

UNIVERSITY OF LJUBLJANA
FACULTY OF ECONOMICS

MASTER'S THESIS

**MANAGING QUALITY IN DIRECT MARKETING INDUSTRY:
A CASE STUDY OF LINEA DIRECTA COMMUNICATIONS**

Ljubljana, September 2008

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Author's STATEMENT

I, Iztok Hvala, hereby certify to be the author of this Master's thesis that was written under the mentorship of Borut Rusjan, PhD, and in compliance with the Act of Authors' and Related Rights – Para.1, Article 21. I herewith agree that this thesis maybe published on the website pages of the Faculty of Economics.

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1. Introduction

To begin with, I would like to describe the significant milestones over the past few decades in the field of Total Quality Management (TQM), which can be considered one of the most promising methods for quality management. So far, it has been proven (a subject of further discussion within the thesis) to be one of the most promising concepts for the use of implementation of quality management in direct marketing. The main authors in the field of TQM are considered to be Deming (1986), Juran, Juran and Gryna (1993), Crosby (1979), Feigenbaum (1991), and Ishikawa (1985), which have developed certain well-established propositions, which are accepted throughout the whole world. Findings of these authors provide a clear picture of TQM practices, its philosophy and principles. Several awards, which take notice of principles mentioned above, are given worldwide. The most well-known are: Deming Prize in Japan, the European Quality Award in Europe, and the Malcolm Baldrige National Quality Award in the United States of America. These awards differ in their individual characteristics. Since my thesis will largely cover also the implementation of quality management model, it needs to be emphasized that various researches have already been conducted on this topic. Not only do these researches vary within the field of TQM, but also the whole quality management topic is approached in different manners. After the careful study of the work of the authors mentioned above, it has been found that they have different views about TQM, although some similarities can be found. However, the TQM concept is still a subject of debate (Easton and Jarrell, 1998) with a topic that is not completely clarified and a hazy concept (Dean and Bowen, 1994). TQM still has different meaning to different researchers (Hackman and Wageman, 1995). To sum up, the managerial perspective suggests that investment in service quality and building and maintenance of customer relationships can only be justified if it results in improved profitability (Rust and Zahorik, 1993). Since this is a matter of separate discussion, it will not be assessed within the thesis. To some extent, this effect has also been proven in some recent books that argue on values of quality service within direct marketing and more specifically on the field of call centres (Gilmore, 2003). Furthermore, at this point, there is no literature on application of quality management models in direct marketing available.

The purpose of the thesis is to make an overview of direct marketing and quality management and use these findings in order to incorporate them into Linea Directa Communications (LDC), using the most suitable method of quality management through the application of the DMAIC methodology. Furthermore, the intent of the thesis is to improve the quality of certain processes as well as the output of the company in its direct marketing actions. Marketing concept is driven by improvements in organizational performance by attracting and retaining satisfied customers. Most of studies and researches in marketing focus on the attracting part and tend to develop new products in order to achieve higher levels of customer acquisition. Nowadays, marketing academics focuses mainly on ways to produce new and very specialized products for the purpose of satisfying more and more specific needs.

However, most recent trends indicate changes and it has become evident that costs of customer acquisition are much higher than costs of customer retention. It is a logical consequence that caring for existing customers and building good relationships is also becoming a growing interest of practitioners since it is proven to improve profitability. Furthermore, the quality of output is widely seen as a key antecedent for successful customer relationships. Moreover, this is the case particularly in a service sector where quality can be difficult to imitate and as such, it can potentially provide the basis for a sustainable competitive edge. Offering a superior-quality service that the competition cannot reach gives consumers (or in this case business clients) the reason for selecting and remaining with a particular provider. Conversely, a service offer that is inferior or indistinct may lead to greater problems in attracting customers and to an increased likelihood of defection. To sum up, quality can, in principle, provide the basis for enhanced loyalty, retention and improved business performance.

The main goal of the thesis is to make an overview of available quality management methods, draw conclusions, which method would be the best to use in direct marketing industry and apply the model to Linea Directa Communications. There are several approved methods available, however, it should be assessed carefully which one to use in each specific company. In practice, combining several methods proves to be the worst possibility. It has also been observed in the past that choosing the wrong method can also have negative effects on processes within the company. Furthermore, LDC is becoming a large international company, and this is why the provision of quality services is becoming a growing issue. It is extremely hard to control the work in such differentiated environment. It is evident fact that companies which ignore the care for quality of their operations are bound to fail. This is also the reason why the leadership of the company decided to assess the quality issue and form a group within the company, what proved also to be the source of the idea for the topic of this Master's thesis.

Research objectives of the Master's thesis can be summed up in the following points:

1. To get an overview of quality management in services through implementation in direct marketing companies.
2. To obtain a quality management model for direct marketing company.
3. To estimate effects of quality management system on overall business performance in (specific) direct marketing company.

In order to reach the objectives above, the thesis will also offer answers to following questions:

1. What are the key elements of direct marketing?
2. What are the benefits of direct marketing?
3. What is the meaning of quality management in service industry?
4. What model of quality management is the most suitable for assessing quality in direct marketing companies?

5. How can quality management model be implemented into practice?
6. What are the estimated effects of implementation of quality management system into Linea Direct Communications?

The methodology used in the study will be based both on secondary and primary data. Secondary data will be gathered from various sources within the Linea Directa Communications database. A part of primary data will be acquired from the project assigned to the team for quality in the company, while the majority is based on individual work. Both data will be of quantitative as well as of qualitative nature. As already mentioned, the case study will be conducted on the company and all theoretical knowledge will be applied in order to produce a well-organised model. The team dealing with quality consists of three international members from the fields of international project management, international CRM, and international mentorship and has been assured to enjoy the full support from each country on the local level. All the consents signed from the CEO of the company and members of the team have been gathered in order to use the acquired information for the purpose of this Master's thesis. The study makes use of small percent of the data acquired for the application of one of the most suitable models. The purpose is to clarify whether quality management methods can be applied to direct marketing industry and to provide a certain guideline on how it should be assessed. In general, the work of the team dealing with quality serves more as inspiration, since models that will be discussed through thesis are much more specific in nature. Separate researches and interviews were conducted according to the needs while thesis was being written. All available theoretical content from various books on the topic of direct marketing and quality management as well as most recent articles from databases like ProQuest, EBSCO, Emerald, ScienceDirect, and others will be applied as well.

