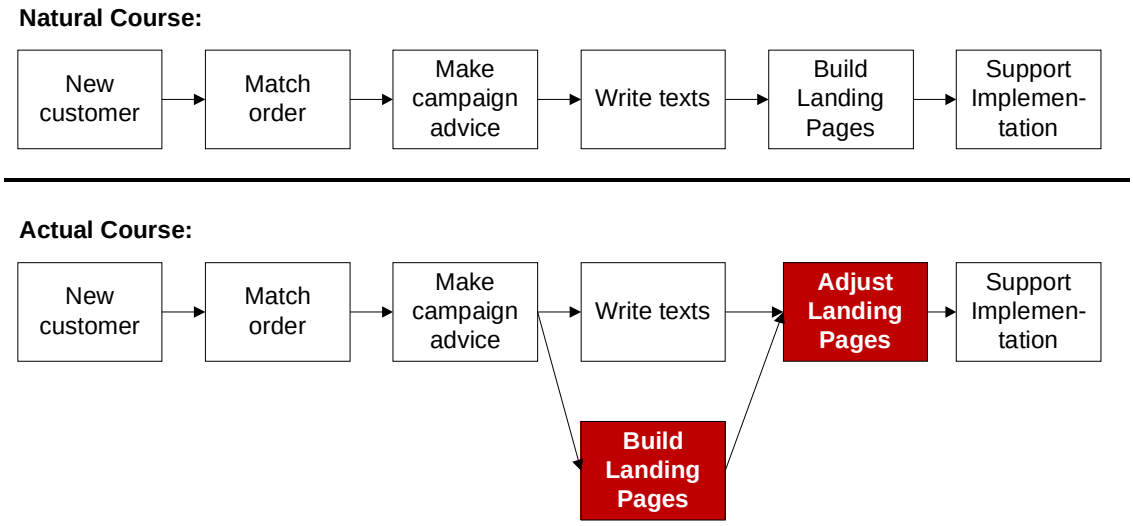

Figure 3.4: Natural versus actual course of the processes

Very outstanding in the value stream analysis is the lack of process flow. The total value added time is almost two days, while the average lead time is 22 days. That even excludes the time required for waiting on customer contributions or responses concerning the campaign advice, texts or the landing pages. So a campaign spends over 90% of its time waiting on the next process step during campaign setup.

According to employees of Gladior a decrease in lead time of the campaign setup can be very favourable. A decrease in lead time can probably lead to a higher experienced quality by customers. According to the management of Gladior the services can be typified as being high in credence qualities (see section 2.2 for an explanation of credence qualities). As a consequence, physical impressions (like the lead time) have a high influence on the quality perception of the customer. A supporting argument of a campaign manager for a shorter lead time is that a shorter lead time also decreases the period between contact moments with the customer, which can increase customer involvement. Besides that, he noted that customers tend to forget more details on their campaign aims, campaign strategy and on verbal agreements when there exists a longer period between contact moments.

The value stream analysis indicated that the lack of flow is not caused by a single process step. At each process step an order has a long waiting time compared to the value added time. Reasons identified for the lack of flow are large inventories (work items still to do) and rework (which decreases capacity available). The lack of flow might also be caused by poor task scheduling.

The time required for reworking campaigns especially decreases the flow at Gladior Partner. An analysis of the task list from a technical campaign manager indicated that in almost all occasions texts are delivered after the campaign is build, and around 90% of the campaigns required rework. This lack of flow at Gladior Partner does not only influence Gladior Direct, but also increases the lead time of the campaign setup processes of resellers.

Lean waste matrix

Based on interviews with employees from Gladior lean waste matrixes are made. The lean waste matrix of Gladior Direct is presented in annex 7, while the lean waste matrix of Gladior Partner is presented in annex 8. During the interview employees were asked which forms of waste they recognized in the process steps they are involved in. Where relevant, information is verified by other employees.

With the lean waste matrix the following prominent problems are identified: quality problems (rework), problems at the process interface between Gladior Direct and Gladior Partner, customer participation problems and unnecessary order processing at Gladior Partner.
Quality problems occur in the texts or the landing pages. The texts are sometimes not commercial enough, or are not in line with the product details of the customer. Quality problems in the landing pages concerned the lay-out of the page, or the alignment between text and conversion moment. When the text and conversion moment do not align the text for instance request the customer to click on a button, while the page does not contain a button.

According to technical campaign managers most of the quality problems in the landing pages are caused by the process interface between Gladior Direct and Gladior Partner. Regularly data is missing in the orders, especially in the orders placed by Gladior Direct. There is usually also no suited lay-out or conversion moment indicated in the order. In those occasions the technical campaign manager makes an assessment about the lay-out and conversion moment for the landing page. But when the reseller or customer does not agree upon the selected lay-out or conversion moment, or when the texts indicate a different conversion moment, rework is required. Another quality problem that regularly occurs is a (small) lay-out difference between the landing page and the website of the customer. In those occasions the customer usually demands correction of the lay-out.

Waiting on customer contributions is another prominent form of waste identified with the lean waste matrix. Due to waiting on customer contributions the lead time of the campaign setup process is further increased. According to campaign managers the lead time is regularly increased by two months. This is caused by waiting several weeks on customer contributions for the approval of the campaign advice, texts or campaign.
A supplementary problem is that the campaign advice, texts or landing pages sometimes are not approved by the customer. In many of those occasions the customer demands adjustments that are actually less suited. Carrying through those adjustments usually lead to a poorer (expected) campaign performance.

The last prominent form of waste occurs when the order for the landing pages is processed at Gladior Partner. The orders have to be processed manually, whereby information is transferred from one database into another database. This is actually a double entry of data, because this transfer of information from one database into another database can also be automated. This process step currently requires about ten minutes per order.

In figure 3.5 an overview is visualized of the bottlenecks identified so far.

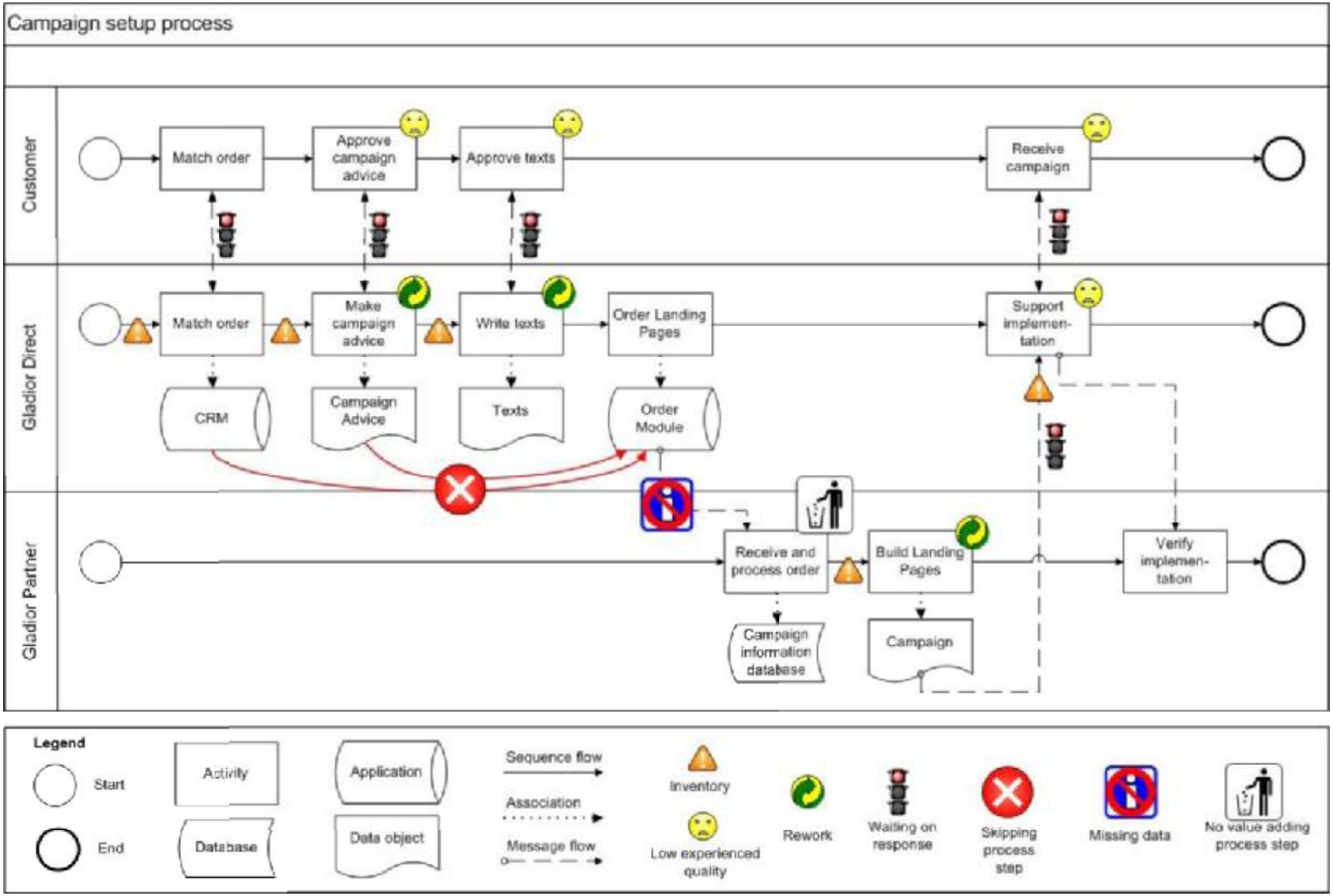

Figure 3.5: Bottlenecks in the campaign setup processes

Job design

In this research, three types of job design are distinguished: job simplification, job rotation and job enlargement.
At Gladior Direct the campaign advisors and text writers are only responsible for one (type of) task, while the campaign managers carry out multiple tasks during the campaign setup. Besides that, campaign managers are also responsible for other processes at Gladior Direct, like campaign evaluations and the coordination of campaign adjustments. Therefore the job design at the campaign management team of Gladior Direct can best be typified as a combination of job simplification and job enlargement.

At Gladior Partner all technical campaign managers have resellers assigned to them. A technical campaign manager is responsible for carrying out all tasks generated by those resellers, including setting up campaigns, evaluating campaigns and reseller support. Therefore the job design at the Quality and Service department of Gladior Partner can best be typified as job enlargement.

Task scheduling

At Gladior Direct one of the campaign managers (the planner) is responsible for planning. When an order is transferred from sales to campaign management the planner assigns a campaign manager, campaign advisor and text writer to the campaign. Hereby the planner attempts to take into account his perception about the available capacity of an employees who whom a task is assigned to. When a tasks is completed, the relevant employee 'pushes' the order to the next employee assigned to the campaign.
Gladior Direct does not use a task scheduling procedure that takes into account the priority of tasks or the available capacity. Besides that, the planner does not use an input buffer, but assigns tasks to employees the moment these tasks become available. As a consequence the process interfaces operate as push processes (even though the overall process can be typified as pull, since it is triggered by the customer). The individual process steps operate as push processes because the available capacity at the next process step is not taken into account when assigning tasks.

Due to applying job enlargement at Gladior Partner, each technical campaign manager is responsible for serving a number of resellers. At Gladior Partner no task scheduling procedures are used and everyone is responsible for his own planning. This causes a kind like situation as at Gladior Direct. The overall system is pull (since it is customer induced), but between process steps the process operates as a push process.
Because the activity of a reseller can fluctuate per period, this usually generates an unevenly distribution of tasks over the technical campaign managers. This not only results in a situation where the time required to deliver landing pages depends on the total activity of all resellers assigned to that technical campaign manager. It also results in a situation in which some technical campaign managers have so many orders for landing pages, that they cannot spend sufficient time on campaign evaluations and handling of support.

Additional lean manufacturing tools

The remaining part of this section will discuss the appliance of Poka-Yoke, peer review and visual management in the campaign setup processes.

The presence of Poka-Yoke, Visual management and peer review within the process steps is exhibited in table 3.1, together with some other points of attention of this research.

	Match order	Make campaign advice	Write texts	Build landing pages	Support implementation
Flow	X	X	X	X	X
Pull	√	X	X	X	X
Natural course	√	√	X	X	√
Poka-Yoke	X	√	X	X	√
Visual Management	X	X	X	X	√
Peer review	X	√	√	X	√

Table 3.1: Current presence of the criteria within the processes

As can be seen in table 3.1, Poka-Yoke tools are only used when making the campaign advice and for supporting the implementation. The campaign advice is made using the "keyword advisor" tool. According to data of Gladior, keywords with a positive advise in this tool have a better performance than keywords that have a negative advice. The implementation is supported by a tool called the 'implementation checker', which advises the customer about the steps to take during the implementation of the campaign. It also indicates if the process steps carried out so far are carried out correctly.

Visual management is only applied during the implementation. The 'implementation checker' tool provides indications about the implementation status and progress. Thereby this tool increases the awareness of the customer about the progress made during the implementation. Till the moment the campaign is fully implemented, the 'implementation checker' also indicates the progression (percentage) of the implementation.

Peer review is currently not applied when matching the order and building the landing pages. This can especially be a problem for the landing pages, because Gladior Direct (and almost all other resellers) and customers do not have enough knowledge to analyse a landing page on its actual quality. As indicated in section 2.2, a specific characteristic of services is that only other professionals can assess the actual quality of the service. Therefore quality problems in the landing page (except for lay-out problems) will not be detected until the campaign is evaluated. But because the campaigns are evaluated by the same technical campaign manager as by whom the landing pages are build, the question remains if such quality problems are detected during the evaluation.

This section analyzed the campaign setup processes according to the 'lean manufacturing' theory. This analysis indicated that customer participation problems are partially responsible for the experienced quality problems. In the next section the campaign setup processes will be analyzed according to the 'service blueprinting and customer participation' theory, in order to find more background to the causes of these problems.

3.3.2. Service blueprinting and customer participation

The aim of 'service blueprinting and customer participation' is improving the quality of services and customer interactions during the service delivery process, in order to increase the organizational effectiveness and customer loyalty. This section will discuss the most important findings from the analysis of the customer induced versus customer independent activities, customer participation, passive versus active information, customer education and the media richness of contact moments. This section starts with a description of the service blueprint of the campaign setup processes.

Service blueprint of the campaign setup processes

The service blueprint of the campaign setup processes is visualized in figure 3.6. In this figure are the activities executed by the customer presented above the line of interaction. The activities executed by Gladior are presented underneath the line of interaction.
Activities executed by employees that have direct customer contact are presented above the line of interaction. The process steps 'make the campaign advice' and 'write texts' are presented between the line of visibility and the line of internal interaction because the campaign advisors and text writers do not have direct customer contact. But because the campaign advisors and text writers are directed by campaign managers who have direct customer contact, these process steps are not shown below the line of internal interaction. The activities of Gladior Partner are presented under the line of internal interaction, since Gladior Partner operates as a supplier for Gladior Direct.
There are no processes indicated under the line of control, because management processes are outside the scope of this research (and do not add value to the analysis). This blueprint is used as the basis for the remaining part of this chapter.

Customer induced versus customer independent activities

As indicated in section 3.2 this process is triggered by the customer. Therefore this process can be typified as a customer induced process.
Customer induced activities are associated with production risk: the risk that a service provider cannot fulfill its promises towards the customer (see section 2.4.2). Fulfilling customer promises becomes more challenging with a larger amount of customer participation and more contact moments with the customer (Fliess & Kleinaltenkamp, 2004). The number of contact moments with the customer in this process will be analyzed in the next section.

Customer participation versus standardization

In order to analyze the most suited amount of customer participation in this process, first the processes have to be typified according to the typology of Fliess & Kleinaltenkamp (2004).
The customer has relatively little process knowledge compared to Gladior Direct. The Dutch search engine marketing market is still young and immature (see section 1.1.2.), due to which (new) customers have relatively little knowledge of search engine marketing. On the other hand has Gladior Direct already served many customers. Therefore this can best be typified as a 'supplier dominated service process'. This relation can move from a 'supplier dominated service process' to a 'mature service relationship process' when customers have purchased search engine optimization services for a long(er) period. On the other hand, best practices for search engine optimization change rather fast. As a consequence it can also be expected that this process remains a 'supplier dominated service process' for all customers, because Gladior will keep more knowledge than customers about the ideal process participation.
Even though Gladior Partner possesses more expertise concerning search engine optimization, both parties are experienced in setting up campaigns. As a consequence both parties already have sufficient process knowledge. Therefore this interface can best be typified as a 'mature service relationship process'. The characterization of the service processes are visualized in figure 3.7.

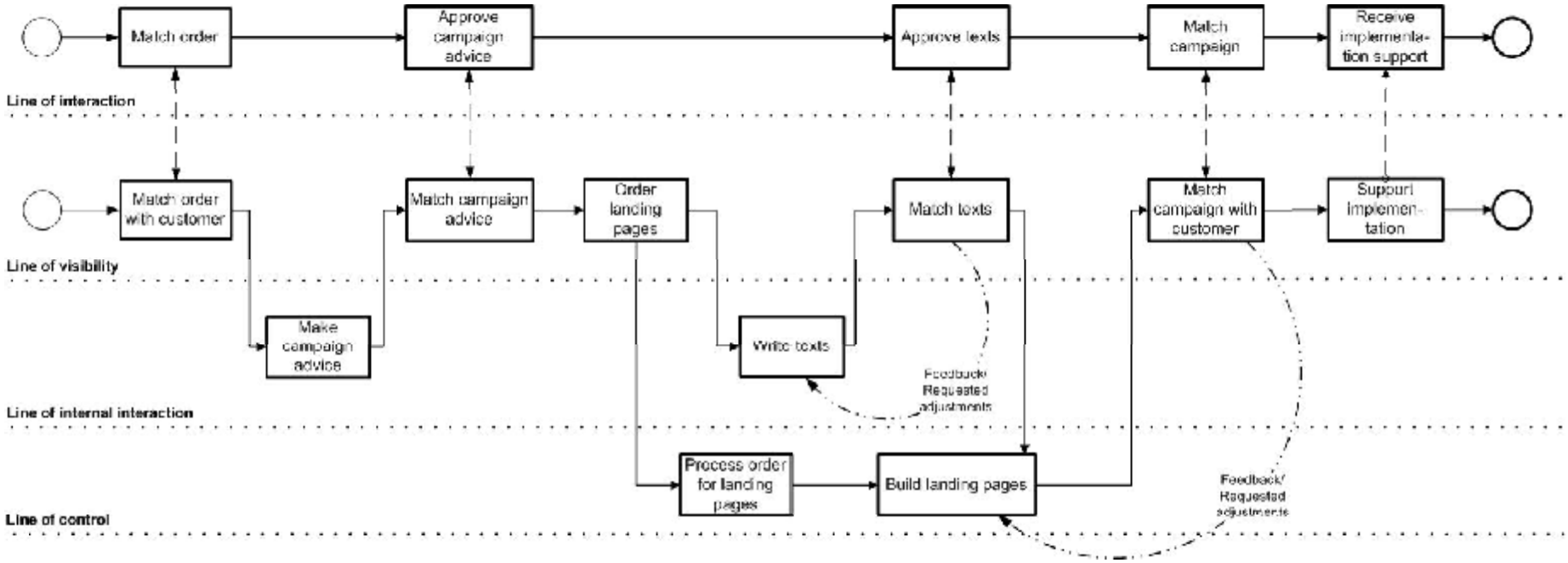

Figure 3.6: Service blueprint of the campaign setup processes

Remarks:

- The processes are presented according to their actual course, not their natural course, in order to improve the analysis of the bottlenecks.
- Matching the campaign and supporting the implementation are visualized as two independent processes. This distinction supports the analysis of the (media richness of the) contact moments with the customer.
- When the customer does not approve the campaign advice, the customer usually demands the use of self determined keywords. So when the campaign advice is not approved, usually no adjustment of the advice is required. Therefore no flow of feedback is visualized from matching the campaign advice to making the campaign advice.