The structure of the thesis is formed in a comprehensive way and it starts by defining what direct marketing is and how it was evolved from its early beginnings. After that, benefits of the direct marketing over traditional marketing are presented and few indications for the future are described. Furthermore, there is an overview of all direct marketing channels presenting telemarketing, direct mail, catalogue marketing, interactive marketing and other communication channels. Direct marketing chapter concludes with consumer and marketer's perspective on current situation and future predictions with added description of current European legislation connected to the industry. The third chapter is devoted entirely to quality management, starting with thorough description and overview and continuing with the development of quality management through three important milestones that affect quality management, as we know it today. Penultimate subchapters are dealing with Total Quality Management, which is the main basis for all current quality management methods, as well as quality standards and awards, which contribute greatly to the development of methodology. The chapter is concluded with the description of quality management in a specific setting of business-to-business oriented service industry, in which LDC is majorly present. The fourth chapter provides theoretical overview of Six Sigma methodology and gives insight into company's prerequisites for the implementation of Six Sigma in the form of management involvement, cultural changes, infrastructure and training and business strategy. Furthermore,

this chapter explains the DMAIC methodology in details. The fifth chapter describes Linea Directa Communications as a company, provides its strategy, mission, vision, values as well as a description of services in order to emphasize how important role these elements play in implementation of quality management systems. The sixth chapter is the case study providing a clear understanding of how Six Sigma as the chosen quality management method can be implemented into LDC. Due to limitations of information, example will be based on actual situation with minor predictions included. Nevertheless, it will be assessed from the practical point of view including real course of work within the company. The case study starts by assessing company's readiness for Six Sigma. The remaining part of the chapter six continues with Six Sigma project selection and identification of core processes and customers. Last part is devoted to DMAIC methodology used to implement Six Sigma into LDC. In the conclusion, it is reviewed whether goals and objectives are reached and answers to the questions from the introduction are given. General recommendations are offered in order to provide guidelines for LDC as well as other direct marketing-oriented companies. The end of the thesis includes literature, sources, glossary, list of abbreviations, list of tables, list of charts and eight appendices.

2. Direct Marketing

2.1. What is Direct Marketing?

Direct marketing is one of the fastest-growing industries for serving customers. More and more business marketers turn to direct mail and telemarketing in response to high and increasing costs of reaching business markets through a sales force. In total, sales from direct marketing generate almost 9 percent of the U.S. economy (McCarthy, 2002, p. 4B). Although it is more developed in larger markets and by the most powerful manufacturers, direct marketing is also “the best placed tool to help small and medium-sized companies protect themselves from big companies with massive advertising budgets” (di Talamo, 1994, p. 261). It is as appropriate for small, highly defined audience, as well as for the large segment of the population (Young, 1993, p. 31), and can be used internationally as well as within the domestic market. Companies are trying to increase sales force productivity in addition to substitute mail- and phone-based selling units to reduce field sales expenses. Sales produced through traditional direct-marketing channels (catalogues, direct mail, and telemarketing) have been growing rapidly (Kotler and Keller, 2006, p. 604). In fact, almost 15 years ago, di Talamo (1994) suggested that direct marketing could play a major role in opening Europe for business.

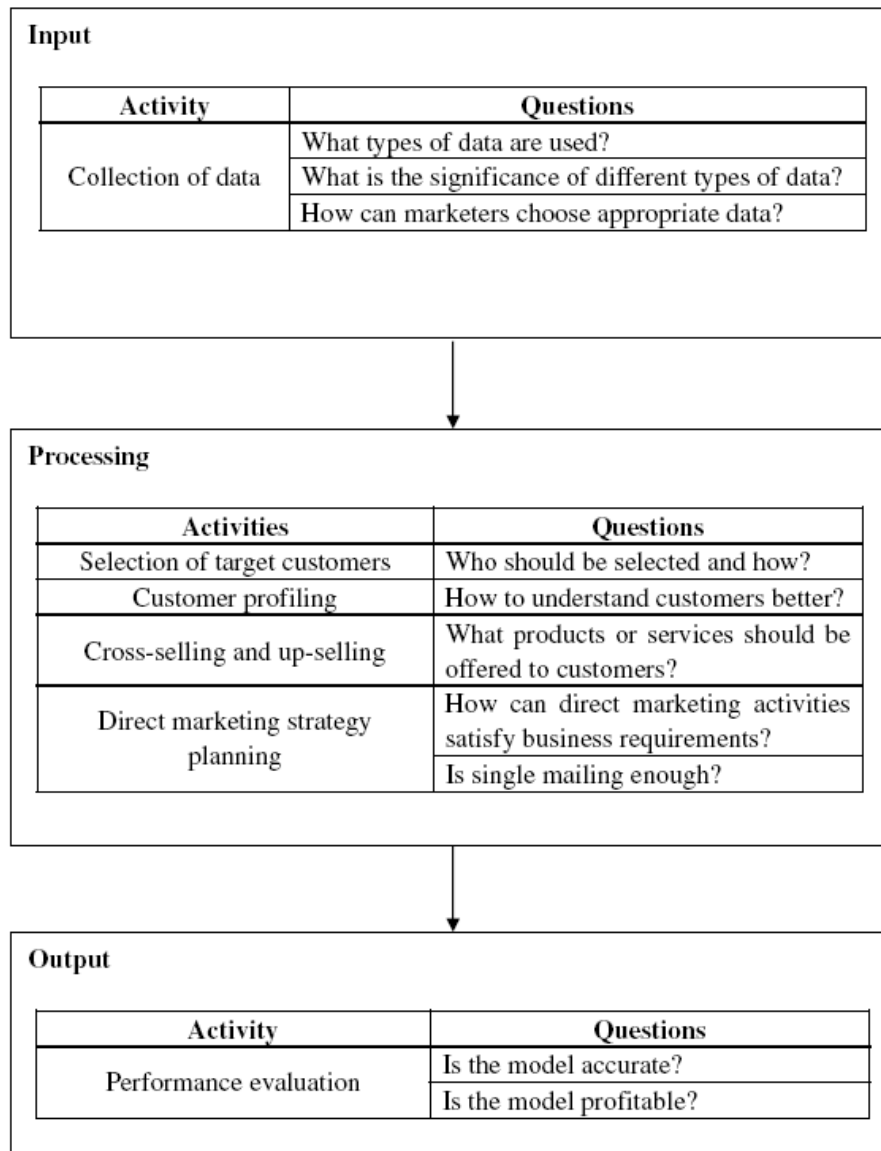
Bird (1999), a practitioner of a worldwide authority, originally defined direct marketing as: “any activity which creates and exploits a direct relationship between you and your customer as an individual”. Definitional difficulties occur because direct marketing is neither a medium (like direct mail) nor a channel of distribution (like mail order): “rather it is a means of communication which encompasses both media and channels, and multi-media and multi-channels at that” (Young, 1993, p. 33). It has been traditionally defined as “an interactive system of marketing which uses one or more media to affect a measurable response and/or transaction at any location” (Squires, 1993, p. 40). This element of “measurable response” differentiates it from traditional advertising. Rapp and Collins (1990) see direct marketing as the use of consumer-direct channels to reach and deliver goods and services to customers without using marketing middlemen. These channels include direct mail, catalogues, telemarketing, interactive TV, kiosks, Web sites, and mobile devices. Direct marketers seek a measurable response, typically a customer order. This is sometimes called direct-order marketing. Today, many direct marketers use direct marketing to build a long-term relationship with the customer. They send birthday cards, information materials, or small premiums to certain customers. Airlines, hotels, and other businesses build strong customer relationships through frequency award programs and club programs (Kotler and Keller, 2006, p. 604).