The customer currently has five interaction moments in the campaign setup process. These interaction moments are: match the order, match the campaign advice, match the texts, match the campaign and implement the campaign (see figure 3.6). Three of these contact moments are used for the verification of campaign items, even though the customer also has the possibility to influence the campaign at those moments.
During the implementation of the campaign the campaign success can be influenced most. Executive tasks are delegated to the customer at that process step. The extent to which the customer executes the implementation is determinant for campaign success. The 'implementation checker' tool can be used by the customer to support the campaign implementation.

Problems concerning customer participation occur especially during the 'matching of the campaign advice' and the 'implementation of the campaign'. As indicated before, customers do sometimes not accept the campaign advice and demand the use of unsuited keywords. Even though this might caused by a knowledge asymmetry between Gladior and the customer, this can negatively influence campaign performance.

Delegating the implementation of the campaign to the customer is currently experienced as a necessity. Access to the webspace of the customer is required in order to implement the campaign. Most customers do not provide this access. The implementation is further complicated because the web developer of the customer usually implements the campaign. So Gladior informs the customer about how the campaign should be implemented, while the customer transfers this information to the web developer. So the customer is an additional link in the communication chain. In some occasions Gladior Direct can also directly contact the web designer (with customer approval). In most cases that is not desired by the customer, because then the customer cannot influence the tasks for the web designer anymore (for which the web designer charges the customer).

At the time of this research, improvement opportunities for the implementation existed for two-third of the campaigns. One-third of the campaigns had such shortcomings that the campaign performance was negatively influenced. Data from the 'implementation checker' indicated that a fully implemented campaign attracts almost 50% more visitors per keyword per month. Besides that has fully implemented campaign on average 30% more keywords within the top 10 results of Google. This data comprises all campaigns. So some of the campaigns can have had a complete implementation in the past, but do not meet the current guidelines anymore.

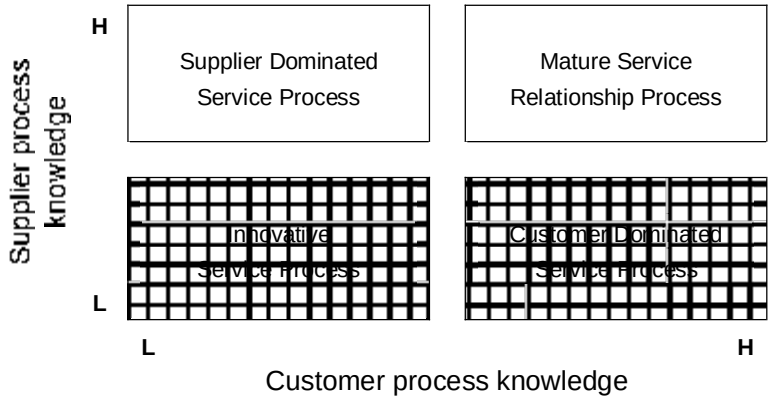

Figure 3.7: Characterization of the process knowledge of the service processes

Further research is required to find the actual cause of these implementation problems. Possible causes indicated by employees are: unawareness of the customers about the required participation when signing the contract, costs associated with the implementation of the campaign by the web developer, unclear information about the implementation, usability problems concerning the use of the 'keyword advisor', or dissatisfaction with the landing pages.

In the cooperation between Gladior Direct and Gladior Partner the current number of interaction moments seem to be sufficient. In that cooperation rarely problems occur due to a lack of process knowledge, besides the earlier named problem (the skipping of process steps by Gladior Direct).

Availability of active information

Next to the process knowledge of the customer, Gladior Direct and Gladior Partner, the efficiency of the campaign setup process also depends on the moments new active information becomes available in the process. The earlier new active information becomes available in the process, the more likely rework can be prevented later on in the process (Fliess & Kleinaltenkamp, 2004).

In the current situation many active information is gained in the sales process. The sales person requires much information in order to determine which solution solves the customer problem best. But usually this information is lost in the interface between the sales process and campaign setup process, because this transfer is usually not accompanied with a customer-visit-report or an oral instruction. So this information is not processed further in the process.

During the matching of the order new active information becomes available, about for instance campaign goals and aims. From this information usually follows that the campaign size of the customer is suited for these aims. Other active information that gained during the matching of the order is usually required in the remaining part of the process.

Sometimes new active information becomes available when matching the campaign advice. When the customer accepts the campaign advice no new active information becomes available. But when the advised keywords are not accepted, the customer usually demands the use of other keywords. Since the selected keywords can influence the way the campaign setup, this can be considered as a release of new active information.

During the matching of the texts usually no new active information becomes available. It is exceptional that the texts do not meet the products or services of the customer. When the texts do not meet the products or services of the customer, the texts have to be adjusted.

When the campaign is matched with the customer, new active information about customer desires for the landing page sometimes can become available. That information can include the customer desires about the lay-out or conversion moment used. This information is usually transferred to Gladior Partner.
During the support of the implementation usually no new active information becomes available.

At Gladior Partner usually new active information becomes available after sending the landing pages to the reseller. At that moment new information about customer desires can be presented. In those occasions such information was not included in the order, like the lay-out or the conversion moment. So especially Gladior Partner can receive new active information too late in the process, which can cause rework. But also some information becomes available when matching of the campaign advice, which can make campaign items created earlier in the process useless.

Customer education

Customer loyalty and process efficiency can be improved by informing customers about how to participate in the service delivery process (Bell & Eisingerich, 2007a, 2007b). So far this chapter has identified all kinds of problems related to a lack of customer education by Gladior. The lean-waste matrix for example indicated that late customer contributions cause delays in the process. Besides that, customers sometimes demand the use of unsuited keywords when matching the campaign advice.

Currently not much attention is paid by Gladior to educate customers about business processes and desired customer interactions. According to the sales persons, the sales processes focus on finding a suited solution for the customer. Informing the customer about his desired participation the business processes is not considered important.

The first moment the customer is informed about the desired customer participation is when the order is matched. During that process step the customer is informed about the multiple steps in the campaign setup process. At that time the customer is also informed about his participation in this process, for instance for verifying campaign items. So the customer is informed about the processes and the desired participation after the contract is signed. If the amount of participation is unexpected, the customer might not be focussed on the participation. Next to that, it could also negatively influence the perceived quality by the customer.
When the order is matched, no appointments are made with the customer about what should be verified when. At the moment a part of the campaign is finished, it is just send to the customer. Even then no deadline is set with the customer for his input. In consequence the customer might not set a high priority for delivering the requested input.

Media richness of the contact moments

A simplified presentation of the service blueprint is exhibited in figure 3.8. In this figure the commonly used communication mediums per process step are indicated. To improve the clarity of the figure, the contact between the customer and his web designer is also visualized.
This section describes the most important findings from the analysis of the used communication mediums in the campaign setup process.

The order is matched with the customer by phone. In this process step many new active information has to be collected. Because visiting the customer is much more time intensive (due to travel times), this medium seems to be most suited for this contact moment. The same accounts for supporting the implementation, where new active information for the customer becomes available.

The campaign, campaign advice and texts are currently send by e-mail to the customer. This e-mail is usually not associated with a phone call. Most customer responses take place by fax or e-mail. Only the customer response for the matching of the campaigns takes place by a phone call. E-mail and fax are not a very rich communication medium. Therefore e-mail and fax are less suited for convincing the customer (or sharing know-how) than contact by phone or face-to-face contact. Since in the current situation problems occur in the response times and the quality of the customer participation at these process steps, the used communication mediums should be reconsidered. Besides that, matching the campaign advice currently contains many unnecessary actions for the customer, since the customer has to print, sign and fax the document.

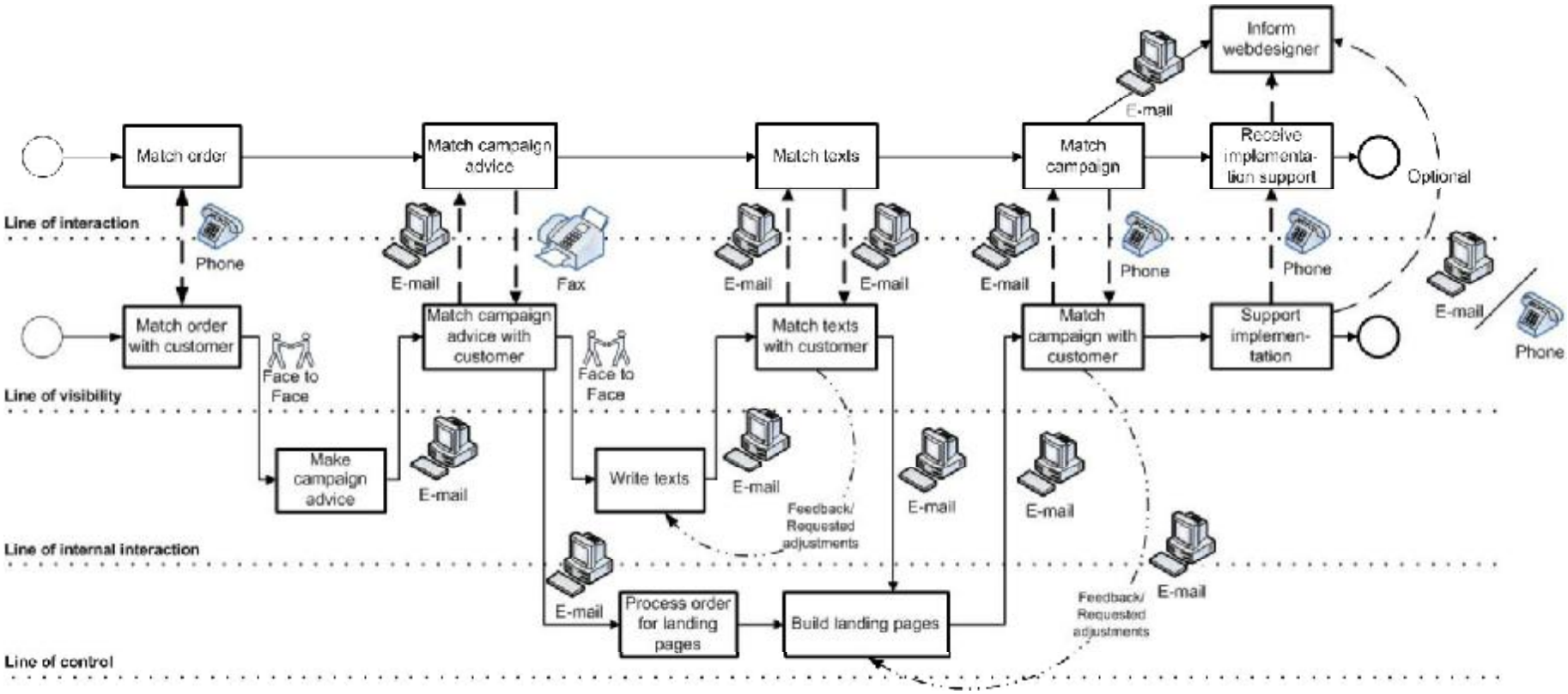

Figure 3.8: Service blueprint of campaign setup processes with communication mediums

The contact moments between Gladior Direct and Gladior Partner usually take place by e-mail. Most resellers use the online order module for placing orders. Only Gladior Direct sometimes puts orders by e-mail. After the order is placed, there is no contact with the reseller for further matching the order.
For the contact moments between Gladior Direct and Gladior Partner e-mail seems the most suited communication medium. The information is mainly passive and both parties have much process knowledge. Indistinctness between Gladior Partner and Gladior Direct usually only occurs when the customer demands adjustments to the landing pages, or when unusual problems concerning the implementation are experienced. This indistinctness mainly occurs when Gladior partner and the reseller have a different opinion, or when the message allows for different interpretations.

After the analysis of the campaign setup processes according to the 'lean manufacturing' and 'service blueprinting and customer participation' theories, the next section provides an overview of the identified problems.

3.4. Focus area's for improving the campaign setup processes

The previous section identified several problems in the campaign setup processes. In order to find solutions for the identified problems, the problems have to be grouped by common causes. In that way solutions can be formulated for the actual causes of the problems, instead of for the symptoms of the problems.

The campaign setup processes contribute in two ways to a negative customer perception. First this process has no flow. The long campaign setup period can have a direct effect on the quality perception of the customer. But indirectly the long campaign setup period also decreases the period in which the campaign is active during the first contract year (see section 1.2.1). Second this process contains many quality problems, both in the technical quality as in the quality of customer contributions. In order to find causes of the problems a cause-and-effect diagram of the identified problems is made. This cause-and-effect diagram is visualized in figure 3.9.

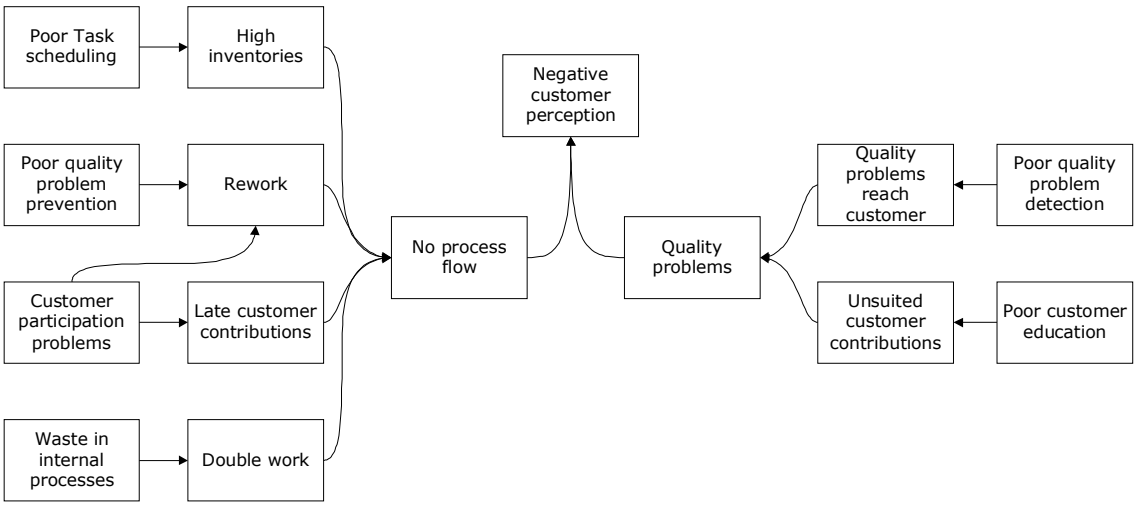

Figure 3.9: Cause and effect diagram of the problems in the campaign setup process

Based on the cause-and-effect relations six root causes of the problems are found. The root causes are problems at the source of the observed problem. As can be seen in figure 3.9 the root causes are: poor task scheduling, poor prevention of quality problems, customer participation problems, waste in the internal processes, poor detection of quality problems and poor customer education.

As can be seen in figure 3.9 rework is not only caused by a poor prevention of quality problems, but also by customer participation problems. The rework caused by a poor prevention of quality problems relates to internally made errors. The rework due to customer participation problems is caused by new active information that becomes too late available in the process, due to which finished campaign items have to be adjusted.

Focus area's

Since the detection and prevention of quality problems are usually combined in literature (see for instance Reid & Sanders, 2002), these causes can be combined to a single focus area. Also customer participation and customer education are related in literature (see for instance Fliess & Kleinaltenkamp, 2004) and can therefore be combined in a single focus area.

Based on the root causes identified for the problems, the following focus areas for the solutions can be distinguished:

- **Scheduling of tasks**. This focus area comprises all problems concerning the task allocation and capacity planning.
- **Prevention and detection of quality problems.** This focus area incorporates all problems concerning the detection and prevention of problems in the 'technical' quality.
- **Customer participation.** This focus area comprises all problems concerning the cooperation with the customer.
- **Waste in the internal processes.** This focus area incorporates all problems and solutions concerning tasks that do not add direct value or are executed double (due to a poor internal cooperation).

The remaining part of this section provides an overview of the most important problems identified for each focus area. These problems are identified and described in section 3.3 and follow from the analysis of the campaign setup processes.

Scheduling of tasks

The problems concerning task allocation and capacity planning identified in this research are:

- The current job design at Gladior Partner causes an uneven distribution of the workload.
- The process can be typified as a push process between process steps.
- The task scheduling does not take into account the priority of tasks and the available capacity.
- Employees have a relative high inventory of tasks still to carry out (large inventories between process steps).
- There is no visual management applied, do to which the actual process status remains unclear for most employees. As a consequence there is little insight in the number of orders in the process. Besides that, there is little insight in the progress of those campaigns (which order is at which process step).

Push process steps and a high inventory of tasks can be considered as a (partial) consequence of the current job design at Gladior Partner, the scheduling of tasks and the absence of visual management. By solving these three problems, the available capacity can be taken into account when assigning tasks. In that way the process can operate as a pull process. Next to that, when the available capacity is taken into account, also high inventories between process steps can be prevented. So the solutions for this focus area should focus on the job design at Gladior Partner, task scheduling and visual management.

Prevention and detection of quality problems

The following problems are identified for the prevention and detection of quality problems:

- The natural course of the process is not always followed, causing rework later in the process.
- There is only a limited use of Poke-Yoka in the processes.
- The process steps 'match the order' and 'build the landing pages' are not peer reviewed.
- Quality problems in the texts and landing pages reach the customer. This causes rework and can negatively influence customer perception.

Quality problems that occur or reach the customer due to internally made errors are caused by: not following the natural course of the process, not applying Poke-Yoka or not applying peer review. So by solving these problems it can also be prevented that quality problems in the texts and the landing pages occur, or reach the customer.

Customer participation

The following participation problems between the customer and Gladior Direct are identified:

- Waiting on customer contributions.
- Little customer education about the business processes of Gladior.
- There are no appointments made with the customer about when campaign items can be expected, and when customer input is required.
- Customers deliver unsuited input for the campaign advice, which is most likely due to a knowledge asymmetry between Gladior and the customer.
- New active information becomes available when matching the campaign advice.
- New active information becomes available when matching the campaign with the customer.
- Poor or no implementation of campaigns by customers.
- Use of unsuited communication mediums for matching campaign items with the customer.

From the indicated problems the first three seem to be interrelated. The waiting on customer contributions can be caused by too little customer education about the business processes and by not making appointments with the customer. So these problems have to be considered in combination to come to a solution. Besides that, the unsuited input for the campaign advice and presentation of new active information when matching the campaign advice are also interrelated problems. So one salutation can also solve those problems.

Waste in the internal processes

The following wastes in the internal processes are detected in this research:

- The transfer of an order from the sales department to the campaign management department is usually not associated with a customer-visit-report.
- Double entry of data for transferring an order into customer database at Gladior Partner, which requires time but does not any value to the campaign.

After describing the focus areas for the solution, the next section will provide a summary of the chapter.

3.5. Chapter summary

This chapter described the current situation of the campaign setup processes at Gladior. The current situation is described by discussing the primary processes of Gladior, the current execution of the campaign setup processes, and the problems in the campaign setup processes.

Gladior has the following primary processes: customer acquisition, campaign setup, campaign monitoring, campaign evaluation, 'campaign adjustment and maintenance' and customer/reseller support. These primary processes are divided over Glarior Direct and Gladior Partner.

The campaign setup process is triggered by the acquisition of a new customer. The main steps of the campaign setup process are: match the order with the customer, make the campaign advice, write texts for the campaign, build the landing pages and support the implementation.
The landing pages are build at Gladior Partner, while all other process steps are executed at Gladior Direct. The campaign advice and the texts are matched with the customer, before they are transferred to the next process step. The process step 'support the implementation' can be split up in two different steps, the verification of the campaign by the customer and supporting the customer with the implementation of the campaign.