Direct marketing is a discipline, a subset of marketing, which permits companies to carry out certain marketing tasks more efficiently by gathering, analysing and using information about

individual customers and prospects. This information enables companies to identify which people from customer and prospect files are likely to be interested in a particular product, service or offer. The company can then select only those who will find their message appropriate and communicate with them alone, eliminating much of the wastage inherent in other forms of advertising. This is the main reason why direct marketing is so cost-effective. The company can also use customer information to develop “profiles” and use these to identify the best sources of new customers (Thomas and Housden, 2002, p. 5). Direct marketing is a method of marketing based on individual customer records held in a database. These records are the basis for marketing analysis, planning, implementation of programs, and control of all this activity. In contrast, general marketing is structured around the creation of brands for each product and the attainment of market share for that product. In fact, the key to modern direct marketing is the capture of individual customer details at the first sale, so that the marketer can begin a relationship with those customers, subsequently treating them differently over time in order to generate repeat business (Tapp, 2005, p. 4). Direct marketing is the process of identifying customer needs and satisfying them in a way that is acceptable to both parties: customers feel that their needs have been recognized and fulfilled at a fair price and the supplier makes a fair profit. According to Peter Drucker, the aim of marketing is “to make selling superfluous; to know and understand the customer so well that the product or service fits ... and sells itself”. This statement, written in 1973, is also a fairly accurate definition of the objective of direct marketing. Collecting and applying customer and prospect data enables marketers to identify customer needs and wants more precisely and communicate proposed solutions more cost-efficiently (Thomas and Housden, 2002, p. 5).

Direct marketing develops interactions between the company and its customers. A typical interaction between direct marketers and customers begins when direct marketers send solicitations to customers for the purpose of selling products or services. After receiving the solicitations, customers need to decide whether to buy the suggested product or not. By observing customers’ responses (i.e., to buy or not to buy), direct marketers adjust their strategy and carry out new rounds of direct marketing activities. Chart 1 depicts clearly that in direct marketing, the following activities take place sequentially.

Chart 1: System perspective of direct marketing model



Source: Bose and Xi, 2008, p. 2

The first activity is the collection of customer data. Since the revenue of direct marketing depends on the number of customers responding to solicitations, the selection of target customers is the next important activity of direct marketing. Before target selection, a sophisticated customer profiling is usually conducted to make the selection more efficient. Selection needs to be optimized in order to satisfy various business requirements and maximize the generated revenue. The final activity is performance evaluation of the direct marketing activities (Bose and Xi, 2008, p. 2).

2.2. Development of Direct Marketing

Direct marketing has developed rapidly over the last 15 years owing to technological change and developments in markets and marketing. In 1086, William the Conqueror created the Domesday Book as a record of what each individual owned. The concept developed by George Orwell in his 1984 novel was the one of more sinister surveillance by “Big Brother”. Although marketing might not be seen in either light, it is certainly being manifested in a parallel manner at least. Personalized data are increasingly being integrated via data-fusion to form the next phase of database provision: biographic information (Evans, 1998, p. 56). Direct marketing is not new in concept. In Venice in 1498, Aldus Manutius published a book catalogue and William Lucas published a gardening catalogue in England in 1667. A variety of other mail order catalogues and clubs appeared, especially in Europe and the USA through the eighteenth and nineteenth centuries and in fact, there was a significant growth in the USA particularly during the 1800s because of the rising demand for goods from isolated communities which could be serviced by the improving distribution and postal systems (IDM, 1995). The mail order industry in Europe also grew on the basis, initially, of “savings clubs” (for example Christmas Clubs) and this was extended to credit availability, so major motivation in Europe revolved around financial considerations. The development of sophisticated credit referencing can be traced back to this era and it is a significant factor in the growth of current direct marketing, as it is explored later. Direct marketing has probably been the most significant development in marketing in recent years. It has contributed to the paradigm shift from transactional marketing based on the “marketing mix” approach created by Borden (1964) and popularised into the 4Ps by McCarthy (1960), to the notion of retention strategies within a relationship marketing context. There are several reasons for this change and they can be categorised either as “demand” for, or “supply” of direct marketing (Evans et al., 1996).

An increasing emphasis on leisure interests has led to more intense competition for consumer’s time and attention. At the same time, the amount of advertising on TV, radio and press has grown to the extent that “clutter” is a real problem. Combined, these factors have contributed significantly to the reduction in the effectiveness of traditional media. However, the empirical research indicated that “clutter” may also be emerging as an increasing problem among the more heavily targeted groups (Evans et al., 1995, p. 17). Recession is in many ways responsible for growing concern among companies that marketing expenditure needed to show quantifiable returns (Uncles, 1994, p. 341). It was no longer acceptable to be unaware of which half of the money spent on advertising was wasted. Companies began to demand accountability. Direct marketing was able to accommodate this demand, and is thus “the one communications discipline which not just claims to be accountable but which can really answer the question: How much did we actually sell as a result of this activity?” (Young, 1993, p. 25). The direct marketing industry has been the fastest growing sector of marketing communications for more than a decade at the beginning of twentieth century (Key Note, 1994).

Demand-side factors are based on changes in market behaviour and also on changes in the effectiveness of traditional media. In terms of markets, it is clear that fragmentation has taken place. Markets have become demassified and this has been a major trend aiding the growth of direct marketing (Evans, 1998, p. 56). As a consequence, direct marketing has diversified. In the 1980s, there was a rapid growth of direct marketing in the financial service industry and the adoption of discipline across the whole business-to-business sector. Today, there are fast-moving consumer goods (FMCG) companies, retailers, multi-national industrial conglomerates and successful dot-com companies; in fact every type of organization uses direct marketing to acquire and develop customers (Thomas and Housden, 2002, p. 2).

2.3. Benefits of Direct Marketing over Traditional Marketing

Direct marketing benefits customers in many ways. Home shopping can be fun, convenient, and hassle-free. It saves time and introduces consumers to a larger selection of merchandise and gives the option for comparative shopping by browsing through mail catalogues and online shopping services. Consumers can order goods for themselves or others. Business customers also benefit from learning about available products and services without losing excess time in meeting salespeople. Sellers benefit as well, since direct marketers can buy a mailing list containing names of almost any group: left-handed people, overweight people and millionaires. They can customize and personalize messages. Direct marketers can build a continuous relationship with each customer. The parents of a newborn baby will receive periodic mailings describing new clothes, toys, and other goods as the child grows (Kotler and Keller, 2006, p. 606).