After analysing the campaign setup process according to the 'lean manufacturing' theory, the following problems are identified:

- No process execution according to its natural course.
- A lack of process flow.
- Waiting on customer contributions.
- Much rework to campaign items due to quality problems.
- An unsuited job design at Gladior partner.
- Poor task scheduling.
- Absence of Poka-Yoke at several process steps.
- Absence of Peer review at several process steps.
- Absence of visual management.

After analysing the processes according the 'service blueprinting and customer participation' theory, the following problems are identified in the campaign setup process:

- Poor customer contributions due to a knowledge gap between Gladior and the customer.
- A lack of customer education in the sales processes.
- Customer interaction problems at some process steps.
- Losing active information between the sales process and the campaign setup process.
- New active information becomes available too late in the process.
- Unsuited communication mediums are used when matching campaign items with the customer.

These problems are categorized into four focus areas, being: task scheduling, prevention and detection of quality problems, customer participation, and waste in the internal processes.

The next chapter will describe solutions for problems identified in this chapter.

4. Solutions for the identified bottlenecks

After the previous chapter identified problems in the campaign setup processes, this chapter describes solutions to these problems. The solutions will be described according to the focus areas (problem categorization) recognized in section 3.4. Where relevant solutions for Gladior Direct and Gladior Partner will be distinguished. Solutions for Gladior Direct are directed to the campaign management department and solutions for Gladior Partner are directed to the Quality and Service department, unless indicated otherwise.

4.1. Improve the scheduling of tasks

In the previous chapter problems concerning the job design at Gladior Partner, the scheduling of tasks and the absence of visual management are identified as main problems in this focus area. These problems together contributed to a lack of flow in the campaign setup process.
This section will describe the solution(s) for improving the task scheduling of the campaign setup process. These solutions will be described by the job design at Gladior Partner, task prioritizing procedures and visual management.

4.1.1. Job design at Gladior Partner

The current job design at Gladior Partner causes an uneven distribution of the workload over the employees. This is an indication that another type of job design might suit the situation at Gladior Partner better. In this research, the following types of job design are distinguished: job simplification, job rotation and job enlargement.

At the Quality and Service department the following main tasks can be distinguished: setting up new campaigns, monitoring & evaluating campaigns, adjusting campaigns and handling support. Currently employees have resellers assigned to them. Employees are responsible for carrying out all these tasks for those resellers. Therefore the current job design at Gladior Partner is typified as job enlargement.

Job simplification is not expected to improve operations at Gladior Partner. Besides the question if job rotation will improve the campaign setup processes, such a job design might decrease the job satisfaction due to monotonous tasks. Since there is a shortage of search engine optimization specialists in the Netherlands, that might cause problems for attracting and maintaining employees.

Job rotation might suit the situation better than the current job enlargement system. Instead of being responsible for carrying out all tasks for specific partners, employees are assigned to a certain type of task for some time. Hereby technical campaign managers carry out that type of task for all resellers during that period. In such a system the employee is rotated to another task one or several times a day.

By applying job rotation the workload of a technical campaign manager is less influenced by fluctuations in the workload generated by one or a couple of resellers. Fluctuations in the workload generated by a certain task can be neutralized by assigning (temporarily) more capacity to that type of task. It also becomes easier to assure that the highest priority tasks are carried out first, as long as this type of job design is accompanied with a task prioritizing procedure.

In the current situation employees tend already to group similar tasks together, like setting up campaigns or campaign evaluations. Since job rotation operates in the same way, it is not expected to affect job satisfaction in a negative way. Instead, due to a better division of the workload employees might experience less stress. Besides that, it could actually lead to more focus by the employees. A technical campaign manager indicated that he is regularly disturbed by phone calls with support questions during the execution of his tasks (like setting up campaigns). In the new situation one technical campaign manager responsible for handling all support. In that way the other technical campaign managers can focus on their task.

No problems are expected with answering campaign questions or carrying out campaign evaluations when job rotation is applied. All relevant campaign information is saved in the campaign information database. Also do employees not have experienced any problems with handling questions about campaigns assigned to colleagues, for instance during the holiday season. So with the job rotation system this is also not expected to be a problem.

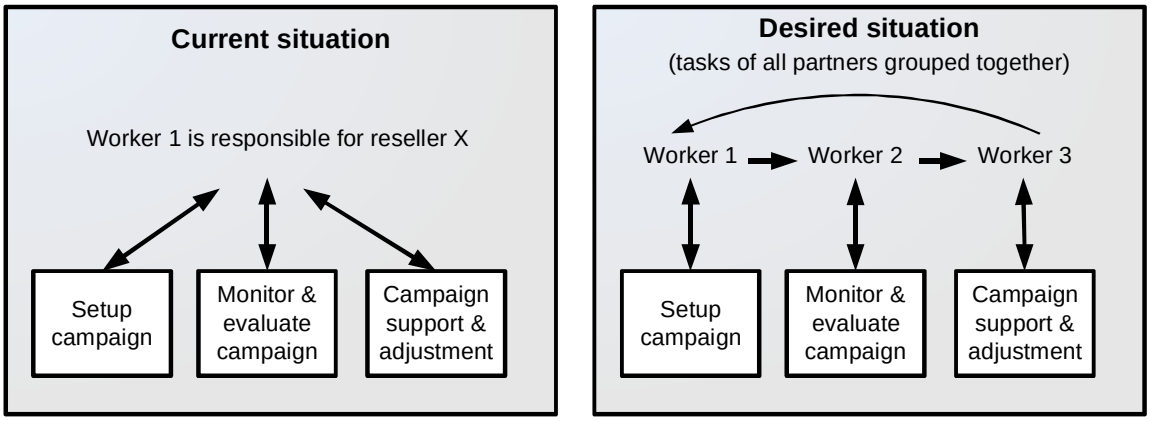

Figure 4.1: Current and desired job design at Gladior Partner

Figure 4.1 presents an overview of the change in job design. In annex 9 a capacity allocation scheme is visualized that can be used to divide the different categories of tasks over the employees (to implement this system). In order to make the new form of job design at Gladior Partner effective, employees must be able to determine which task has most priority. The next section will elaborate on task prioritizing procedures that can be applied to determine the priority of tasks.

4.1.2. Task prioritizing procedures

The analysis of the campaign setup processes denoted that the process has no flow, process interfaces operate as push processes, large inventories of tasks exist between process steps, and there is no task scheduling procedure is used. According to the 'lean manufacturing' theory, process flow can be improved by creating pull processes and an input buffer (George, 2003).

A pull process that operates according to the 'lean manufacturing' principles collects all tasks in an input buffer, so the number of orders/campaigns actually in the process is limited. Only when a tasks is completed, a new task can be released from the input buffer. As a result tasks are not released from the input buffer until capacity is available at the next process step. This is the essence of a pull system. When a task is released from the input buffer, it can be continuously be worked on (George, 2003).
Theoretical options for releasing tasks from an input buffer are: 'first-in-first-out', 'last-in-first-out', or a highest priority method (Hopp & Spearman, 2001). According to Pinedo (2005) a highest priority method should use a weighted criteria method to determine which task should be released from the input buffer next.

A 'first-in-first-out' or 'last-in-first-out' method operates rather straightforward. For the highest priority method different algorithms exist that are suited for different situations (Pinedo, 2005). Which algorithm suits a situation best depends on the following factors (Pinedo, 2005):

- Does the planning of a task contain (much) slack. When there is no slack, the time between the order release and the delivery time is equal to the expected required production time.
- Is there a limited number of employees.
- Can all employees execute all types tasks. If that is not the case, not all tasks can be assigned to all employees.

Task prioritizing procedure for Gladior Direct

In a discussion with the management of Gladior about an input buffer, management indicated that a task prioritizing procedure should prioritize tasks based on contract date and campaign size (number of keywords). That implies that the 'first-in-first-out' and 'last-in-first-out' methods are unsuited, because these methods cannot prioritize campaigns based on their size. Therefore the highest priority method is most suited for Gladior Direct. This highest priority method should have the following details:

- Be suited for task with slack. The allowed order delivery time is longer than the processing time.
- Take into account a limited number of employees to which tasks can be assigned to.
- Take into account that not all employees execute all tasks, due to the specialization of the campaign advisors and the text writers.

In order to complete the task prioritizing procedure, the maximum number of tasks that can be assigned to a single employee must be determined. According to several text writers and campaign advisors it is favourable to work on multiple tasks at the same time. Making a campaign advice or writing a text requires inspiration. To obtain inspiration they sometimes work on another task.
That indicates that the maximum number or tasks that can be assigned to a single employee should be more than one. Based on collected data in this research the maximum number of tasks cannot be determined. Therefore further research is required. On the other hand Gladior could also use trial and error to find the number of tasks works well in practice.

The planner of the campaign management team indicated that such a task prioritizing procedure should also have the possibility to determine the priority of campaign adjustments (campaign advice or text). Otherwise multiple task prioritizing procedures should be applied to prioritize tasks from different processes. That would not improve the usability or acceptance of the procedure.

Promote the flow of the campaign setup processes at Gladior Direct

The combination of solutions presented in this chapter can be used to promote the flow of the campaign setup processes. An important point of attention for creating process flow is that the input buffer must be applied strictly. When too much tasks are assigned to employees, the high inventory levels between process steps stay into existence. At maximum the amount of tasks that can be completed in one workday should be allocated. Otherwise the process interfaces maintain to operate as push processes.
The time required to complete a task is very variable and depends among other things on campaign size. Executing the tasks that have the highest priority can be assured by limiting the number of tasks assigned to employees. Only in that way the process step interfaces will operate as a pull system.

Task prioritizing procedure for Gladior Partner

Like at Gladior Direct, a highest priority method is also most suited task prioritizing procedure at Gladior Partner. At Gladior Partner the priority does not only depend on the campaign size, but also on the reseller that put the order. The highest priority method should have the following details:

- Be suited for tasks with slack, because the allowed delivery time is longer than the processing time.
- Take into account a limited number of employees to which tasks can be assigned to.
- All tasks can be assigned to all employees, since all technical campaign managers can execute all tasks. Due to the task rotation, campaigns are not bounded to a certain technical campaign manager anymore.

This concept for prioritizing tasks is presented together with the concept for job-rotation to the Quality and Service coordinator and the technical campaign manager responsible for planning. They indicated this combination of solutions can improve the process flow at Gladior Partner. In order to make the task prioritizing procedure suited for the department, it should also contain the possibility to determine the priority of adjustments in existing campaigns. Otherwise multiple procedures should be applied for determining priorities.

Annex 10 presents the trial versions of the task prioritizing procedures created during this research. In figure 4.2 the differences between the current and desired task allocation procedure are visualized.

In order to promote the flow in this process most it would be best to determine on a daily basis how many campaigns should be setup and how many capacity should and can be allocated to setting up campaigns. Based on the available capacity orders should be allocated to the employees that are that day responsible for setting up campaigns. The time required to fulfill the number of allocated orders should never exceed the available capacity for that day.

Advantages

Besides the earlier named advantages of this task allocation procedure, this system limits the number of tasks in the process. In that way the large inventories between process steps can be prevented, increasing the process flow. It also indicates how many tasks are in the process, something that unknown in the current situation. So the overview of how many tasks are where in the process is also promoted. Last but not least it also provides more insight in the available capacity, due to the insight in how many tasks are (already) assigned to an employee.

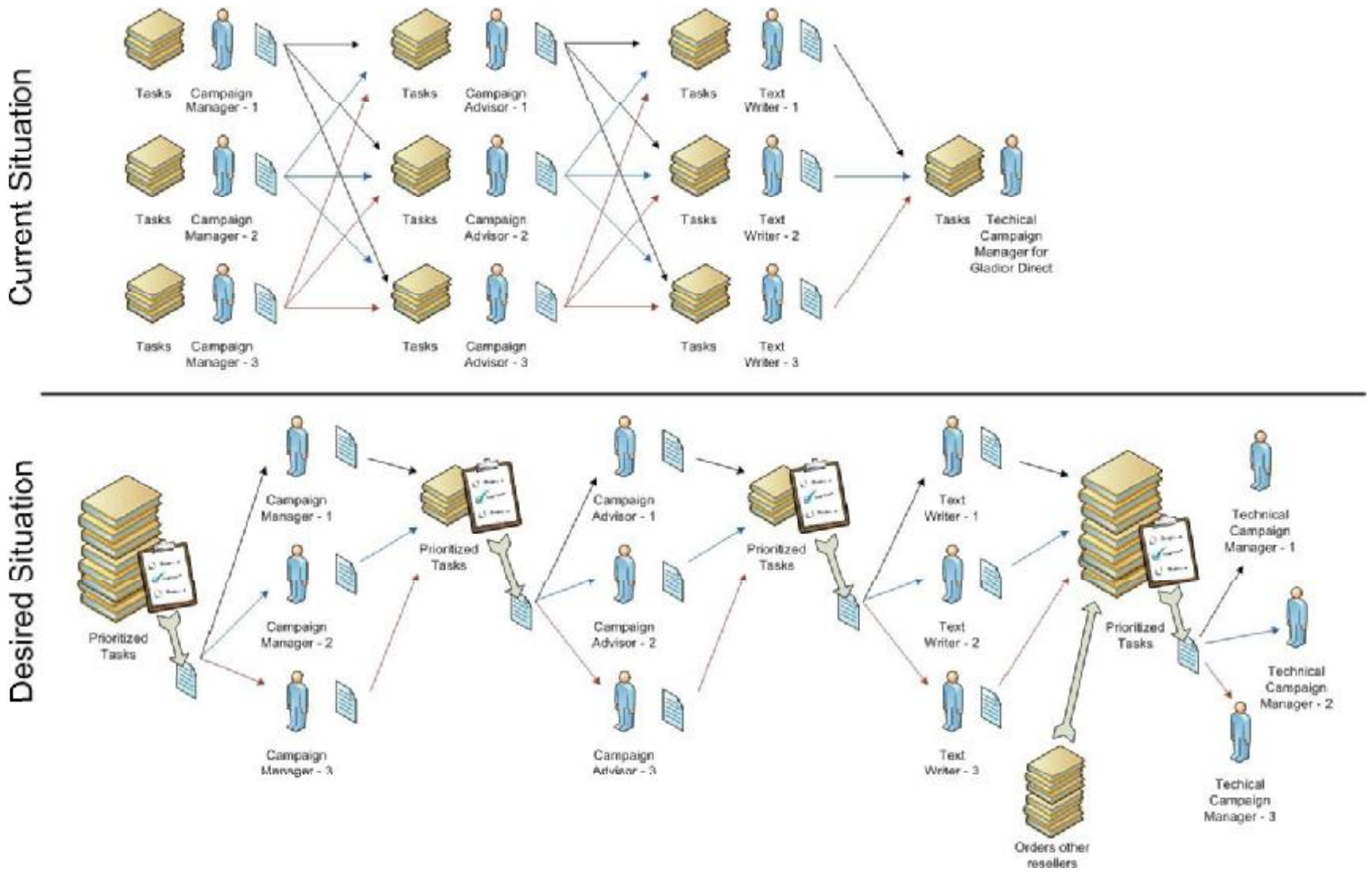

Figure 4.2: Comparison between the current and the desired task allocation procedure

4.1.1. Apply visual management

Currently there are no visual management tools applied at Gladior, except for implementation of the campaign. As indicated in the theoretical framework, visual management can promote the insight of everyone in the process status and performance. Obtaining insight in the process status and performance can be especially useful, since tracking the flow of work is harder to track in service industries (see section 2.2). An example of applying visual management is by displaying the process performance on a monitor or whiteboard (Rikhof, 2007).

In order to apply visual management process metrics have to be developed, together with interpretation scores for the values on the metrics. It goes beyond the scope of this research to formulate these metrics. Methods that can be used for formulating these metrics are 'process balance scorecards' according to the method of Kaplan & Norton (1992) and 'performance dashboards' according to the method of Kerklaan (2003). When the process performance is visualized within the organization (on a monitor or whiteboard), employees can also contribute to continuous improvement. Due to visual management employees can obtain insight in process bottlenecks, and support in the ideation for process improvements (George, 2003), (Drury, 2004).

4.2. Prevention and detection of quality problems

The previous chapter described the following problems concerning the prevention and detection of quality problems: not executing the process according to its natural course, a limited use of Poke-Yoka and not applying peer review at all process steps. This section will describe solutions to these problems. In this section the solution to the quality problems in the landing pages and the texts are incorporated in the solutions to the other problems.

4.2.1. Execution of the processes in their natural course

The campaign setup processes are not always executed according to their natural course. This problem exists at the process interface between Gladior Direct and Gladior Partner; the moment the landing pages are ordered. Section 3.3.1 (and figure 3.4) indicated that this causes quality problems in the landing pages.

In order to prevent quality problems, Gladior Partner should not accept incomplete orders from Gladior Direct or other resellers. An order is complete when it is associated with sufficient customer information, a campaign advice and texts. When Gladior Partner does not accept incomplete orders, quality problems concerning the lay-out and the text not fitting the lay-out of the landing page can be prevented.

When this solution is combined with the task scheduling improvements described in the previous section, Gladior Partner can convince resellers to use this solution because it is associated with a shorter delivery period. Besides that, it can prevent rework for both the reseller and Gladior Partner. Last but not least, it also can contribute to a higher perceived quality by the customer.

Gladior Partner could also solve this problem by creating an online module whereby resellers can add the texts to the landing page. After adding the texts, the reseller can download the campaign from the server. In that way no intervention is required anymore by Gladior Partner for adding the texts. To prevent quality problems the landing pages should be build according to regular text size allowances used in search engine marketing. Gladior Partner could for instance build the landing pages using a dummy text, which is replaced when the reseller adds the texts.
When this solution is applied, orders only have to be associated with sufficient customer information and a campaign advice. Besides that, the order should also indicate which conversion moment should be used on the landing pages.

The first solution is relatively simply to implement, because no financial investments are required to create an online text adding module. On the other hand, resellers that are used to order campaigns before writing the texts might not accept the solution. Acceptation under those resellers can be improved by assuring a shorter delivery period and a higher quality of the landing pages.
The second solution requires an investment in an online text adding module for partners. But it might be easier accepted by resellers. Besides that, it also creates time savings at Gladior Partner, which increases the available capacity of the technical campaign managers. A disadvantage of this solution is that it still allows for lay-out problems when the texts are added, although the number of quality problems is probably decreased due to the use of a dummy text.

4.2.2. Poke-Yoka

In the current campaign setup processes no Poke-Yoka is applied during the matching of the order, the writing of the texts and the building of the landing pages. This section will describe how Poke-Yoka can be applied at these process steps.

Match the order

During this research no solution was found to apply Poke-Yoka at matching orders with the customer. Because campaigns are customized, it varies per customer which information is relevant and important. In consequence it is challenging to develop a tool that assures all relevant information is obtained.

A possibility to partially apply Poke-Yoka in this process is to use an interview scheme during the matching of the order. That way the campaign manager can assure all standard information is obtained. Such an interview scheme should comprise all standard information required for to make a campaign advice, write texts and order landing pages.
After creating a basis checklist, the campaign managers can continuously improve the interview scheme by adding additional questions to it. These question can comprise regularly occurring quality problems.

Write texts

During this research no solution was found to apply Poke-Yoka at writing the texts. A checklist can be made with points of attention, but such a checklist would be rather small. Besides that, text writers are already were familiar with all points for writing texts.
The main problems is that a checklist does not have a possibility to test if a specific text is commercial enough. Besides that, the text editor Microsoft Word already supports the text writers in preventing spelling errors and verifying text length.

It seems hard to prevent quality problems when writing texts. Since the texts are already peer reviewed, it might be better to improve the peer review of the texts (for instance by creating a checklist for commonly occurring quality problems). In order to apply Poke-Yoka at the text writing, additional research is required.

Build the landing pages

During this research also no solution was found to apply Poke-Yoka at the building of the landing pages. Like with matching the order, Poke-Yoka can be applied to some extent but not completely.

In search engine marketing the requirements (and best practices) for setting up landing pages change regularly. Besides that, there are much points of attention for building landing pages. In the current situation technical campaign managers do not use a checklist for verifying the quality of a landing page. It is also not used as an overview of all quality demands for the landing page. A checklist can support the technical campaign managers in paying attention to all quality demands, instead on focussing on a couple requirements.

This checklist can also be used for implementing quality improvements to the landing pages. Quality improvements can be carried through by adding (deleting) requirements to (from) the checklist. Those quality improvements can be recognized by formulated solutions for (regularly) occurring quality problems, or from new research about search engine optimization.

4.2.3. Peer review

In the current situation no peer review is applied when the order is matched with the customer, and the landing pages are build. This section describes how peer review can be applied to these processes.

Match the order

In this research, it is found that it is challenging to apply peer review after the order is matched with the customer. The order is matched over the phone, so it is hard for colleagues to verify the obtained information. When the interview scheme mentioned in the previous section is used, another campaign manager can only verify if all fields are filled out.

A possibility for peer review is to send a document (a filled out checklist) to the customer. The customer then has the possibility to review the document. But because there already exist several problems concerning late customer contributions, the question arises if this solution actually works. Besides that, because customer perceptions are an important measure for the quality perceived by the customer (see section 2.2), the question arises if this contributes to a higher quality perception of the customer.

Peer review can also be applied by letting the sales person review the filled out interview scheme. During the sales process the sales person gained information about the campaign aims and desires of the customer. So the answers in the interview scheme can be compared to impressions of the sales person. This solution prevents late customer contributions or possible negative customer perceptions. Therefore this seems a better option for applying peer review in this process.

Build the landing pages

Due to the order module all technical campaign managers have access to all available campaign information. Since all technical campaign managers also have enough skills to build landing pages, landing pages can be peer reviewed by a colleague. This peer review can be carried out by comparing the landing page with the selected lay-out from the website and the checklist which is also used for building the landing page (see section 4.2.2). In that case a colleague can provide information about the quality of the landing page, and possible improvements that have to be carried out before the page can be send to the customer.
Figure 4.3 provides an overview of the proposed application of peer review and Poke-Yoka in the campaign setup processes.

Besides preventing that quality problems are detected late in the process (or by the customer), peer review can also improve the expertise of the employees. Due to peer review employees can learn from each other.

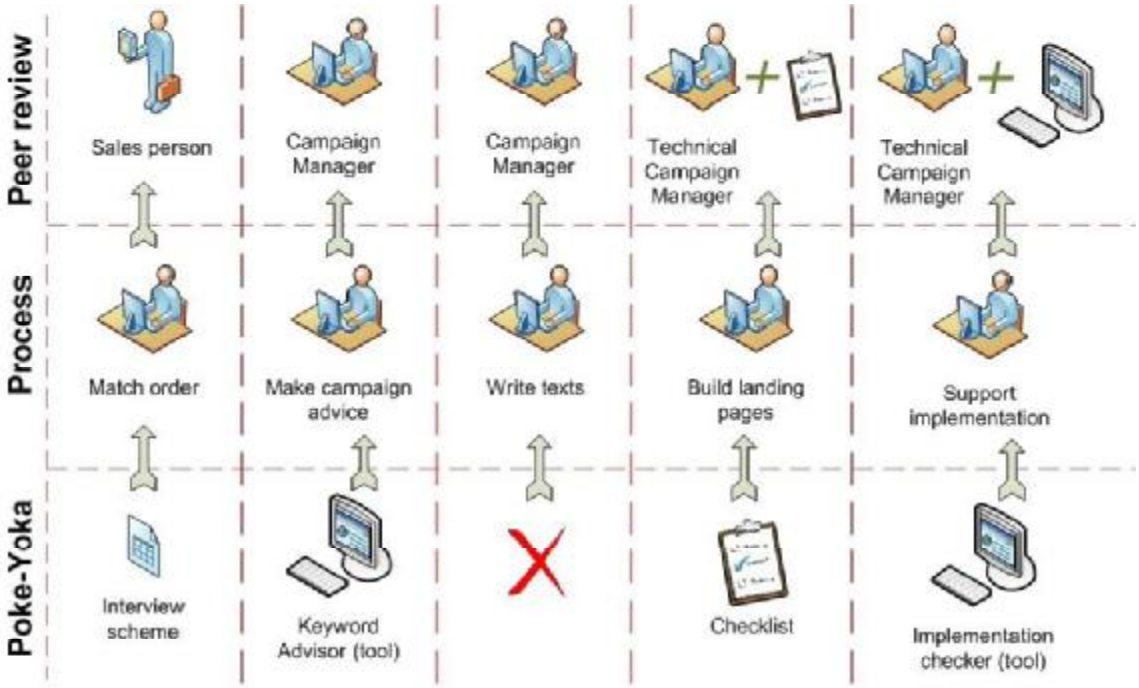

Figure 4.3: The application of Poke-Yoka and peer review in the campaign setup process

Continuous improvement

The previous chapter indicated that quality problems regularly occur in the texts and landing pages. This section presented solutions that can support in preventing and detecting these quality problems.

These solutions are most effective if the interview scheme and the checklists are regularly updated based on advancing understanding about quality problems (and research about best practices). Regularly updating the checklists can form the basis for continuous improvement. Over time new quality problems might occur or become important. When these are added to the checklist, they are detected and can be prevented.

4.3. Improve customer participation

The analysis of the campaign setup processes indicated several problems concerning customer participation. The delivered quality partially depends on the participation of the customer in these processes. Quality problems can occur when the customer does not participate right in the process. An additional challenge for this process is a gap in process knowledge between Gladior and the customer. This section will describe solutions for the customer participation problems summarized in section 3.4.

4.3.1. Waiting on customer contributions

Waiting on customer contributions is identified as one of the bottlenecks in the campaign setup processes. The actual cause of these problems is not detected in this research. Therefore further research is required in order to formulate grounded solutions for these problems.

A possible cause of the problem can be a lack of customer education about the business processes during the sales processes. In the current situation the customer is informed about the desired participation after the contract is signed. Besides that, no appointments are made with customer about when participation is required when the order is matched with the customer.

The magnitude of this problem can probably be decreased by informing the customer earlier in the process about participation moments. Research from Bell & Eisingerich (2007a, 2007b) indicates that by informing customers early in the process about the business processes of a company, the efficiency of customer participation moments can be improved. Besides that, it can also improve customer loyalty (Bell & Eisingerich, 2007a, 2007b). Further research is required in order to analyze where these forms of customer education should be incorporated in the (sales) processes.

Making appointments with the customer about the verification of campaign items can further decrease the magnitude of this problem. By applying the other solutions presented in this chapter, Gladior should be able to make reasonable predictions about when campaign items will be finished. Based on these predictions, appointments can be made with the customer about the delivery of campaign items and the deadline for customer responses. When these appointments are made Gladior should also stick to the predictions, because late deliveries can also negatively influence the quality perception of the customer.

By applying the solutions presented in this chapter the process flow can be improved. Due to the increase of process flow, the period between matching campaign items can be decreased. According to a campaign manager (see section 3.3) that can increase customer involvement. And more customer involvement is expected to lead a higher quality of customer contributions and to faster customer responses according to that campaign manager.

4.3.2. Match the campaign advice

Two main problems occur when matching the campaign advice: waiting on customer verification and acceptation of the advised keywords. In order to completely solve these problems further research is required to find the actual causes of these problems. This section will discuss solutions that can improve the matching of the campaign advice, based on the insights of this research.

Improving the verification process

In the current situation the campaign advice is matched by sending it by e-mail to the customer. The customer has to print the e-mail, select the keywords he desires, sign the document and fax (or mail) the document back. This is a complex method, since many of the actions the customer has to perform do not add any value to the campaign. Besides that, this somewhat complex method can make the customer postpone the matching of the advice.

This process can be simplified by creating an online module where the customer can select keywords and confirm this selection. This would simplify the process, which might evoke a faster customer response.
During the execution of this research a trial version for such a module was created in cooperation with the R&D department. A print screen (in Dutch) of the module is exhibited in figure 4.4.

This process can be further improved if the campaign manager would call the customer after the campaign advice is ready. Because telephone has a higher media richness than e-mail, this could encourage a faster customer response. Besides that, appointments can be made with the customer about the deadline for the verification.

Acceptation of the campaign advice

The acceptation of the campaign advice is challenged by a knowledge gap between Gladior Direct and the customer. A lot of customers desire the use of generic keywords, because these words usually have a high search volume in Google. On the other hand these words are in most occasions unsuited for campaigns. Usually many other websites have content about those keywords, due to which it is hard to obtain reasonable positions in Google (even though that also depends on the technical state of the website of the customer). Besides that, people that search for a specific item do in general use more specific keywords (Anderson, 2006; Blacquière, 2007). The use of specific keywords can improve the campaign effectiveness, because it can generate more sales or leads.

During the sales process the customer usually indicates that the campaign should focus on generating more sales or leads. When the campaign advice is matched, the customer sometimes demands the use of generic keywords (even after the campaign manager warns for the possible negative effects). In most of those occasions the selected generic keywords are unsuited to obtain the campaign aims, leading to an unsatisfied customer.

In order to take the knowledge gap between Gladior and the customer into account, Gladior should review the campaign advice document that is currently e-mailed to the customer. This document currently indicates that Gladior carried out a keyword analysis. Next to that it provides an overview of the suited keywords (from which the customer can make a selection). If the customer proposed some keywords during the matching of the order, these words are presented under the suited keywords or are marked as being unsuited.
The knowledge gap can partially be tackled if the document explains why these keywords are selected and why generic keywords are unsuited. The document should also elaborate on the method used to determine the suitability. Besides that, also an indication per keyword can be presented about the likeliness of a top 10 position in Google, for instance on a scale from very unlikely to very likely. This information is currently already taken into account when determining the suitability of keywords. This information can also easily be included in the campaign advice document.
In that way the customer receives more background information on the campaign advice, which can support in deliberately selecting keywords.

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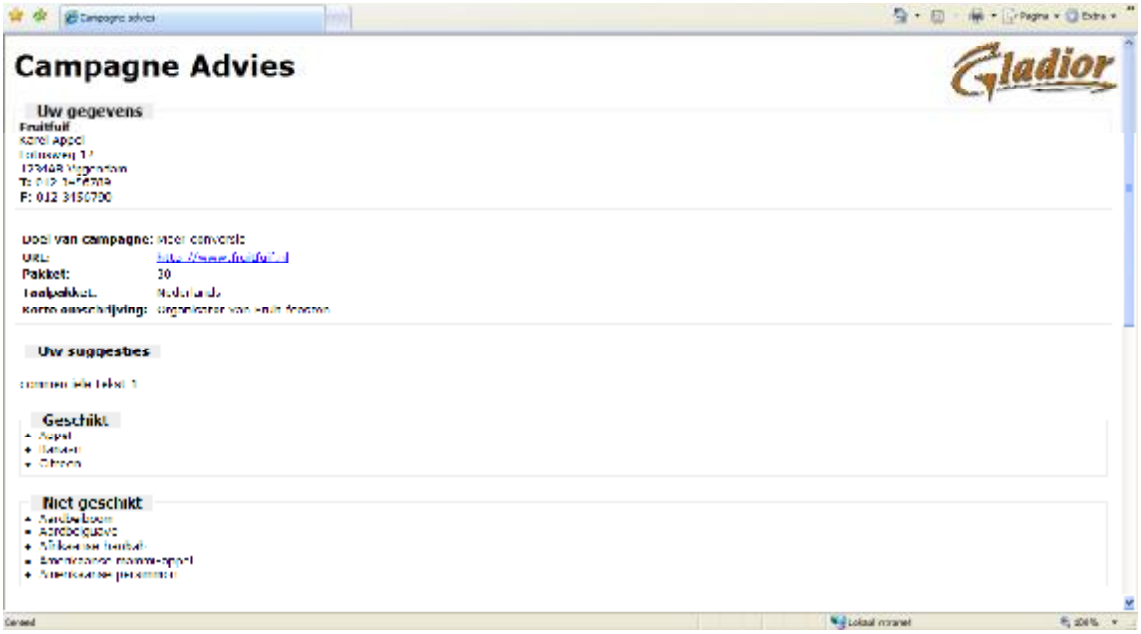

Second part of the page, under the page fold.

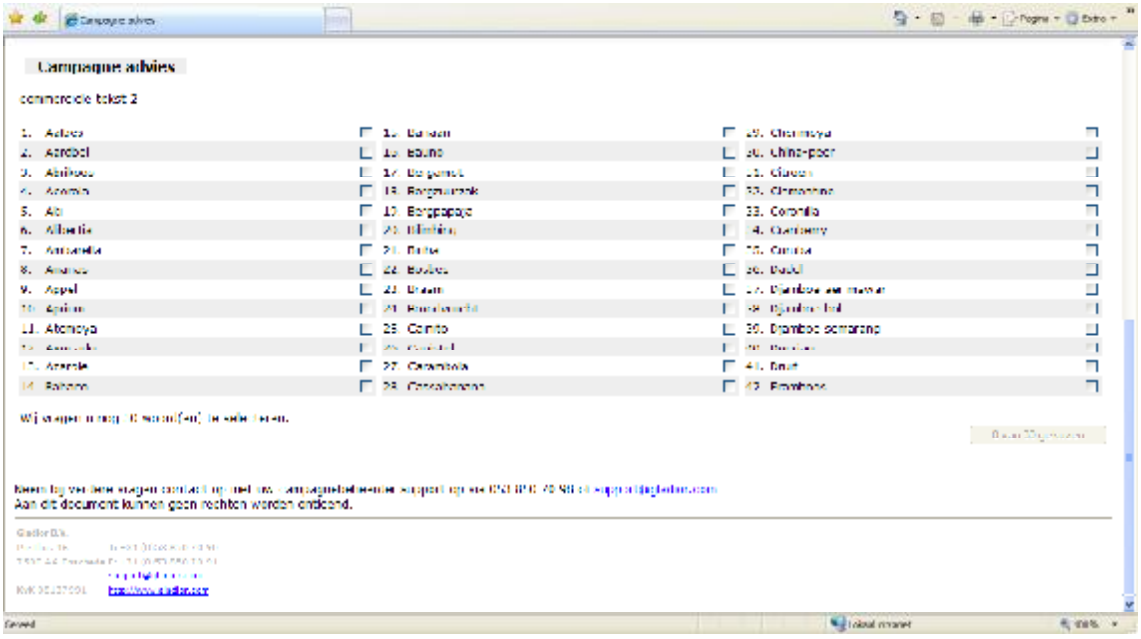

Figure 4.4: Trial version of the module for matching the campaign advice

When implementing the campaign advice module, an additional option would be to give the customer only the possibility to select suited keywords. In that way the customer would need to contact Gladior before unsuited keywords can be used. That might form a barrier from demanding those keywords. This method is included in the trial version of the module, exhibited in figure 4.4.

Also could Gladior analyse if the name 'campaign advice' is suited for this document. The word "advice" might give the impression that the customer can neglect the proposed keywords. A more impelling name might solve part of this problem.

Based on the insights gained in this research, it is not recommended to skip the matching of the order as a process step. The process flow can be increased by not matching the campaign advice with the customer. Skipping this process step has the risk that customers object to the keywords later in the process. That might cause additional rework, because it also implies rework to other campaign items like the texts.

4.3.3. Match the campaign with the customer

When the campaign is matched with the customer, new active information can become available about customer desires for the conversion moment or the lay-out of the landing page. In those occasions the landing pages and texts need to be adjusted. Also should the campaign be matched again with the customer after the adjustments are carried through.

Most of these problems can be prevented by collecting active information earlier in the process. When the order is matched, the desired conversion moment and lay-out can already be determined with the customer. After the campaign advice is finished, the campaign manager can verify if the conversion moment and lay-out suit the selected keywords. If the keywords do not match with the lay-out or conversion moment, a new lay-out or conversion method can be determined with the customer when campaign advice is matched (or the keywords can be adjusted).

Gladior Direct can solve this problem by including questions about the lay-out and conversion moment in the proposed interview scheme for matching the campaign (see section 4.2.2). Since this problem also exists for other resellers, Gladior Partner can solve this problem by requesting an indication of the desired lay-out and conversion moment in the order for the landing pages.
When the technical campaign manager starts building the landing pages, the suitability of the lay-out and conversion moment can be verified. If the lay-out or conversion moment are unsuited, the technical campaign manager can advise the reseller about a more suited lay-out or conversion moment. Of course that can cause delays in the process, because the reseller might again want to match the desired lay-out and conversion moment with the customer.

The question arises if all resellers have enough knowledge to determine a suited lay-out or conversion moment (together with their customers). So in order to implement this solution, Gladior Partner should train their resellers in selecting lay-outs and determining suited conversion moments.

4.3.4. Poor implementation of campaigns by customers

The poor implementation of campaigns is a multidimensional problem that can be caused by multiple reasons. The previous chapter already indicated that further research is required in order to find the causes of these problems. On the other hand this is an important problem, because a complete implemented campaign has a significant better performance. And campaign performance is expected to be directly related to customer loyalty.

One plausible cause is that the current implementation tool (the 'implementation checker') and the corresponding documentation are unclear, which is indicated by some employees during the research. In order to verify if the documentation is unclear, Gladior can attempt to improve the documentation in cooperation with customers. A clear tool, manual and documentation can not only improve the quality of the implementation, but also improve the quality as perceived by the customer. Further research is required in order to determine if the 'implementation checker' tool and documentation are unclear, and if so how the clarity can be improved.

Campaign implementation by Gladior Partner

As indicated in the previous chapter, Gladior Partner offers resellers the possibility to implement a campaign to the website of the customer. At the time of this research Gladior Partner implemented campaigns of a handful of customers. Almost all these campaigns are fully implemented.

In order to implement a campaign, Gladior Partner requires access to webspace of the customer. This access must be provided by the customer. Most customers are careful in providing this access. On the other hand, according to the marketing and communication coordinator a lot of competitors demand such access before accepting a campaign. Gladior (and possible other resellers) can also demand access, especially since that is expected to lead to performance improvements. Besides a better implementation, this solution has the following advantages for customers:

- The campaign is in most occasions implemented faster, leading to campaign results earlier in time.
- The costs the web designer charges for implementing the campaign can be saved.
- Gladior can improve the campaign directly when improvement opportunities are found, without intervention of the reseller, customer and web designer.
- When there are important updates in guidelines for implementing the campaign, Gladior Partner can carry through these adjustments directly to the website (after the customer is notified). In those occasions the campaign is probably faster updated, and the costs for web designer are saved.
- Communication problems between Gladior, the customer and the web designer can be prevented.

Disadvantages

Implementing campaigns requires capacity at Gladior Partner, while otherwise these tasks were executed by the customer. On the other hand it can save time for Gladior Direct and the reseller. When Gladior Partner implements campaigns, it is not necessary anymore to execute the process step 'support the implementation of the campaign'. The campaign only has to be matched with the customer. Next to that, if Gladior Partner implements the campaign, less reseller support is required for handling questions and problems concerning the implementation of campaigns. From a lean manufacturing point of view, implementing the campaign probably also adds more value from a customer viewpoint then answering a question about the implementation.