Many initial stages that a marketer goes through are the same for general and direct marketing. Especially at the start of the process, the new product development is exactly the same in both cases. Continuing through the process, much of strategic thinking that needs to be done, for example matching strengths with market opportunities, should also be the same. Both marketing types use research methods although the relative emphasis is very different (Tapp, 2005, p. 10). However, direct marketing can be timed to reach prospects at the right moment and receive higher readership because it is sent to more interested prospects. It permits the testing of alternative media and messages in search of the most cost-effective approach. Direct marketing also makes the direct marketer's offer and strategy less visible to competitors. Furthermore, direct marketers can measure responses to their campaigns to decide which have been the most profitable. Direct marketers can use a number of channels to reach individual prospects and customers: direct mail, catalogue marketing, telemarketing, TV and other direct-response media, kiosk marketing, and e-marketing (Kotler and Keller, 2006, p. 606). Although the process of strategy setting is the same, the content of that strategy is likely to be different: direct marketing gives the marketer a choice of different strategies. Focusing on customers rather than products, segmenting according to how the company sees the value of customers, distributing directly to bypass retail: these are just some of the key

areas (Tapp, 2005, p. 10). In other words, direct marketing can support all aspects of marketing process. It is not an alternative to marketing, but an integral part of it. If there is a difference between the two, it can be presented through the fact that marketing tends to focus at the broader market level whilst direct marketing is focused more tightly at the individual level. It achieves this by using sophisticated information management techniques (Thomas and Housden, 2002, p. 6). The most obvious operational difference between the two methods is in the area of communications. General marketers tend to use mass media to build brands and use sales promotions in the retail environment. To compare with, direct marketers do sometimes use mass media when addressing new prospects, but only in order to get a response. They use personal media – direct mail, telemarketing – when developing a relationship with existing customers (Tapp, 2005, p. 10).

2.4. Direct Marketing Communication Channels

2.4.1. Telemarketing

Telemarketing is the use of telephone and call centres to attract prospects, sell to existing customers, and provide service by taking orders and answering questions. Telemarketing helps companies increase revenue, reduce selling costs, and improve customer satisfaction. Companies use call centres for inbound telemarketing (receiving calls from customers) and outbound telemarketing (initiating calls to prospects and customers). In fact, companies carry out four types of telemarketing (Kotler and Keller, 2006, p. 611):

- Telesales – Taking orders from catalogues or ads and doing outbound calling. They can cross-sell the company's other products, upgrade orders, introduce new products, open new accounts, and reactivate former accounts.
- Telecoverage – Calling customers to maintain and nurture key account relationships and give more attention to neglected accounts.
- Teleprospecting – Generating and qualifying new leads for closure by another sales channel.
- Customer service and technical support – Answering service and technical questions.

Telemarketing is used increasingly in business as well as in consumer marketing. It is improving with the use of videophones, and will increasingly replace, though never eliminate, more expensive field sales calls. An increasing number of salespeople have made five- and six-figure sales without ever meeting the customer face-to-face. Effective telemarketing depends on choosing the right telemarketers, training them well, and providing performance incentives (Kotler and Keller, 2006, p. 611).

2.4.2. Direct Mail

Direct mail marketing involves sending an offer, an announcement, a reminder, or other item to a person. By using highly selective mailing lists, direct marketers send out millions of mail pieces each year – letters, flyers, foldouts, and other media CDs or DVDs. Direct mail is a common medium because it permits selectivity to target market, can be personalized, is flexible, and allows early testing and response measurement. Although the cost per thousand people reached is higher than with mass media, the people reached are much better prospects. Direct mail may be paper-based and handled by the postal service, telegraphic services, or for-profit mail carriers. Alternatively, marketers may employ fax mail, e-mail, or voice mail to sell direct. Direct-mail marketing has passed through a number of stages, which imply the graduate transfer from more traditional ways of marketing (Kotler and Keller, 2006, p. 606):

- “Carpet bombing” – Direct mailers gather or buy as many names as possible and send out a mass mailing. Usually the response rate is very low.
- Database marketing – Direct marketers mine the database to identify prospects who would have the most interest in an offer.
- Interactive marketing – Direct marketers include a telephone number and Web address, and offer to print coupons from the Web site. Recipients can contact the company with questions. The company uses the interaction as an opportunity to up-sell, cross-sell, and deepen the relationship.
- Real-time personalized marketing – Direct marketers know enough about each customer to customize and personalize the offer and message.
- Lifetime value marketing – Direct marketers develop a plan for lifetime marketing to each valuable customer, based on knowledge of life events and transitions.

In constructing an effective direct-mail campaign, direct marketers must decide on their objectives, target markets, and prospects; offer elements, means of testing the campaign, and measures of campaign success. Most direct marketers aim to receive an order from prospects. A campaign’s success is judged by the response rate. An order-response rate of 2 percent is normally considered good, although this number varies with product category and price. Direct mail can achieve other communication objectives as well, such as producing prospect leads, strengthening customer relationships, informing and educating customers, reminding customers of offers, and reinforcing recent customer purchase decisions (Kotler and Keller, 2006, p. 607). Direct marketers need to identify the characteristics of prospects and customers who are most able, willing, and ready to buy. Most direct marketers apply the R-F-M formula (recency, frequency, monetary amount) for rating and selecting customers. For any proposed offering, the company selects customers according to how much time has passed since their last purchase, how many times they have purchased, and how much they have spent since becoming a customer. Points are established for varying R-F-M levels, and each customer is scored. The higher the score, the more attractive the customer is. The mailing is sent only to the most attractive customers (Stone, 2007). Nash (1995) considers the offer strategy to be

consisting of five elements – the product, the offer, the medium, the distribution method, and the creative strategy. Fortunately, all of these elements can be tested.

2.4.3. Catalogue Marketing

In catalogue marketing, companies may send full-line merchandise catalogues, specialty consumer catalogues, and business catalogues, usually in print form but sometimes also as CDs, videos, or online. Many direct marketers have discovered that combining catalogues and Web sites can be an effective way to sell. Thousands of small businesses also issue specialty catalogues. The success of the catalogue business depends on the company's ability to manage its customer lists carefully, so that there is little duplication or bad debts, to control its inventory carefully, to offer quality merchandise so that returns are low, and to project a distinctive image. Some companies distinguish their catalogues by adding literary or information features, sending swatches of materials, operating a special hot line to answer questions, sending gifts to their best customers, and donating a percentage of the profits to good causes. By putting their entire catalogues online, catalogue companies have better access to global consumers than ever before, and save considerable printing and mailing costs in the process (Kotler and Keller, 2006, p. 610).

2.4.4. Interactive Marketing

The newest channels for direct marketing are electronic. The Internet provides marketers and consumers with opportunities for much greater interaction and individualization. Companies in the past would send standard media – magazines, newsletters, and ads – to everyone. Today, these companies can send individualized content and consumers themselves can further individualize the content. Companies can interact and dialogue with much larger groups than ever in the past (Case, 2004, pp. 32-34). The exchange process in the age of information, however, has become increasingly customer-initiated and customer-controlled. Marketers and their representatives must wait until customers agree to participate in the exchange. Even after marketers enter the exchange process, customers define the rules of engagement and insulate themselves with the help of agents and intermediaries if they choose so. Customers define what information they need, what offerings they are interested in, and what prices are they willing to pay (Ansari and Mela, 2003, pp. 131-145).

Interactive marketing offers many unique benefits. It is highly accountable and its effects can be easily traced. The Web offers the advantage of “contextual placements”. Marketers can buy ads from sites that are related to their offerings, as well as place advertising based on contextual keywords from online search outfits like Google. In that way, the Web can reach people when they have actually started the buying process. Light consumers of other media, especially television, can be reached. The Web is especially effective at reaching people during the day. Young, high-income, high-education customers' total online media consumption exceeds that of TV (Online Publisher's Association, 2002).

2.4.5. Other Communication Channels

Direct marketers use all the major media to make offers to potential buyers. Newspapers and magazines carry abundant print ads offering books, articles of clothing, appliances, vacations, and other goods and services that individuals can order by dialling a toll-free number. Radio ads present offers to listeners 24 hours a day.

Television is widely used by direct marketers in several ways (Edwards, 2001, pp. 14-19):

- Direct-response advertising – Some companies prepare 30- and 60-minute infomercials that attempt to combine the sell of commercials with the draw of educational information and entertainment. Infomercials can be seen as a cross between a sales call and a television ad and cost roughly €150,000 to €300,000 to make. A number of people have become famous with late-night channel switchers. Increasingly, companies selling products that are complicated, technologically advanced, or simply require a great deal of explanation, are turning to infomercials. They share the product's story and benefits with millions of additional prospects at a cost-per-lead or cost-per-order that usually matches or beats direct mail or print ads.
- At-home shopping channels – Some television channels are dedicated to selling goods and services. Viewers call in orders on a toll-free number and receive delivery within 48 hours. Millions of adults watch home shopping programs, and close to half of them buy merchandise.
- Videotext and interactive TV – The consumer's TV set is linked with a seller's catalogue by cable or telephone lines. Consumers can place orders via a special keyboard device connected to the system. Much research is now going on to combine TV, telephones, and computers into interactive TV

2.5. Direct Marketing Today and Tomorrow

2.5.1. Consumers Perspective

Most mass marketing attempts have become adversarial; intrusive; threatening, and, even hostile. Consequently, in many ways, mass marketing is not evolving; it is devolving. Consider this: once, markets were places where producers and customers met face-to-face and engaged in conversations based on shared interests. Now more and more businesses are engaged in a grinding war of attrition with its markets. No wonder most mass marketing attempts fail (Thomas, 2007, p. 7). In fact, during an average day, a typical American is subjected to over 3,000 marketing messages. If we assume eight hours for sleep and personal maintenance, that leaves 16 hours to be inundated with pitches, sales, discounts, solicitations, and offers. This translates to over 180 per hour or more than three per minute. The bad side is also that almost everything that is being advertised is not even relevant to the lives of the

people who are being reached. In a recent Yankelovich Partners study, nearly 80 percent of Americans felt “constantly bombarded” by radio and TV advertisements, billboards, pop-up ads, telemarketing calls, junk mail, spam, et al. Equally disheartening, more than two-thirds say all of this has little or nothing in common with them (Freedman, 2005, p. 76).

2.5.2. Marketers Perspective

In the past, many people were content to buy new, untried products and services, based only on the advice of a salesperson. Knowledgeable buyers were few and far between. Today’s buyers are much better informed and much more selective. There are number of reasons for this (Thomas and Housden, 2002, p. 7):

- Choice – In almost every field, there are more options available and more competitive prices offered to customers.
- More information available – This started with “Which?” magazine but now there are many magazines in both consumer and business markets, carrying articles and features comparing the strengths and weaknesses of products available. Few people today would choose a new PC without first buying several magazines that carry product test reports and offer skilled advice.
- Greater pressure on consumer budgets – Although most households tend to have more disposable income than they did 20 years ago, there is a greater range of goods that are now considered “essentials” – few people would consider a television set and video recorder a luxury today. Business-to-business marketers discovered also that their customers experience greater pressure on costs than ever before, causing buyers of all types to be more selective.

The extraordinary growth of direct marketing is the result of many factors. Market demassification has resulted in an ever-increasing number of market niches. Higher costs of driving, traffic congestion, parking headaches, lack of time, shortage of retail sales help, and lines at checkout counters all encourage at-home shopping. Consumers appreciate toll-free phone numbers and Web sites available 24 hours a day, 7 days a week, and direct marketers’ commitment to customer service. The growth of the next-day delivery via FedEx, UPS and Airborne has made ordering fast and easy. In addition, many chain stores have dropped slower-moving specialty items, creating an opportunity for direct marketers to promote these items to interested buyers. The growth of the Internet, e-mail, mobile phones, and fax machines has made product selection and ordering much simpler. A phenomenal growth in number and type of databases and lists being supplied has occurred as well. One estimate suggests (Tonks, 1990, p. 5) that there are in excess of 3,600 customer lists available on the market. Competition among the providers of such information has also increased to such an extent that more aggressive marketing is being used to attract user companies.

Today, marketing communications are increasingly regarded as an interactive dialogue between the company and its customers. To make the sale to customers, marketers must work

hard and smart. Companies must ask not only “How can we reach our customers?” but also, “How can our customers reach us?” Thanks to technological breakthroughs, people can now communicate through traditional media (newspapers, magazines, radio, telephone, television, billboards), as well as through computers, fax machines, cellular phones, pagers, and wireless appliances. By decreasing communications costs, new technologies have encouraged more companies to move from mass communication to more targeted communications and one-to-one dialogue. But companies use their sales force also to provide a human touch to their marketing (Kotler and Keller, 2006, p. 603). The Direct Marketing Association (DMA) released a study indicating a significant growth and efficacy in the direct marketing industry through 2012. In 2012, the return on marketing investment is expected to be over €10 for every € spent (Comer, 2008, p. 26).

2.5.3. European Legislation

Laws and self-regulation differ in Europe differ from country to country. Particularly sales promotion laws are extremely complex and evolve further. At this point, there is a lack of uniformity and thus direct marketers that wish to target an international audience must be aware of different rules that are specific to each country. Tapp (2005, p. 43) sees the most important legal constraints for direct marketers in the areas of data usage, sales promotions, and customer communications. The Data Protection Act guides the use of data through its eight principles. For international direct marketers, there are extremely complex diverse laws governing the use of sales promotions in each country.

This is an area where there is still much misunderstanding even among practitioners and those who seek to control direct marketing activities. The fact is that no sensible marketer would wish to alienate customers and prospects by abusing their trust. Nor would they want to waste money by writing to those who are not interested in a product or proposition. The main concerns arise over the use of “opt-out” or “opt-in” statements on enquiry forms. Some supporters of the high level of data protection would like all advertisers to use the “opt-in” option at all times. In this instance, the advertiser can only use the customer’s name, address and other data when the customer positively opts in. To opt in, a customer must tick a box agreeing that he or she would like to receive information about other products and services (Thomas and Housden, 2002, p. 22).