There are two additional disadvantages to this solution. The first problem occurs when the customer has a content management system; a tool for creating new pages and adjusting texts, images, etcetera on these pages. Such tools scan for unintended adjustments to the website. When an unintended adjustment is found, the website is recovered to its original state. These tools also consider the implementation of a campaign as an unintended change, unless the web designer implemented the campaign. So on websites with these systems, the implementation by Gladior Partner is made undone.

Another challenge is that some web designers might have problems if Gladior implements landing pages on a website they created. A web designers might feel assaulted when Gladior adjusts something on a website they maintain. Even worse, when Gladior implements a campaign, they cannot charge costs for this adjustment to the customer. According to the Quality and Service coordinator there not yet have been much problems with web designers at the time of the research, but that might also be due to the small amount of campaigns implemented by Gladior.

When taking the disadvantages into account, most of them can be prevented with good communication between Gladior Direct (or other resellers) and the customer. When the customer indicates a content management system is used, the reseller should just process the campaign in the current way. Hereby Gladior should advise the customer early in the process about steps to take during implementation. The acceptation by the web designer can be promoted if the customer communicates to the web designer that Gladior has permission to implement the campaign to the website. At the end of the day the customer is the principal of the web designer.

In order to implement this solution, two items have to be added in the proposed interview scheme for matching the order with the customer. At that process step access to the webspace of the customer has to be demanded, and the customer must be stimulated to inform his web designer about the granted permission. By implementing this solution the campaign performance can be improve significantly, which can also improve customer loyalty.

4.3.5. Communication mediums for matching campaign items

This section elaborates on the improvement of communication mediums used for matching texts and for the communication between Gladior Direct and Gladior Partner. The improvement opportunities for the communication mediums used when matching the campaign advice are already described in section 4.3.2.

Match the texts with the customer

In the current situation texts are usually send to the customer by e-mail. In general the customer also replies by e-mail. This process can be improved by calling the customer after sending the texts. In that phone call background information can be provided about important characteristics of search engine optimization texts. That way the customer can get more insight in points of attention for verifying the texts. Besides that, a deadline can be set for reviewing the texts.
When the customer does not agree upon the texts, it might also be better to call the customer. That way the desired adjustments can be matched over the phone. This can prevent indistinctness about the desired adjustments. Indistinctness can cause wrong adjustments, which leads to unnecessary rework.

Figure 4.5 visualizes the service blueprint of the desired situation.

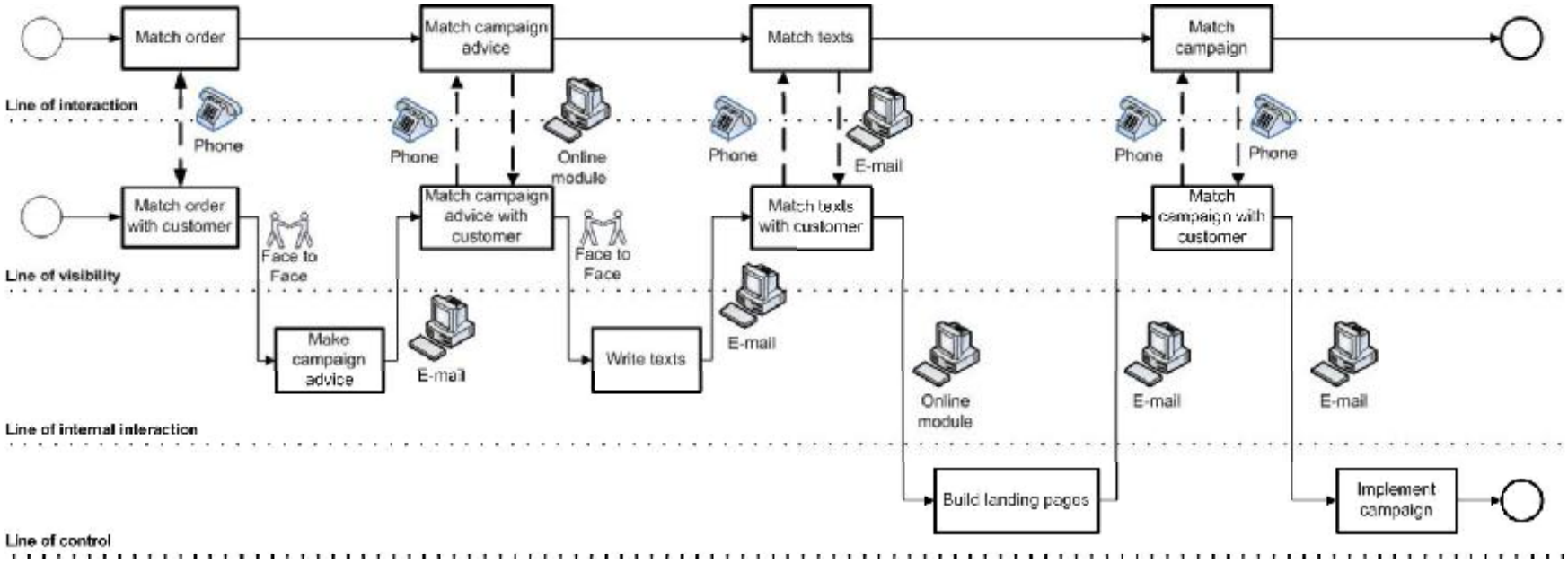

Figure 4.5: Service blueprint of the desired situation

Communication between Gladior Partner and Gladior Direct (and other resellers)

E-mail seems a suited communication medium for regular communication in the campaign setup process, since both Gladior Partner and Gladior Direct have much process knowledge.

When Gladior Direct or another reseller has technical questions or requests, indistinctness can occur. Indistinctness can lead to a wrong interpretation of the question or request, which causes rework. In order to prevent indistinctness it is better if Gladior Direct poses the questions or requests face-to-face, since face-to-face communications has the highest media richness. For other resellers it is better to call in those situations. Calling the reseller is a small time investment, which can prevent unnecessary rework.

4.4. Remove waste from the internal processes

During this research two types of unnecessary waste in the internal processes are detected. At the transfer of orders from the sales department to the campaign management department active information is lost. The second type concerns the doubly entry of data at Gladior Partner during processing or orders.

4.4.1. Order transfer from sales to campaign management

The transfer of an order from the sales department to the campaign management department is usually not associated with a customer-visit-document, or a conversation with the sales person. In consequence active information is lost at this process interface, which causes errors and double work.

The management of Gladior desires the use of customer-visit-reports. Customer-visit-reports contain all kinds of valuable customer information, which also can be used for strategic analysis. Therefore the campaign management team should not accept any orders from the sales department, which are not accompanied with a decent filled out customer-visit-report.
The report size used at Gladior is quiet lean and only request the most important information about campaign goals and aims, agreements, appointments, and customer data. Therefore report size should not be a reason for not filling out the document. When the campaign management team does not accept any orders without this report anymore (without any exclusions), the sales persons are forced to take care for a good transfer of active customer information.

4.4.2. Double data entry for processing orders at Gladior Partner

The information about each order at Gladior Partner has to be transferred from the 'order information database' into the 'campaign information database'. This transfer does not add any value, because it is a double entry of data. In order to gain capacity, this transfer of data can be automated. In that case the information only has to be verified.

Based on observations it is expected that automating this process step will save five minutes processing time per order. During this research on average fifty campaigns were ordered each month (sum over all resellers). So automating this process step can save about four hours of processing time each month. The saved capacity can be used for other purposes.
According to a software developer it would only take a couple of hours to automate this process step, which implies that the invested time can be earned back relatively fast.

4.5. Chapter summary

This chapter described solutions to problems identified in the campaign setup process. The solutions are described by four focus areas: task scheduling, prevention and detection of quality problems, customer participation and waste in the internal processes

The scheduling of tasks can be improved by applying job rotation at Gladior Partner, applying a highest priority method for assigning tasks and by applying visual management. The combination between job rotation at Gladior Partner and a highest priority method for scheduling tasks, should ensure that the highest priority tasks are always executed first. This will also limit the number of tasks in the process, which improves process flow. Besides that, process interfaces will operate as pull processes. In that way high inventory levels between process steps are prevented. By the application of visual management, employees should at all times have insight in the process status and performance. That way employees can contribute to further process improvements.

The prevention and detection of quality problems can be improved by executing tasks according to their natural course, and by applying Poke-Yoka and peer review. When processes are executed according to their natural course, quality problems in the landing pages can be prevented. Poke-Yoka should be applied at 'matching the order' and 'building the landing pages' to prevent quality problems at those process steps. When matching the order, Poke-Yoka can be applied by using an interview scheme. A checklist can be used to prevent quality problems when building the landing pages. No solutions are found for applying Poke-Yoka at writing texts. Peer review should be applied after 'matching the order' (by a sales person) and 'building the landing' pages in order to prevent that quality problems reach the next process step (or the customer). Implementing these solutions should lead to a decrease of quality problems.

Further research is required to find causes of the customer participation problems. Based on the insights gained in this research, some solutions are formulated to partially solve the problem. Waiting time on customer contributions can be reduced by educating the customer about the business processes and required customer participation during the sales processes. Also appointments concerning customer contributions should be made when matching the order with the customer.
The process step 'match the order with the customer' can be improved by simplifying this process with the use of an online order module. The module should provide (more) background information about suited keywords in order to promote customer acceptance of the recommended keywords. Also should customers be informed by phone when the campaign advice is finished.
The poor implementation of campaigns by the customer might be caused by an unclear 'implementation checker' (tool) or implementation documentation. The clarity of this tool and documentation should be further analyzed in order to find improvement opportunities. Gladior can also solve these problems by implementing campaigns themselves. That way Gladior can control the implementation. That solution is associated with several advantages and disadvantages, but is expected to improve the overall performance of campaigns.

Other wastes in the internal processes can be decreased by only accepting orders when they are associated with a customer-visit-report at Gladior Direct. Besides that, the order processing at Gladior Partner can be automated.

The next chapter presents the conclusions and recommendations of this research.

5. Conclusions and recommendations

This chapter presents the conclusions and recommendations of this project in order to answer the central question of this research. The conclusions are derived from answering the research questions of this research.

5.1. Research conclusions

In the introduction this research is structured according to an objective, a central question, and a set of research questions. In the different chapters of this research the research questions are answered. In order to answer the central question and meet the objective of this research, this chapter provides a summary of the answers to each research question.

The objective formulated for this research is:

> "*Making recommendations aimed at improving the campaign setup processes.*"

In order to achieve the objective, the following central question is formulated:

> "*Which recommendations can be made about the improvement of the campaign setup processes based on the insight in the course of these processes, the bottlenecks within these processes, and the causes of these bottlenecks?*"

In order to answer this central question, three (main) research questions are answered. The answers to these research questions are:

1. **How can primary processes in service industries be analyzed and improved?**

   Process management can be used to maintain or improve the efficiency and effectiveness of processes. Primary processes exist out of multiple sub processes. At the interfaces between those processes the quality can be influenced most.
   In service industries the special characteristics of services also play an important role in process management. As a consequence of the intangibility of services, the flow of work is hard to track. Besides that, customers are not always able to fully evaluate services on their technical quality. In those occasions customers rely heavily on physical impressions of the service provider/delivery in order to determine quality.

   Process management theories suited for analyzing primary processes in service industries are: 'service blueprinting and customer participation', lean manufacturing, theory of constraints and business process reengineering. The campaign setup processes at Gladior can be analyzed best by combining the 'lean manufacturing' theory with the 'service blueprinting and customer participation' theory.

   'Lean manufacturing' focuses on removing non value adding activities from processes. In 'lean manufacturing' are identifying the value steam and eliminate waste, create flow and create pull important principles.

Lean tools that can be used to analyze processes are: value stream mapping, Poka-Yoke, visual management, lean waste matrix, and job design, planning & scheduling. These tools can be complemented by two points of attention: peer review and the natural execution of processes.

'Service blueprinting and customer participation' focuses on improving processes by analyzing the internal cooperation and customer interactions in the service delivery process. Important points of attention are: customer induction of activities, the release moments of active information, customer participation, customer education about the business processes and media richness of the communication mediums used.

2. What is the current situation concerning the campaign setup processes?

Gladior has the following primary processes: customer acquisition, campaign setup, campaign monitoring, campaign evaluation, 'campaign adjustment and maintenance', and customer/reseller support. These primary processes are divided over Gladior Direct and Gladior Partner.

After a new search engine optimization customer is acquired, a campaign has to be setup for that customer. The main process steps for setting up new campaigns are: match the order with the customer, make the campaign advice, write texts for the campaign, build the landing page and support the implementation. When supporting the implementation, the campaign is also verified by the customer. The landing pages are build at Gladior Partner, while all other process steps are executed at Gladior Direct.

In the processes all kinds of problems concerning process flow, customer contributions, quality of the campaigns and campaign items are identified. Based on a cause and effect analysis four main groups of (interrelated) problems are identified, that negatively influence the campaign performance. Those problems concern the scheduling of tasks, the prevention and detection of quality problems, the customer participation in the process, and the existence of waste in the internal processes.

3. What are solutions for the company concerning the bottlenecks identified?

The task scheduling problems can be solved by applying job rotation at Gladior Partner, applying a highest priority system for determining the priority of tasks, and by applying visual management. This should ensure that the highest priority tasks are always executed first, process flow is improved, inventory levels between process steps are decreased, process interfaces operate as pull processes, and employees are aware of the process status and performance (and can contribute towards continuous improvement).

The prevention and detection of quality problems can be improved by executing the process according to its natural course, applying Poke-Yoka and peer review. Executing the process according to its natural course can prevent quality problems in campaign items. By applying Poke-Yoka at the 'matching of the order' and the 'building of the landing pages' quality problems can be prevented. By applying peer review after 'matching the order' and 'building the lancing pages' quality problems can be detected. Due to these solutions quality problems can be prevented or be detected internally (before the item reaches the next process step or the customer).

Based on this research the following solutions are formulated for improving customer participation. By educating the customer about the business processes and customer contributions, the customer participation in the process can be improved. Making (better) appointments with the customer about customer contributions could also improve the customer participation. Also using communication mediums that are better suited for the message that is transferred can improve the process. Campaign items can for instance be matched by phone instead by e-mail. Hereby also enough background information should be provided by the campaign items. The implementation of campaigns can be improved if Gladior implements these campaigns instead of the customer.
Further research is required in order to find the actual causes of customer participation problems and to formulate a complete solution to these problems. Besides that, additional research can be carried out to improve the clarity of documents.

The wastes in the internal processes can be decreased by only accepting orders associated with a customer-visit-report at Gladior Partner and by automating the order processing at Gladior Partner.

By answering these three research question the central question of the research is answered. The main benefits that Gladior can derive from implementing these solutions are:

1. Higher quality campaigns, that have a better chance on a good performance. Especially a faster and better implementation of campaigns should boost to average campaign performance during the first contract year. The faster implementation can be achieved by a shorter delivery time of the campaigns, while the better implementation can be achieved when Gladior Partner implements the campaign.
2. Less rework on campaign items created in setup process. That leads to cost savings an increases in the available capacity.
3. Less customer induced campaign evaluations and adjustments to improve performance, because the customer is unsatisfied with the performance.
4. A better quality perception by the customer, due to better campaign performance and a better experienced guidance at customer participation moments.
5. An increased process flow, due to a decrease in waiting time on customer contributions and better task scheduling.
6. More clarity for employees about task priority and process status.
7. And hopefully: an improvement in customer loyalty.

Desired split between Gladior Direct and Gladior Partner

As indicated in the first chapter, this research can contribute to the desired split between Gladior Direct and Gladior Partner. By mapping the campaign setup processes (see section 3.2 and annexes 2 & 3), insight is provided in the current execution of these processes. This insight was not explicit available before the research. Due to the mapping of the processes and this analysis also insight is gained in the desired interfaces between Gladior Direct and Gladior Partner. Some solutions, like the order module for ordering landing pages, also support in helping Gladior Direct to operate more like other resellers of Gladior Partner. Especially with the order module Gladior Partner can ensure that the minimum level of information is provided to setup campaigns. Based on the current insights, I do not expect that splitting Gladior Direct and Gladior Partner should not lead to unsolvable problems.

In other processes I expect that more problems can occur when splitting the departments. Gladior Direct relies for instance much more on the support of Gladior Partner than other resellers. This is especially the case for answering questions or solving technical difficulties of customers. So that is an important focus area when splitting up the companies.

It goes beyond the scope of this research to analyze the desirability of the split between Gladior Partner and Gladior Direct. Based on the insights gained when executing this research, I have the impressions that the split should not lead to unsolvable problems, nor to structural lower campaign performances. No structural difference exists between the performance of campaigns of Gladior Direct and those of other resellers. So that would indicate that splitting up Gladior Direct and Gladior Partner should not have a big impact on campaign performances.

5.2. Recommendations

Recommendations are based on this research, but not as direct as conclusions. Based on the research the following recommendations are formulated for Gladior. The recommendations are prioritized based on their expected impact on customer loyalty.

1. **Formulate clear expectations along with the customer**. Formulating clear expectations starts with informing customers during sales processes about concrete steps in the business processes. In order to create clear expectations customers should also be informed about the customer participation moments in the sales processes. But creating clear expectations also comprises making clear arrangements with the customer about (realistic) processing time(s) and deadlines about tasks executed by Gladior or customers.

2. **Professionalize documents for customers**. Because (most) customers cannot evaluate the services provided by Gladior on their actual quality, the quality perception of customers relies heavily on physical impressions of the service delivery process. In the current situation some documents (like the contract and the campaign advice) have a very basic lay-out, which is not in line with the house style of Gladior. Since Gladior is a marketing firm, customers might expect more standardization in the documentation.
   Besides that, not all documents used for matching campaign items (in this and other processes) provide background information on proposed recommendations and solutions. Since there exists a knowledge gap between customers and Gladior, customers might not understand how Gladior has come to these recommendations or solutions. As a consequence customers might not accept the recommendations or solutions, or they simply accept them purely out of indifference. By providing more background information customers can be involved more in the process.

3. **Continuous improve processes based on quality problems**. The initial research indicated that most quality problems are solved on an incidental basis instead of a structural basis (see section 1.2.1). Questions, complaints and improvement opportunities contain much information about quality problems in processes. During this research that information was not centrally stored. Information about questions and complaints had to be distilled out of personal e-mail boxes of employees.
   By centrally storing this information (for instance by the use of a support e-mailbox in which all questions, complaints and problems are collected), this information can be used to analyze the causes of regularly occurring quality problems. By preventing these problems, quality can be improved and capacity can be saved.

5.3. Implementation

In order to implement the findings of this research, the following improvements are carried out during the execution of this research on a trial and error basis:

- Change the job design to job rotation at Gladior Partner (this was implemented by Gladior while writing this report). The job design is implemented using the schedule exhibited in annex 9, where everybody has to stick to. According to the campaign managers this created more focus and a more even distribution of the workload.
- Implement a trial version of the highest priority system for task allocation at Gladior Partner. During this research a trial version in excel was tested (see annex 10), which worked well. This planning system still has to be automated. In combination with the new job design, landing pages can be delivered in one workday. Per one hour capacity that is assigned for building and adjusting landing pages, one order can be assigned.
- Not accepting incomplete orders at Gladior Partner anymore, although orders without texts are still accepted. Besides that, the order module is adjusted. Thereby the module request for the lay-out and the conversion moment that customer would like to use.
- Apply Poke-Yoka when matching the order. Together with the campaign manager responsible for planning, an interview scheme was created for the matching of the orders. This scheme also includes the questions posed in the order module of Gladior Partner, and questions about regularly occurring quality problems.
- Apply Poke-Yoka when building landing pages. Together with a technical campaign manager and the R&D coordinator, a checklist is created for verifying the quality of landing pages.
- Apply peer review after building landing pages.
- Not accepting orders that are not associated with the sales-visit-report anymore at the campaign management team.