3. Quality Management

3.1. What is Quality Management?

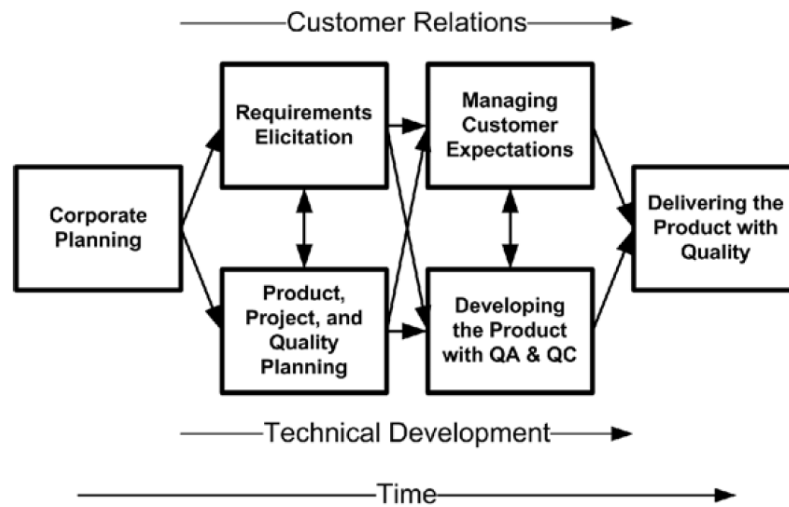
“Quality keeps customers by giving them the value they want; quality makes businesses succeed by delivering value; quality increases job satisfaction through our sense of accomplishment, of professionalism, and of service. The opposite of quality is error, and quality management is the effort to bring error under control and reduce error to acceptable levels” (Kemp, 2006, pp. XIII-XIV). Many studies across all industries have demonstrated that there is a cost and time ratio for planning:development:delivery of 1:10:100. This is called the 1:10:100 rule, and it states that each error will cost ten times more to fix in development than it would cost to fix in planning, and 100 times more if the error actually reaches the customer. In order to cope with this fact, quality management has much to offer.

Easton and Jarrell (1998), Hendricks and Singhal (1997) and Westlund (2001) claim, that quality management has become a ubiquitous practice in modern industry. In addition, it is becoming increasingly common in both the public and private service sector and its value for companies is escalating rapidly. Nevertheless, Bergqvist and Ramsing (1999) are pointing out that many initiatives to implement it fail. Often, quality management is merely seen as a number of techniques or methods. However, there are more profound aspects that need to be taken into account if quality management is to be employed successfully. Park Dahlgaard (1998, p. 47) argues that the fundamentals of quality management are based both on western management thought and on ancient eastern philosophies.

According to Juran (1989), the activities in companies that assure quality can be grouped in three processes: quality planning, quality control and quality improvement. These processes are all incorporated into various quality management methods that will be discussed in more detail in following chapters. If I start by naming few of the most common ones, it can be seen, that there are numerous methods from which company has to choose, going from standards like ISO, Quality Function Deployment, Kaizen, Zero Defect Program, Six Sigma, Quality Circle, Taguchi methods, Toyota Production System, Kansei Engineering, Total Quality Management, TRIZ, Business Process Reengineering, Shainin System and many others. However, the choice becomes much narrower if we consider the fact that either some are not suitable for the type of the organization, culture (many methods only correspond to operating in Far East environments) we are operating in, industry, as well as the specific nature of problems we are assessing. Not to mention the fact that the majority of methods are simply the continuation or evolution of the previous ones, with some additions and minor changes.

Chart 2 shows a comprehensive scheme of how quality management can be implemented through customer relations and technical development as a baseline related to time. It also shows all important phases and how these phases are linked to each other.

Chart 2: A high level view of the end-to-end process of quality management



Source: Kemp, 2006, p. 46

It has to be clear that generalization should be avoided, since each method has its own approach and tools, which are used to achieve quality. Exact processes and connections between them for the chosen method will be presented in the designated chapter.

Nowadays, more and more attention is paid to statistically supported methods, from which the following three are most frequently assessed through the literature that covers quality management. Firstly, Shainin System is mainly a problem solving methodology. Its applicability is limited to projects that seek to identify the (one or very few) root causes of a problem. It is not suitable for studying a more complex system of influence factors and modelling their effects onto the critical-to-quality (CTQ). The improvements have the form of corrective action against disturbances or adjustment of tolerances, whereas improvement patterns as robust design and adjustment of the mean are underemphasised. Secondly, Taguchi's off-line quality control method that includes the strategy for quality engineering in three stages (system design, parameter design and tolerance design) exploits powerful improvement patterns. The methodology falls short in the exploration phase, for which it provides only limited guidance, and also in the focus on picking optimal settings (as opposed to gaining insight in the system) is debatable. Thirdly, Six Sigma's breakthrough cookbook is the most complete statistical improvement strategy. It could be improved by systematising the guidance provided for the exploration phase. Moreover, it should incorporate more adventurous and fallibilistic attitude that fits experimenters (de Mast, 2004, pp. 211-212). Six Sigma incorporates large amount of other methods, since it is based entirely on TQM, with statistic support and useful techniques of other methods added. Another fact that speaks in favour of Six Sigma is that it is extremely appropriate for service and business-to-business environments. The benefits from the possibility of applying this method in such environment will be shown in the following chapters.

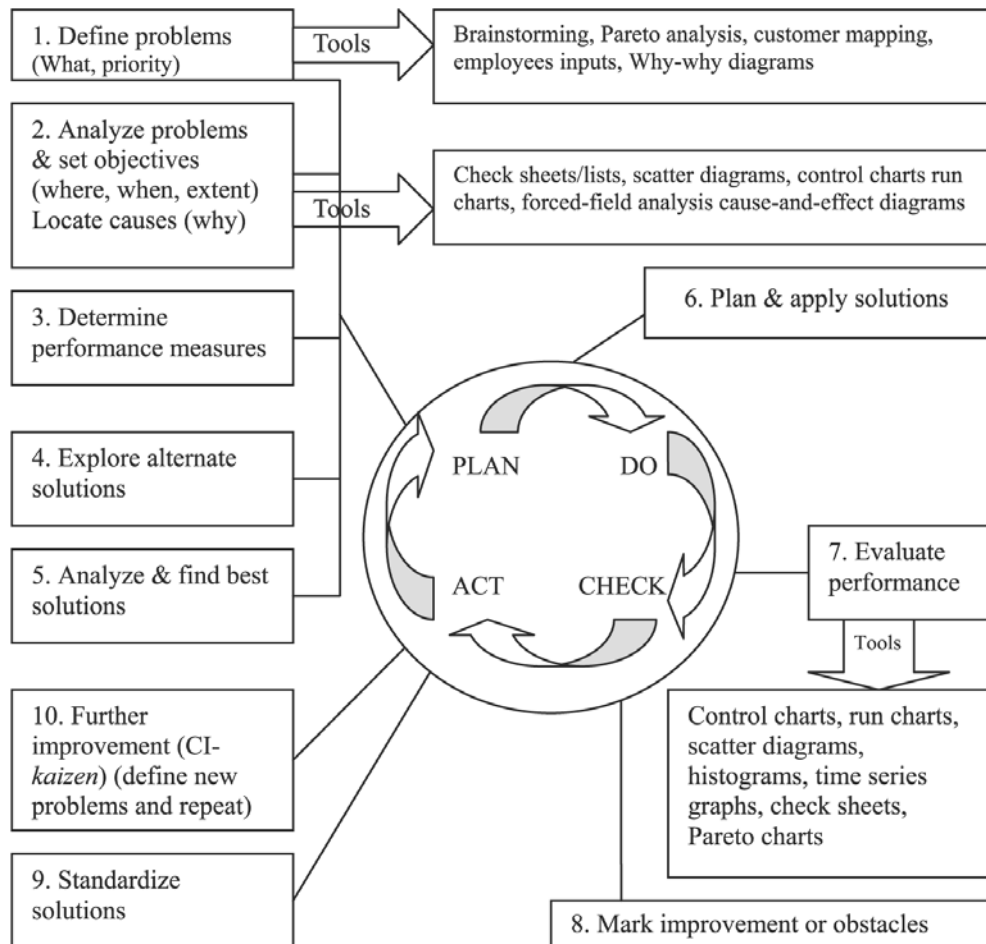
3.2. Development of Quality Management

After the review of available literature, the development of quality management as we know it today can be observed through three breaking points or major contributions of the three authors. As already mentioned, for the most part, modern quality management methods are not entirely different ways of working, but they are evolutions of original theories, which started in 1911, when Frederick Winslow Taylor's "Principles of Scientific Management" were first published. Even the ideas of most modern methods as Six Sigma can be simply traced to their origins to almost 100-year-old principles of Taylor. Kemp suggests (2006, pp. 28-29) that scientific management is the direct predecessor of all quality management and further explains that Taylor's key ideas can be summarized in two points:

- The scientific method can be used to define, and then to continuously improve the best tools and methods for doing any job.
- Changing an organization's way of working requires principled management that makes the situation better for both management and workers. A slow, careful method must be followed so that management and workers work together towards common goals, and conflict is eliminated, rather than triggered, by the change in work process.

The second breaking point is the work of Walter Shewart and the start of statistical quality control, which is present in almost all of the modern methods of quality management. Shewart was an engineer working at the Western Electric from 1918. In 1924, he joined Bell Labs, where he introduced statistical quality control. Shewart also developed PDCA (Kemp, 2006), a simple application of a scientific method that anyone can apply. In general, we can plan work that solves a problem, do that work, check to see if we got the results we wanted, and then use what we learned. This can apply to trying to meet customer specifications and also to solving any other type of quality, effectiveness, or efficiency problem. While PDCA can apply to both general efforts to improve quality and more technical engineering improvements, statistical quality control is the core of the more advanced engineering side of quality management (p. 32). As seen from Chart 3, Shamsuddin and Hassan (2003, p. 798) also propose an innovative scheme for application of Shewart's PDCA technique.

Chart 3: Application of PDCA technique



Source: Shamsuddin and Hassan, 2003, p.798

The third breaking point is the work of William Edwards Deming (further developed by Joseph Moses Juran and Philip Bayard Crosby). He popularized and advanced Shewhart's work, and contributed significantly to it. In cooperation with Japanese scientists, engineers, and industrial leaders, he pioneered the development of Total Quality Management (TQM) as we know it today. TQM is discussed further in following writing, since it has a completely separate chapter within this thesis owing to its importance.

Given the popularity of quality programmes in organizations today, one would anticipate that a research on quality would be quite prolific. However, for a variety of reasons, this is not the case. One important reason is the origin of the quality construct. The study in the area of quality management has taken a very convoluted path, when observed from the research perspective. The foundations of quality management were laid by Deming (1986), Juran (1988), Crosby (1984) and others, who advocated the use of statistics to control variation in the manufacturing process. This approach was expanded to address improvement issues in other areas of the organization. These quality "gurus" have been prolific in writing how-to

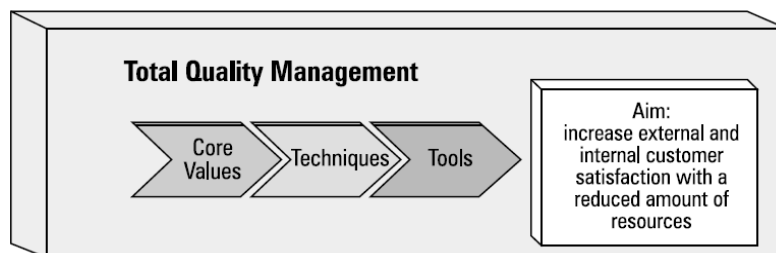
books in improving quality. Consulting groups have sprung up nationwide to facilitate the implementation of quality programmes. The Malcolm Baldrige National Quality Award with its specific criteria for evaluating organizational quality has been used as a guideline for many organizations. This evolution is not typical of traditional organizational research issue. As a result, many organizational researchers have ignored the behavioural side of quality phenomenon. Since quality was first studied via statistical control of the manufacturing process, its study was relegated primarily to those in operations research. Operation researchers have provided some valuable insights into the degree of the implementation of quality programmes (Ebrahimpour, 1988; Modarress and Ansari, 1989; Ross and Georgoff, 1991), as well as instrument and theory development. However, the issues of organizational behaviour (for example, top management commitment and the impact of organizational change) receive only cursory attention in this research.

3.3. Most Important Contributions to Quality Management

3.3.1. Total Quality Management

Total Quality Management (TQM) was the first method to successfully implement the ideas of Taylor and Shewhart in more than one company at a time. It is the most central defining method in quality management. TQM is the father of all the following quality management methods and standards, including Six Sigma and ISO 9000 (Kemp, 2006, p. 177). One of the most striking features of TQM literature is the absence of any uniform definition of Total Quality Management. Lawler (1994) observed that “there is no single theoretical formulation of the Total Quality Management approach nor any definitive short list of practices that are associated with it” (p. 68). Harai (1993) believed this uncertainty of the nomenclature of TQM is a problem in and of itself; “given the fact that there is a multitude of definitions, theories and programs in the public domain, it is difficult to specify exactly what TQM is” (p. 31). Chart 4, however, gives a clear presentation what all the TQM incorporates and how broad it is, which is one of the reasons for the lack of uniformity.