As can be seen in the list above, most of the implemented solutions are focussed on Gladior Partner. The solutions showed to have a positive effect on operations. Not only can orders for landing pages be delivered in one workday, but also the quality of the landing pages is improved. Three months after the implementation of these solutions, only 20% of the landing pages require rework after sending them to the reseller. As indicated in section 3.3.1, during this research 90% of the landing pages required rework. These findings are also an indication that the carrying through the solutions at Gladior Direct can positively affect their operations.

Not all solutions formulated in this research are implemented using trial and error. In order to fully implement the above mentioned findings, the following projects have to be carried out:

1. Make appointments and set deadlines with the customer when matching the order. These appointments and deadlines should at least concern the matching of campaign items. This solution should have the highest priority since it can be applied easily and it can have a high impact on the response time of customers.
2. Peer review the filled in interview scheme after matching the order. This solution should have a high priority because it can be applied easily and it can prevent quality problems.
3. Demand access to the web space of the customer at the sales process, or improve the clarity of the 'implementation checker' (tool) and documentation. By demanding access to the web space, Gladior Partner can implement campaigns. That should improve the overall performance of campaigns. This solution should have a high priority because it has a large impact on the performance of campaigns and therefore on customer loyalty.

4. Improve the campaign advice document or implement an online campaign advice module. This solution directly influences the campaign performance of many (new) campaigns, although that also depends on the implementation. Therefore this solution should have a high priority, although not as high as improving the implementation of campaigns.
5. Implement more media rich communication mediums when matching campaign items with the customer. This solution can be applied relatively simple, while it can support customer participation at these process steps.
6. Create a highest priority task allocation procedure at Gladior Direct. The trial version in excel turned out to be a to complex one. Also further research has to be carried out about how many tasks can be assigned to an employee on a daily basis. This solutions should have the sixth highest priority because it supports process flow (and thereby customer involvement), but not directly influences the performance of the campaigns once they are implemented.
7. Research where and how customer education about business processes and customer participation can be incorporated in the (sales) processes. Incorporating this education in the sales process can improve customer loyalty. On the other hand, customer loyalty also depends on good campaign performance. Since this solution takes time to implement and has a medium impact on solving the problem, it has the seventh highest priority.
8. Create an online module for adding and adjusting texts within campaigns. This is a relatively small process improvement that solves some quality problems. Besides that, it requires some preparation time to implement. Therefore this solution should have a relatively low priority.
9. Automate the order processing process at Gladior Partner. This solution has only a relative small impact on available capacity while it does not affect campaign quality. Therefore it should have a low priority.
10. Develop and apply visual management metrics. This solutions requires much preparation to implement, while it will only generate benefits on the medium and long term. Therefore this solution should have a low priority.
11. Further research how customer participation can be improved. Some proposed solutions should already decrease the customer participation problems. This research can find additional points of improvement. Since already solutions to problems are proposed, this project should receive the lowest priority.

5.4. Conclusion

When reformulating the aim of this research, the management of Gladior desired an outside view on the campaign setup processes. This was especially important because Gladior experienced customer loyalty problems. Since a good start is half the work, a solid basis for customer loyalty can be created during the campaign setup processes. Not only because the quality with which a campaign is setup determines the actual performance of the campaign, but also because the interactions with the customer influence the perceived quality by the customer.

With this research a contribution is made to this objective. A further contribution can be achieved by continuing implementing the solutions and recommendations presented in this research. Besides that, a further contribution could be made by implementing continuous improvement in the processes.

I hope that with this research I contributed positively to the development of Gladior.

List of tables and figures

Tables

Figures

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- Technical director and interim sales coordinator Peter Schinkel
- Human Resource Management advisor Astrid Beuvink
- Quality and service coordinator Tom Visser
- Research and development coordinator Dennis Sievers
- Account manager for partners Monique Bos
- Account manager Marja Steenken
- Account manager Sanne Sjoers
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- Part time technical campaign manager Taco Potze
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- Software engineer Daniël Bos
- Technical campaign manager Marvin Rigot
- Technical campaign manager Michel Bonvanie
- Technical campaign manager Michel Bouwmeester
- Technical campaign manager Patrick Kroeze
- Text writer Max Spanjer
- Former account manager Noortje Zuidgeest
- Former process consultant Jan Joost Stok

Annex 1: Interview scheme initial research

What do you think customers see as Gladior their strength? Why?

What do you think customers see as Gladior their weaknesses? Why?

What are according to you the strengths of Gladior? Why?

What are according to you the challenges for Gladior? Why?

Gladior has grown much in the last couple of years. Do you think Gladior experiences any negative side effects from this growth?

What is the main strength of Gladior? Why?

What is the biggest challenge for Gladior? Why?

If you could wave a magic wand and change one thing about Gladior, what would you change and why?

Where relevant employees are asked to further elaborate on their answer. In order to assure that employees speak freely, confidentiality of the interviews is assured.

The respondents that participated in this interview are: Tom Visser, Dennis Sievers, Monique Bos, Sanne Sjoers, Johannes de Boer, Taco Potze, Nicole Olde Kalter, Angelique Hoogendorp, José Mol, Annica Hondorp, Emiel ter Morsche, Marvin Rigot, Michel Bonvanie, Michel Bouwmeester, Noortje Zuidgeest, and Jan Joost Stok.

Annex 2: Non-technical campaign setup process model

This annex introduces the modelling conventions used in this research and visualizes the non-technical campaign setup process.

Modelling requirements

In order to create a better understanding of a business process, a process model can be used. A process model presents the sequence of activities (including splits and joints) and the relation between process and data models. Next to that, a process model provides a valuable basic solution for extended applications, like workflow management (Becker, Kugeler & Roseman, 2003; Van Bruggen et.al, 1996).

According to Becker, Kugeler & Roseman (2003) a process model should be correct (in accordance with organization structure and described behaviour), only include relevant items, be usable in reality, must be understandable by employees working in the process, be intuitively readable, and use well defined interfaces with corresponding models in the organization.

After showing examples of multiple modelling notations (bulb diagram, input-output diagram, flow diagram, business process modelling notation) to some employees and the management of Gladior, the business process modelling notation (BPMN) was selected as the most understandable, clearest, and useful diagram.
BPMN is based on a flowcharting technique. BPMN can be used for making graphical models of business process operations. In BPMN a business process model is defined as a network of graphical objects that exists of activities and flow controls, that determine the order of performance of the activities (White, 2004).

Business process modelling notation

In BPMN four basic categories of elements are distinguished: flow objects, connecting objects, artifacts and swimlanes (White, 2004).

Flow objects are the core elements of the model. The following flow objects are distinguished: events, activities and gateways. An event, which is represented by a circle, is something that happens during the course of a business process. There exist three types of events that affect the course in a different way: start (trigger), intermediate and end. An activity represents the work the organization performs, and can be compounded (several tasks) or non-compounded (single task). Both compounded and non-compounded tasks are represented by a square, although the clarity can be improved by adding a "+" sign in the square of a compounded task. A gateway is used to control the divergence and convergence of the flow sequence, and exhibits decisions as well as forking, joining and merging of paths. In figure a2.1 the flow objects are visualized (White, 2004).

Connecting objects form the basis skeleton of the process model. The following connecting objects are distinguished: sequence flows, message flows, and associations. Sequence flows show the order of the activities that are carried out in a process. Message flows show the flow of messages between separate process participants (like business roles, actors, or different organizations), from sender to receiver. Separate process participants are represented by separate swimlanes in the process model. An association is used to associate artifacts (like data, texts, documents, etcetera) with flow objects. Associations show the relevant/important inputs and outputs of activities. In figure a2.1 the flow objects are visualized (White, 2004).

Artifacts can be added to the model in order to create additional context to a specific modelling situation. In BPMN three basis artifacts are distinguished: data objects, a group, and annotations. Next to these, databases and applications are distinguished in this research. Data objects show how data is required or produced by activities. A database is a method for processing passive information, by which it can be linked directly to other activities. An application is a supporting method for processing active information (for example carrying out the actual service delivery process). In this research, standard data objects are used for forms and other data objects that are not directly entered into a database or used in a application (White, 2004).
A group does not influence the sequence flow, but can be used for analysing or documentation reasons. Annotations are a method for providing additional text information to the reader. The artifacts are visualized in figure a2.1 (White, 2004).

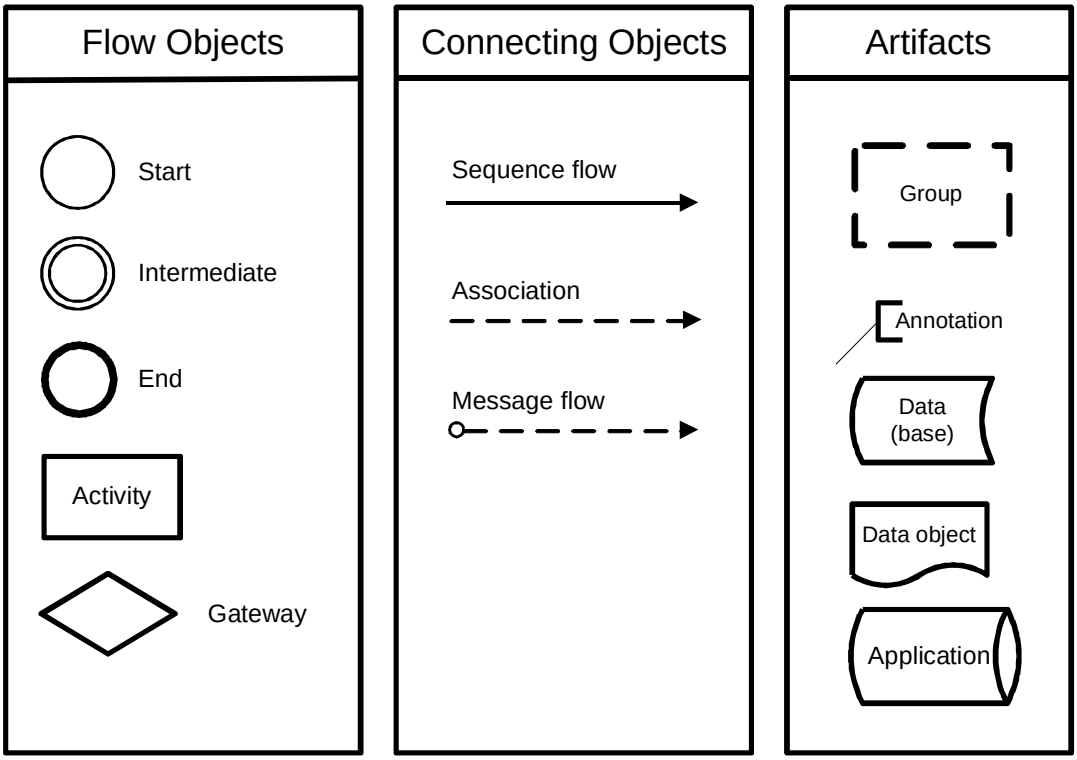


Figure A2.1: example of the BPMN symbols

In order to illustrate the categorization of activities over different functions, roles, or responsibilities, swimlanes are used. In swimlanes the function or role is show at the left side, and in the remaining part of the lane the activities carried out by that role are shown (White, 2004).

Process model non-technical campaign setup

On the next two pages, the process model of the non technical campaign setup process is visualized. In this process model the following functions are distinguished in different swimlanes: customer, planner (campaign manager responsible for planning), campaign manager, campaign advisor, and Gladior Direct. In order to simplify the model, the writing of the texts represented as a task of the campaign manager. In reality most of these tasks are executed by the text writer, although the campaign manager sometimes executes this task.

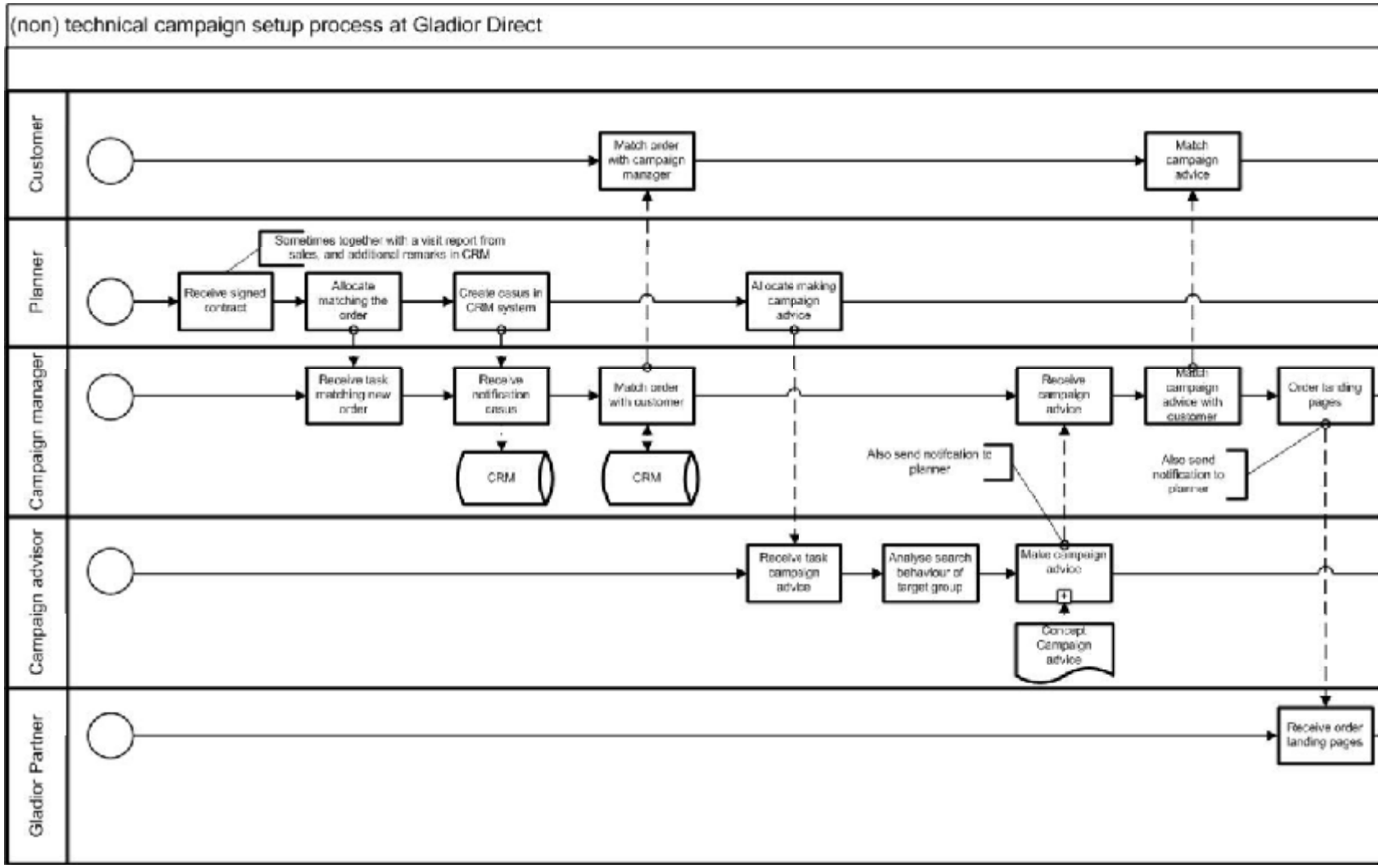


Figure A2.2: Non-technical campaign setup process (left part)

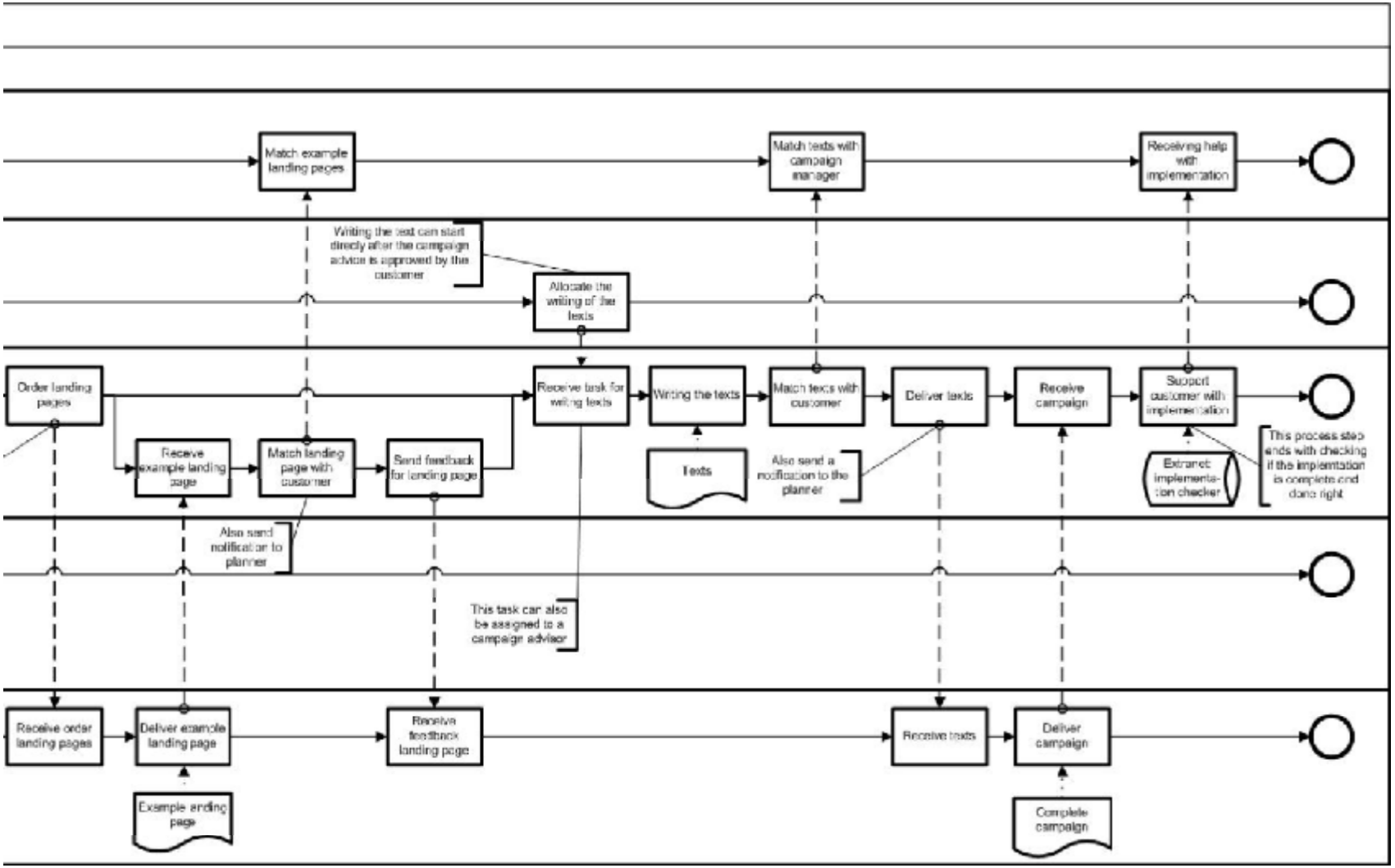


Figure A2.2: Non-technical campaign setup process (right part)

Annex 3: Technical campaign setup process model

In this annex the technical campaign setup process is visualized.

On the following pages the technical campaign setup process is visualized. The overall technical campaign setup process is visualized in figure a3.1, while building the landing pages is visualized in figure a3.2. Because the landing pages are the core of the service delivery, this process is visualized in more detail.

The process was modelled with the help of a technical campaign manager, and the model is verified by other technical campaign managers and the 'quality & service' coordinator.

In this process the following functions are distinguished in different swimlanes: Gladior Direct and Gladior Partner. At Gladior Partner this process is completely executed by technical campaign managers, although only one technical campaign manager is responsible for processing the order, and for forwarding it to the responsible technical campaign manager for the rest of the order.

These models are also visualized according to the business process modelling notation (White, 2004). An explanation of the modelling requirements, modelling conventions, and symbols can be found in annex 2.

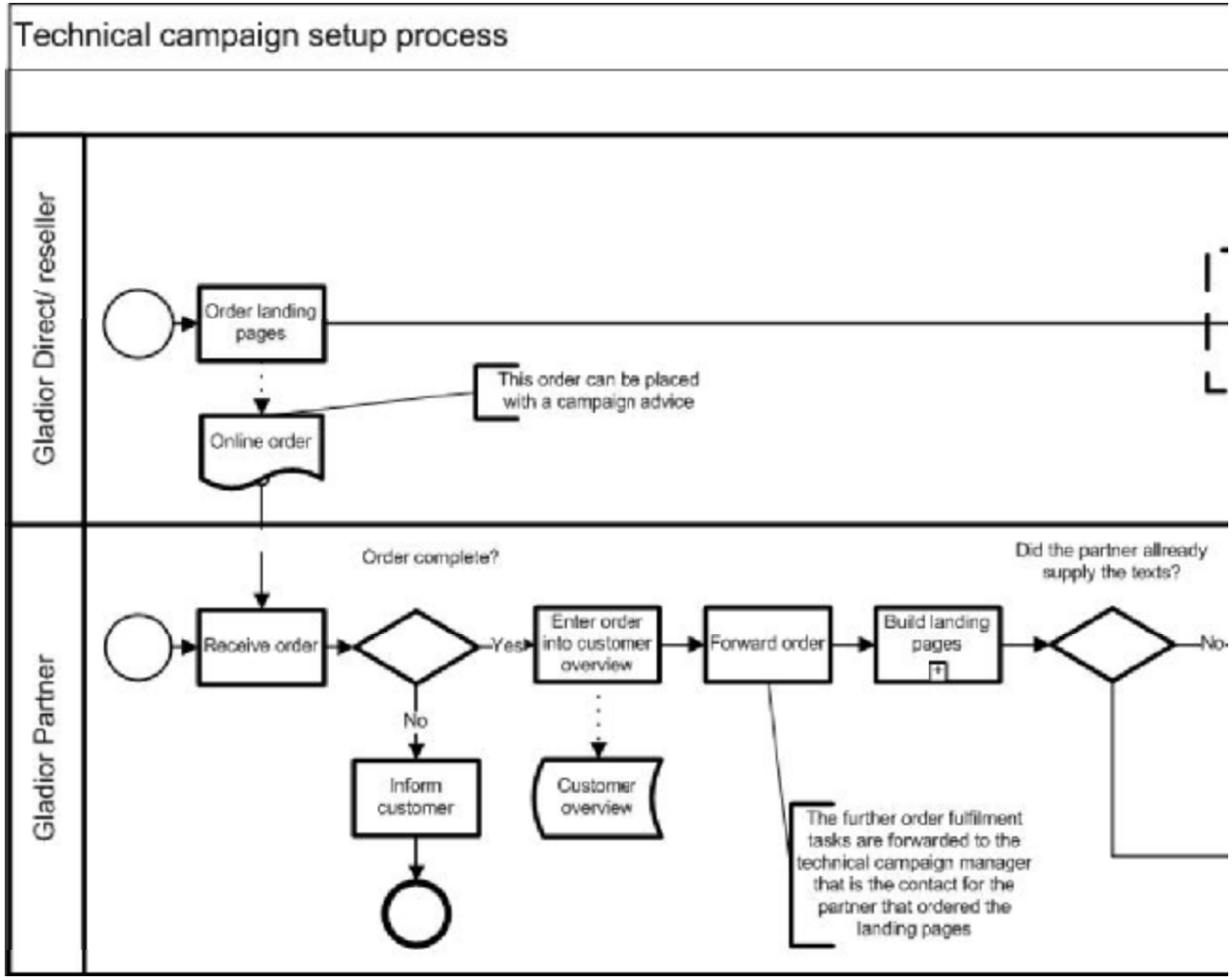


Figure a3.1: Non technical campaign setup process (left part)

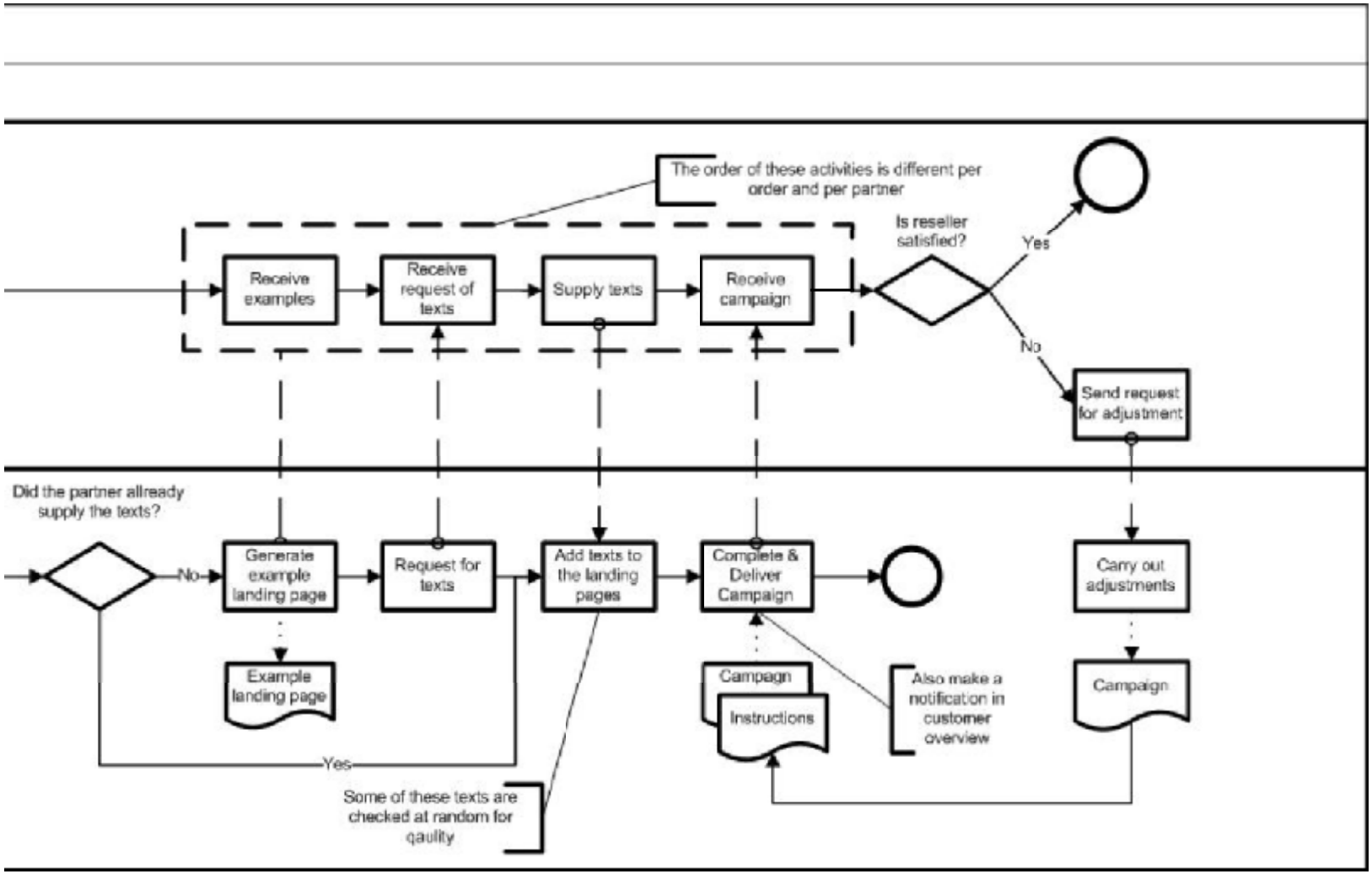


Figure a3.1: Non technical campaign setup process (right part)

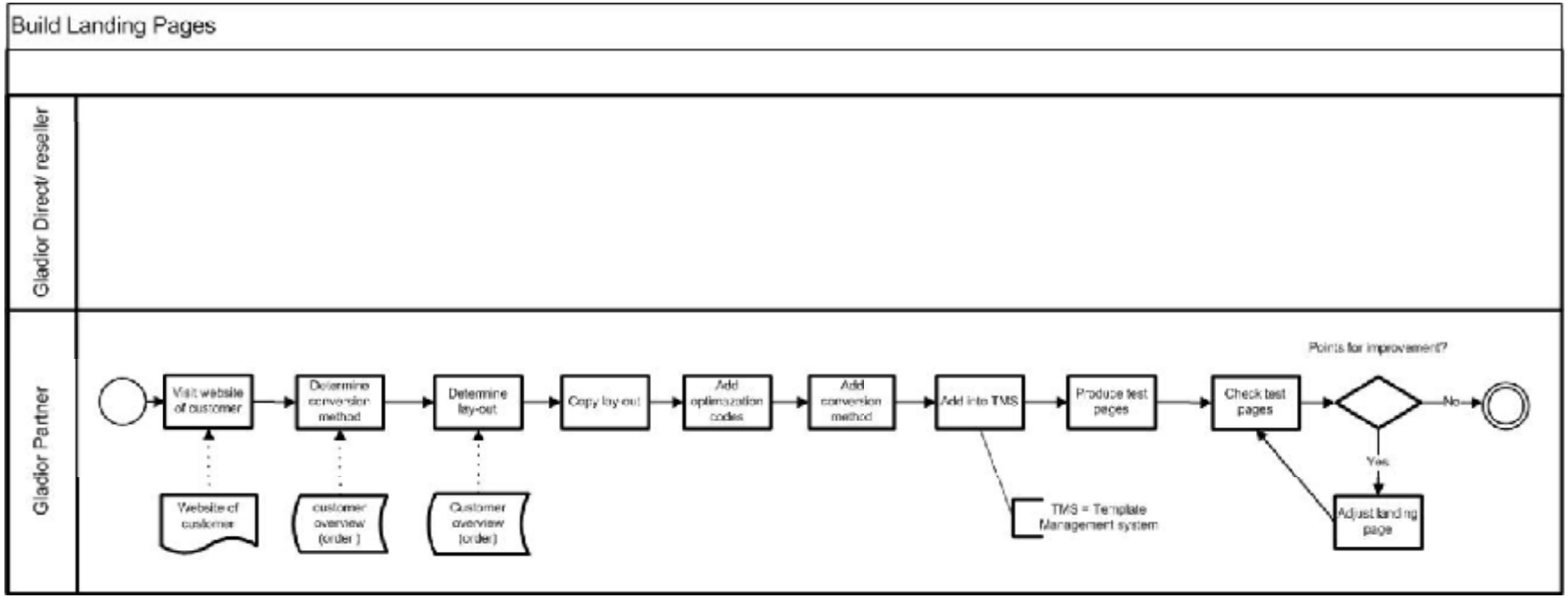


Figure a3.2: Building the landing pages

Annex 4: interview scheme campaign analysis

What are according to you the strengths of the campaign setup process?

How would you describe the process performance of the campaign setup process?

What are according to you problems in the campaign setup processes?

a) What problems do you experience?

b) What frustrates you most?

What are according to you possibilities to improve this process?

In what is the quality of your work reviewed or determined?

What are regularly occurring quality problems in campaign items you are responsible for?

What are regularly occurring customer complaints about campaign items you are responsible for?

In which way are quality problems and complaints prevented?

How can quality problems further be prevented in the future?

Is, according to your opinion, the process executed according a natural course?

a) If not, at which process steps is departed from the natural course?

b) Is this, according to you, causing quality problems?

What kind of task allocation procedure is used at your department?

Are you satisfied with the current task allocation procedures?

Does your department apply visual management?

How would you describe the process status of the campaign setup process?

How would you typify the job design used at your department? (after an explanation of the three types of job design).

Are there currently Poke-Yoka tools applied at your process step? (after explaining and giving examples of Poke-Yoka).

Is your work currently peer reviewed?

Does there exists a knowledge gap between Gladior Direct and Gladior Partner concerning the knowledge how to participate in the process?

Does there exists a knowledge gap between Gladior Direct and the customer concerning the knowledge about how to participate in the process?

What is your perception about the participation of the customer in this process?

Do there exist customer participation problems in the process, and if so which?

How can the customer participation (further) be improved?

What appointments and deadlines are made with the customer during the sales process?

What appointments and deadlines are made with the customer during the several contact moments in this process?

What communication mediums are usually used at the several contact moments with the customer in this process?

Does the customer always provides the right information at the right time, or does the customer sometimes provide information that causes rework to already created campaign items?

If you could wave with a magic wand and change anything about this process, what would you change?

This interview scheme provides an overview of all questions posed. Since not all questions are relevant for all respondents, a selection of the relevant questions is made for the interview of each respondent.

Where relevant employees are asked to further elaborate on their answer. In order to assure that employees speak freely, confidentiality of the interviews is assured.

The respondents interviewed are: Max Spanjer, Job van den Wildenberg, Taco Potze, Emiel ter Morsche, Marvin Rigot, Michel Bonvanie, Michel Bouwmeester, Patrick Kroeze, Nicole Olde Kalter, and Monique Bos.

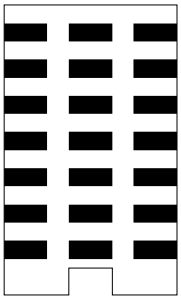
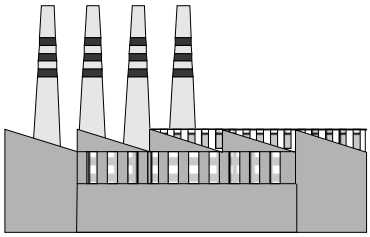
Annex 5: Value Stream map of non technical campaign setup

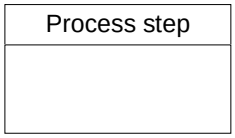
Value stream mapping is a lean manufacturing tool that can be used for detecting waste in processes (Rother & Shook, 2003). This annex introduces value stream mapping and visualizes the current situation of the non technical campaign setup process.
As indicated in chapter 2, the following types of waste can be distinguished: defects, overproduction, inventory, unnecessary processing, unnecessary movement of people, unnecessary transport of goods, waiting and loosing knowledge.

In a value stream map the main information process and the physical process are visualized. Next to the process steps, inventory between process steps and other 'lean manufacturing' wastes can be visualized. At the bottom of the value stream map a time line is presented, which contains the value added and non value added time. The difference between the non-value added time and the value added time is an indicator for the amount of waste in the process. When the non-value added time is at least ten times as long as the value added time, the process is most likely to contain much waste (Rother & Shook, 2003; George, 2003).

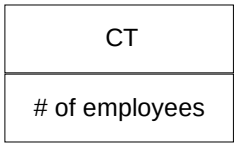
Value stream symbols

Value stream maps make use of standard symbols (Rother & Shook, 2003). The symbols used to make a value stream map of the campaign setup processes are:

Symbol	Explanation
 Customer	Final customer of a service.
 Customer (in supply chain)	Customer in the supply chain; another company that processes the organizations output.



Process step; when the process step is carried out at a subcontractor, the subcontractor is mentioned in the lower box.



Data box; the data box contains the cycle time (CT) and the number of employees. Since this research is carried out in a service organization, uptime and change-over-time are not included.

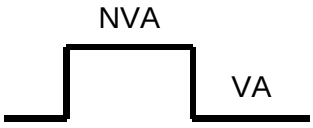
The output is pushed to the next production step. This symbol is only used between process steps.

The next production step pulls the output of the production step. This symbol is only used between process steps

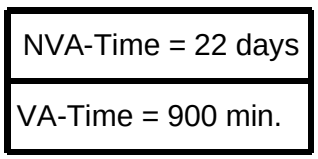
Inventory; the number of days a task is in inventory is shown below the symbol.

Electronically information flow.

Information flow.



Timeline; the non-value added time (NVA) is shown above while the value added time is shown below (VA).



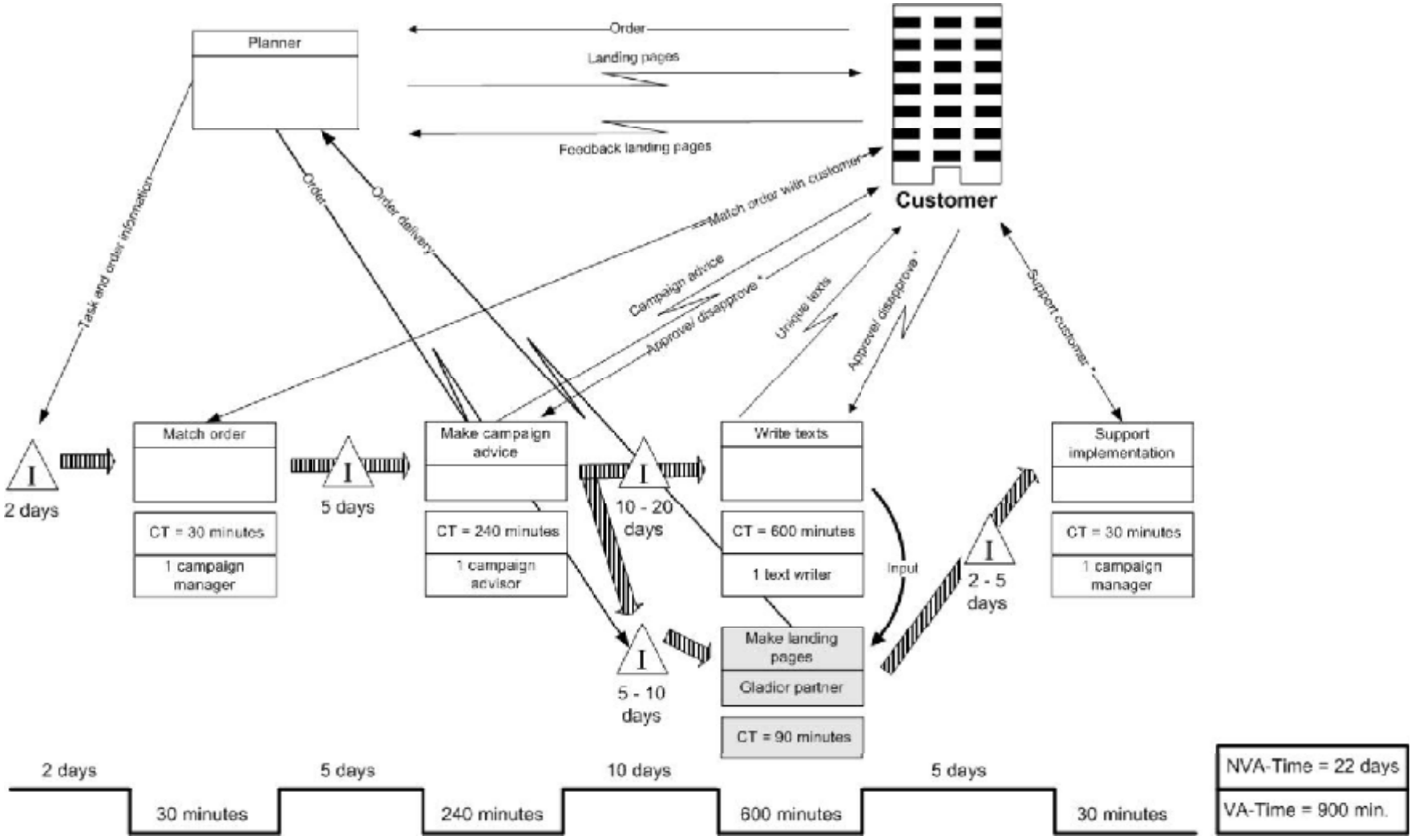
End of the time line; with the sum of the non-value added time and the value added time.

Non-technical campaign setup

Together with the campaign manager responsible for the planning (named the planner in this research), three campaign advisors and a text writer, a value stream map is created for the non technical campaign setup process. This value stream map can be found on the next page.

In order to improve the clarity of the value stream map, rework is not visualized (also not in the (non-)value added time). The time required for rework is customer dependent and is highly variable.

Since it is expected that the largest improvements can be gained between process steps, it is decided not to focus on the specific process steps in more detail. Within the process probably some non-value added waste can be identified. But this waste is probably negligible compared to the improvement opportunities that can be found between process steps.



* Time required for waiting on customer input is not taken into account in the CT time.

Figure a5.1: Current state value stream map of the non-technical campaign setup process.

Annex 6: Value Stream map of the technical campaign setup

This annex presents the value steam map of the technical campaign setup process. In annex 5 the modelling conventions for value stream mapping are discussed.

Together with a technical campaign manager a value stream map is created for the technical campaign setup process. This value stream map is visualized on the next page.

In order to improve the clarity of the value stream map, rework is not visualized (also not in the (non-)value added time). The time required for rework is customer dependent and is highly variable.

Since it is expected that the largest improvements can be gained between process steps, it is decided not to focus on the specific process steps in more detail. Within the process probably some non-value added waste can be identified. But this waste is probably negligible compared to the improvement opportunities that can be found between process steps.

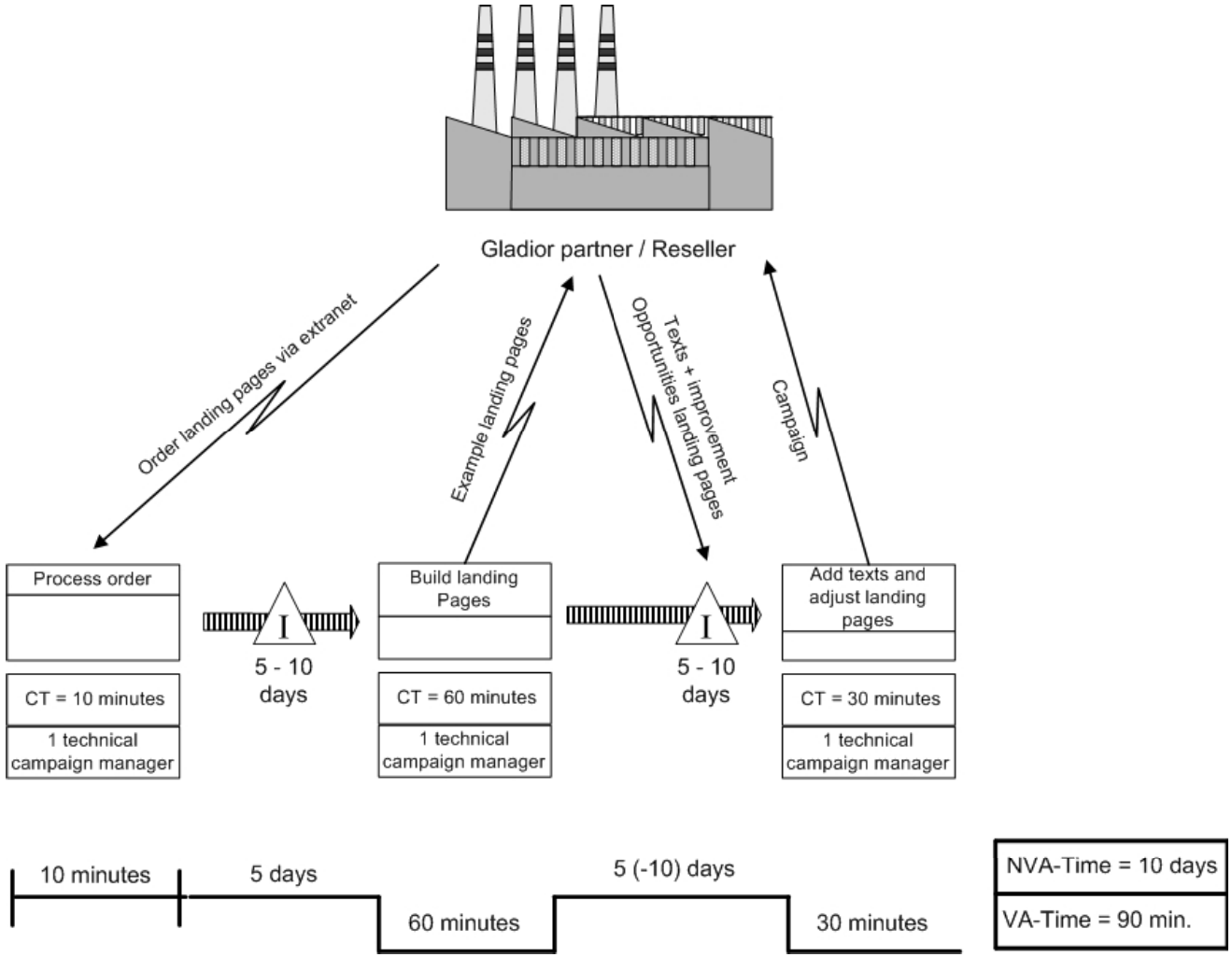


Figure a6.1: Current value stream map of the technical campaign setup process

Annex 7: Lean waste matrix of non-technical campaign setup

A lean waste matrix is a tool for detecting waste in organizations (Berendsen & Vixseboxse, 2007). This annex introduces the lean waste matrix principle and presents a lean waste matrix of the non technical campaign setup process.

Lean waste matrix

A lean waste matrix is a simple tool that can help employees to detect waste in the processes in which they participate. In a lean waste matrix the different process steps of the process are shown horizontally, while the eight types of waste are vertically. In the matrix that occurs a cell is created for each type of waste in each process step. Because each type of waste is linked to each process step, it provide people a visual tool to detect waste in the process steps. In the lean waste matrix it is important that waste is detected, but is it less important that the identified waste is written down in the right cell (Berendsen & Vixseboxse, 2007).

In chapter 2 the following types are distinguished: defects, overproduction, inventory, unnecessary processing, unnecessary movement of people, unnecessary transport of goods, waiting, and loosing knowledge.

Non technical campaign setup process

On the next two pages the lean waste matrix of the non technical campaign setup process is presented. This lean waste matrix was made together with the planner of the campaign management team, a text writer and a campaign advisor.

Lean waste matrix of the non-technical campaign setup process

Process step: Type of waste:	Match order	Make campaign advice	Write texts	Order landing pages	Support implementation
Defects/rework		Some customers do not accept the keywords recommended and demand the use of generic keywords. These generic keywords do usually not contribute to a successful campaign. Therefore they do support the customer in achieving his marketing goals/aims.	When the texts are peer reviewed, sometimes adjustments have to be made (because the texts are not commercial enough). The customer sometimes requests adjustments to the texts because they do not completely meet the products/services of the customer.	Most customers demand adjustments to the landing pages. Most of these adjustments concern the lay-out of the landing page. The conversion moment mentioned in the text does not always match with the conversion moment available at the landing page (for example: the texts invoke the visitor is invoked to call a phone number, while the landing page contains an information form).	The customer sometimes does not implement the campaign fully. That influences campaign success negatively.
Overproduction		The campaign advice contains additional keywords so the customer can select his own keywords.			
Inventory	When a new order is placed, the planner directly assigns tasks to a campaign manager, campaign advisor, and text writer. Employees determine the priority of tasks based on the first in first out principle, except when the planner indicates a higher priority for another task. Most employees have for a couple of days or weeks of tasks in their task list. Due to this, tasks are inventory for some workdays before they are executed. The inventory is especially high for making the campaign advice and for text writing. All campaign advisors and text writers (except campaign managers) work only one or two days a week, so when they have for three work days of inventory the lead time of the tasks already becomes a week. For writing texts task the time spent in inventory can be even longer, because writing texts is more time intensive.				
Unnecessary processing		In most cases the campaign manager has to call the customer, in order to check if the customer already approved the campaign advice / texts / landing pages (or complete campaign). For most customers this has to be done multiple times.			The implementation steps sometimes have to be explained multiple times to the customer. Sometimes the customer informs his web designer incorrect.

Process step: Type of waste:	Match order	Make campaign advice	Write texts	Order landing pages	Support implementation
Unnecessary movements of persons or transport of goods					
Waiting	This process can only be carried out when the customer has time available / has time to answer the phone. That sometimes can take some days.	Most customers do not directly approve the campaign advice / texts / landing pages (or the complete campaign), when these are sent to the customer. The time between sending something to the customer and getting feedback sometimes can take up to several weeks. Especially when the campaign advice is not approved, the next process step cannot be carried out.	Sometimes customers do not implement their campaign fast or at all. As long as the campaign is not implemented, the customer is making affiliation cost while no results are obtained.		
Loosing knowledge	In most cases, the sales persons do not make a customer-visit-report, or makes additional remarks in the CRM system. This also implies that the customer has to provide information twice.				

Table a7.1: Lean waste matrix of the non technical campaign setup process

Annex 8: Lean waste matrix of technical campaign setup process

This annex presents the lean waste of the technical campaign setup process. This matrix is made together with two technical campaign managers.
An explanation of the lean waste matrix principles can be found in annex 7.

Lean waste matrix of the technical campaign setup process

Process step: Type of waste:	**Process order**	**Build landing pages**	**Complete campaign / add texts**
Defects/rework	Glacior partner has in most occasions to request texts for the campaign at the reseller. For the resellers concerned, this request has to be made for each individual campaign.	When the landing pages are built, some resellers/customers want adjustments in the lay out or conversion moment. Sometimes the customer wants a different basis lay-out, sometimes just minor adjustments. Sometimes the customer or the reseller insists on a conversion method that does not suit the customer their products/services. For example, a consultancy firm that wants to attract potential customers for their interim management services by tempting visitors to fill out a digital information form. Since in interim management services mutual trust is expected to be very important, tempting the visitors to call the consultancy firm for more information and to make an appointment would probably be more effective (in the case the consulting firm has the front office for processing these call's).	When the texts are written and entered into the landing page, the lay out of the landing page sometimes has to be adjusted (because the texts do not fit the current lay-out). Sometimes the texts contain a different conversion moment or the texts ends with the same line as the conversion moment starts with. For example, the texts say the customer has to call a phone number, while the page ends with a contact form (without a phone number). Some customers do not give their feedback all at once, but give points for improvement when a new example is made by the technical campaign manager. Some resellers/customers want to implement the campaign without (unique) texts, even though that negatively influences the campaign (even after the texts are added).
Overproduction			
Inventory		All the technical campaign managers have many tasks in their tasks ist. Therefore the new campaigns have to wait one to two weeks before they are built (and so the task is in inventory for one or two weeks).	When feedback is received from the reseller, adding the tasks or reworking the campaign is again put into the task list of the technical campaign manager. So these tasks spend again one or two week(s) in inventory.

Process step: Type of waste:	**Process order**	**Build landing pages**	**Complete campaign / add texts**
Unnecessary processing	In this process, each text field of the (digital) order of the customer has to be copied pasted into the 'customer database'. So the same information has to be entered twice into the system.	In some occasions the customer or the reseller wants to add all kinds of whims to the landing pages. These whims will not make the campaign more successful, but might distract the visitors (and prevent that visitors actually carry out the desired action).	
Unnecessary movements of persons or transport of goods	On a daily basis, the technical campaign manager has to print all orders (on paper), and bring those papers to the finance department (that is located on a different floor).		
Waiting		When the texts are included in the order, the reseller and customer have to wait one to two weeks before the technical campaign manager has finished the landing pages and completed the campaign.	Before the campaign can be completed, first the texts are required. Waiting on the texts can sometimes take up to several months.
Loosing knowledge	Most orders do not include the campaign goals of the customer, nor an indication which lay-out or which conversion type should be used. So this choice has to be made by the technical campaign manager. When the reseller or customer has another lay out or conversion moment in mind, the landing pages have to be reworked. Especially Gladior direct puts orders that only include the URL of the website of the customer, without even a campaign advice (and not using the order module of the extranet of Gladior).		Some resellers pose kind like questions multiple/many times (for different campaigns). This lose of knowledge at the reseller side is time consuming.

Table a8.1: lean waste matrix of the technical campaign setup process

Annex 9: Visual capacity allocation method for Gladior Partner

	Monday		Tuesday		Wednesday		Thursday		Friday	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
Employee # 1										
Employee # 2										
Employee # 3										
Part time employee # 1										
Part time employee # 2										
Part time employee # 3										
Part time employee # 4										

Campaign setup/adjustment Support Campaign evaluation

** this form can be filled out by using three markers, on a daily or weekly basis. Color consistency can help in creating clarity.*

Annex 10: Trial of the task prioritizing procedure

Section 4.1.2 discussed the task scheduling procedure Gladior can apply to create pull between process steps and improve process flow. This annex elaborates on the trial versions created during this research for testing the task prioritizing procedures. The trial for Gladior Direct is created in cooperation with the campaign manager who is responsible for the planning (planner), while the trial for Gladior Partner is created in cooperation with the technical campaign manager who is responsible for processing the orders of landing pages.

Gladior Direct

As indicated in section 4.1.2, a highest priority system is most suited for Gladior Direct. Such a system should have the following details:

- Be suited for task with slack. The allowed time between order and order delivery is longer than the processing time of the order.
- Take into account a limited number of employees to which tasks can be assigned to.
- Take into account that not all employees can execute all tasks, due to the specialization of the campaign advisors and the text writers.

A highest priority system with slack should attempt to maximize the priority of the executed tasks (Pinedo, 2005). In order to determine the priority of an activity, scores have to be allocated to activities. When scores are determined, campaigns can be allocated to employees by descending score. To create pull, employees can only get a limited amount of tasks assigned. When an employs has not started on a assigned task at the end of a workday, the task is reentered in the prioritizing system. That should prevent a queuing of task at the employee.

After a discussion with the planner, the following criteria are indicated for determining priorities of tasks (in ascending importance): the next process step to be executed, the remaining number of days for finishing the next process step, and number of keywords.
The number of days remaining represents an estimated average days that still can be used to finish this process step, and still deliver the order within one month (if there are no customer participation problems). The number of keywords indicates the importance of the customer for Gladior. The criteria are given the following weight factor:

Criteria:	**Weight:**
next process step:	1
remaining number of days:	2
number of keywords:	3

For the setting up of campaigns, only the process steps 'match the order', 'make the campaign advice', and 'write texts' have to be planned. The campaign manager who matches the order with the customer is also responsible for matching the campaign advice, texts and campaign (completed landing pages) with the customer. Tasks can only be assigned to:

Task	Can be assigned to:
Match order:	campaign manager
Make campaign advice:	campaign advisor or text writer (optional)
Write texts:	text writer, campaign manager or - advisor (optional).

Determining the scores on the criteria

In order to determine the score on the criteria next process step, the following scores can be used:

If the next process step is 'match the order' the score should be 2.
If the next process step is 'make the campaign advice' the score should be 1.
If the next process step is 'write texts' the score should be 3.

Writing texts is most important according to the campaign managers, because after the texts are finished the campaign can be concluded and implemented. Second important is matching the order, because that is the first customer contact moment after signing the contract. When that period is long, the perceived quality by the customer can be negatively influenced.

To determine the score on the number of days left in the next process step, guidelines are required for the number of days in which a process step should completed.
According to internal formulated goals, the order should be matched with the customer within three workdays after the order is received. The campaign advice should be finished within five workdays after the campaign is matched with the customer. After the campaign advice is confirmed by the customer, the texts should be ready within five workdays after the campaign advice is confirmed.
In the case the guidelines can be met and the customer requires less than five workdays to confirm the campaign advice and the texts, the campaign is can be completed in a month.

The scores for the remaining number of days are:

More than four days left:	1
Three days left:	2
Two days left:	5
One day left:	6
Zero days left:	7
Less than zero days left:	9

The increase in scores assures that the priority increases when the deadline comes nearer.

The score on the number keywords can be determined as follows:

Less than 30 keywords:	1
Between 30 and 49 keywords:	2
50 or more keywords:	3

For each activity the final score can be calculated by the following formula:

Final score = 1 x 'score next process step' + 2 x 'score days remaining' + 3 x 'score keywords'

The planner also would like to use this procedure for assigning 'campaign adjustment' and 'campaign expansion' tasks to employees. For these cases, the number of adjusted keyword/texts or the additional number of keywords can be used in order to determine the score on this criteria.

This procedure is an improvement for the process because it provides more insight in the progress of the campaign setup, it makes sure that tasks with the highest priority are carried out first, and it provides insight in the capacity. The insight in the capacity especially provides insight in how many tasks exceed their deadline per process step, and how much capacity is required to fulfil each activity before the deadline.

Gladior Partner

In section 4.1.2 the following details for the planning algorithm for Gladior Partner are indicated:

- Be suited for tasks with slack, because the allowed delivery time is much longer than the processing time.
- Take into account a limited number of employees to which tasks can be assigned to.
- Assign all types of tasks to all employees, since all technical campaign managers can execute all tasks and due to task rotation campaigns are not bounded to a certain technical campaign manager anymore.

After a discussion with the technical campaign managers, the following criteria are set for determining the final score (in ascending order): the size of the reseller, the number of keywords of the campaign and the number of days left until the deadline. Next to that, an additional priority should be addable for the case a campaign is urgent.

The number of days left until the deadline is most important to ensure timeliness of the order. The number of keywords of the campaign is second important, because larger campaigns are considered more important. The reseller criteria is least important. But for similar scores on the other criteria a campaign from a large partner should receive a higher priority than a campaign from a small partner. This leads to the following weight factors for the criteria:

Criteria:	**Weight:**
Reseller:	1
Number of keywords:	2
Delivery date:	3

After determining the criteria, the possible scores on the criteria are determined together with the technical campaign managers.

The score on the criteria reseller should be 1 if the reseller has less than 400 active campaigns at Gladior Partner. The score should be 2 if the reseller has more than 400 active campaigns at Gladior Partner. Resellers with more than 400 campaigns have a delivery period of five workdays, while other resellers have a delivery period of ten workdays.

The score on the criteria number of keywords should be 1 if the campaign has less than 15 keywords, 2 if the campaign has between the 15 and 29 keywords, and 3 if the campaign contains 30 or more keywords.

The scores for the remaining number of days are:

Over three days	1
Three days	2
Two days	3
One day	4
Zero days, or less	5

The additional priority that can be added, should give a campaign the highest score possible. The current maximum score (sum over weight times the maximum score on each criteria) is (2 + 6 + 15 =) 23, while the minimum score is (1 + 2 + 3 =) 6. Adding the priority should bring the final score to at least 24, and therefore the additional priority should get score (24-6 =) 18.

For each activity the final score can be calculated by the following formula:

$$\text{Final score} = 1 \times \text{'score reseller'} - 2 \times \text{'score keywords'} + 3 \times \text{'score days left'} + 1 \times \text{'priority'}$$

In this situation each day capacity should be made available for building landing pages. As a guideline, one order can be assigned per hour of available capacity. The actual capacity made available should be larger than the average time required to complete all campaigns, to prevent backlogs or to decrease the order backlog (after a week with an above average number of orders).

This procedure is a process improvement because it provides more insight in the status of the order delivery (backlogs), in the number of campaigns that can or will be delivered in a workday, and in the priorities of tasks.