Chart 4: Role of core values, techniques and tools

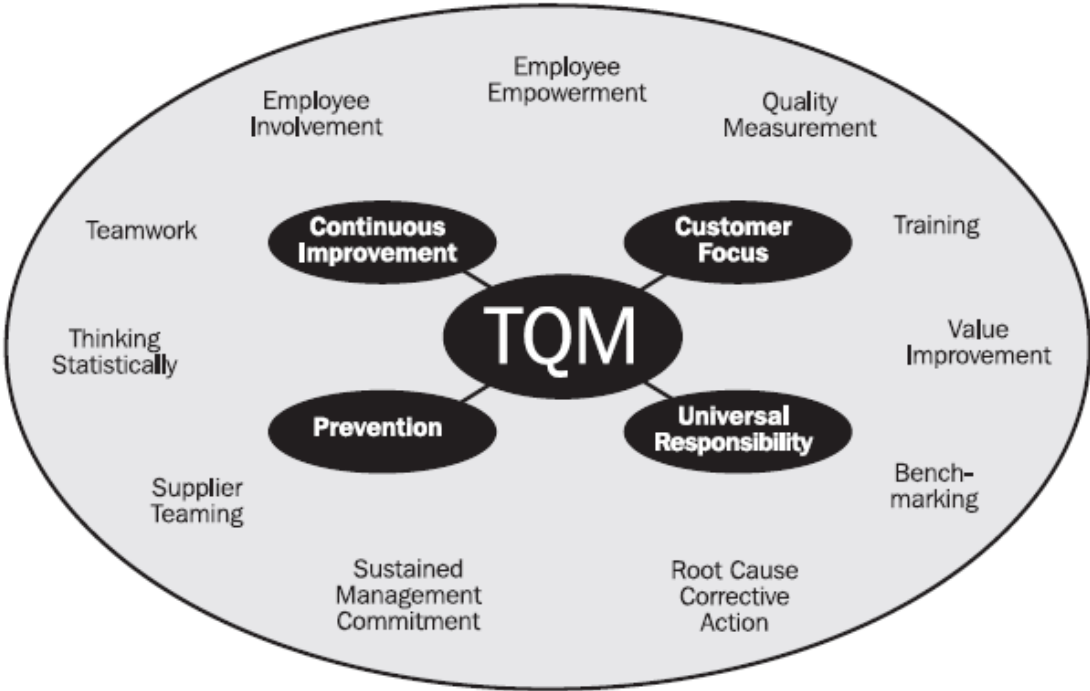


Source: Hellsten and Klefsjö, 2000, p. 242

The TQM should be viewed as a management system consisting of three interdependent components: values, techniques and tools. Techniques and tools support the values and together they form a whole (Hellsten and Klefsjö, 2000, p. 243).

Furthermore, in a narrower sense, the TQM may be defined as “a continuous quest for excellence by creating the right skills and attitudes in people to make prevention of defects possible and satisfy customers/users totally at all times”. The TQM is an organization-wide activity that has to reach every individual within an organization. The TQM is regarded as an integration of various processes characterizing the behavioural dynamics of an organization. For this reason, an organization is referred to as a total system (socio-technical), where all the activities carried out are geared towards meeting the requirements of customers with efficiency and effectiveness. The TQM has been based on the quest for progress and continual improvement in the areas of cost, reliability, quality, innovative efficiency and business effectiveness (Lakhe and Mohanty, 1994, pp. 9-10). Chart 5 gives an overview of the key elements of the TQM philosophy and all the supporting elements that have to be present in order to achieve efficient implementation.

Chart 5: Key elements of the TQM philosophy



Source: Berk and Berk, 1993, p. 8

The TQM philosophy offers many benefits to organisations that adopt it. The chief benefits of attributable to the TQM include (Walsh et al., 2002, p. 301) the elimination of defects, reduced scrap and rework, reduced level of cost, increased levels of efficiency and productivity and increase in employee morale and motivation.

The whole concept of the TQM is based on and guided by Deming's 14 points for management (Deming, 1986, pp. 23-24):

1. Create constancy of purpose toward improvement of product and service, with the aim to become competitive and to stay in business, and to provide jobs.
2. Adopt the new philosophy. We are in a new economic age. Western management must awaken to the challenge, must learn their responsibilities, and take on leadership for change.
3. Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place.
4. End the practice of awarding business on the basis of price tag. Instead, minimize total cost. Move toward a single supplier for any one item, on a long-term relationship of loyalty and trust.
5. Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.
6. Institute training on the job.
7. Institute leadership. The aim of supervision should be to help people and machines and gadgets to do a better job. Supervision of management is in need of overhaul, as well as supervision of production workers.
8. Drive out fear, so that everyone may work effectively for the company.
9. Break down barriers between departments. People in research, design, sales, and production must work as a team, to foresee problems of production and in use that may be encountered with the product or service.
10. Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity. Such exhortations only create adversarial relationships, as the bulk of the causes of low quality and low productivity belong to the system and thus lie beyond the power of the work force.
11. Eliminate work standards (quotas) on the factory floor. Substitute leadership. Eliminate management by objective. Eliminate management by numbers, numerical goals. Substitute leadership.
12. Remove barriers that rob the hourly worker of his right to pride of workmanship. The responsibility of supervisors must be changed from sheer numbers to quality. Remove barriers that rob people in management and in engineering of their right to pride of workmanship. This means, inter alia, abolishment of the annual or merit rating and of management by objective.
13. Institute a vigorous program of education and self-improvement.
14. Put everybody in the company to work to accomplish the transformation. The transformation is everybody's job.

An effective TQM programme stems from an important and logical progression of thoughts and actions. One must first ensure a clear understanding of the organization's vision and attendant goals. Next, one must clarify a philosophy of the TQM that is consistent with and supportive of the pursuit of the organization's goals. The philosophy and subsequent plan of

action for the TQM must clearly delineate priorities and responsibilities. Priorities must be succinct and clear to the extent they compel the desired allocation of resources by those working to attain the organization's vision. To assure the TQM in the steps towards and attainment of the organization's vision, it is essential that one cast the TQM philosophy, goals, and actions in terms of attaining the desired vision for an organization (Groth, 1995, p. 58)

Understanding processes so that they can be improved by means of systematic approach requires knowledge of seven basic quality control tools, which are used in problem identification. These tools are largely quantitative and help answer the questions associated with them (Karuppusami and Gandhinathan, 2006, p. 372):

- Process flowcharting – What is done?
- Pareto analysis – Which are the big problems?
- Cause and effect analysis – What causes the problem?
- Histograms – What does the variation look like?
- Check sheets/tally sheets – How often does it occur?
- Scatter diagrams – What are the relationships between factors?
- Control charts – Which variations are to be controlled and how?

Comparative techniques such as benchmarking can help identify the relative success of the TQM activities. The measurement of techniques may help to highlight root causes of poor performance in organisations and can suggest solutions which can eliminate these root causes (Walsh et al., 2002, p. 300)

3.3.2. Quality Standards and Awards

International Organization for Standardization introduced the ISO 9000 series of quality management and quality assurance standards in 1987 (ISO 9000:1987). The series, which is currently called ISO 9001:2000, includes three models for quality assurance (ISO 9001, ISO 9002 and ISO 9003) combined together, guidelines for quality management (ISO 9004), and two supporting documents: ISO 9000 Guidelines for Model's Selection and Use and ISO 8402 Quality Vocabulary (Karapetrovic, 1999, p. 81). A technical committee has started its review on the next version, which is expected to be entitled ISO 9001:2008, assuming its planned release date is set. To comply with the ISO 9000 standard, a company must set up its own internal Quality System that basically ensures three things (Kemp, 2006, p. 193):

- A focus on quality defined as customer satisfaction and meeting customer requirements.
- That company does what it says and says what it does, and is able to prove it.
- That company uses PDCA for correction of problems.

Meeting ISO 9000 requirements is like doing the first year of Deming's five-year approach to transformation through TQM. Key elements are top-down commitment, company-wide training, and employment of PDCA first to bring production under control of inspection or statistical analysis, and then to improve any and all parts of our organization (Kemp, 2006, p. 196). ISO 9000, an international standard for quality systems, has gained worldwide acceptance since its introduction. The standard requires a company seeking ISO certification to pass a stringent, independent, third party audit. Although the certification process is lengthy and the documentation extensive, ISO 9000 provides substantial benefits in terms of, for example, higher customer satisfaction, smoother operations and lower costs, higher quality and productivity (Motwani et al., 1996, p. 83). There are also numerous industry specific standards available, out of which the ones for automotive industry are very well spread.

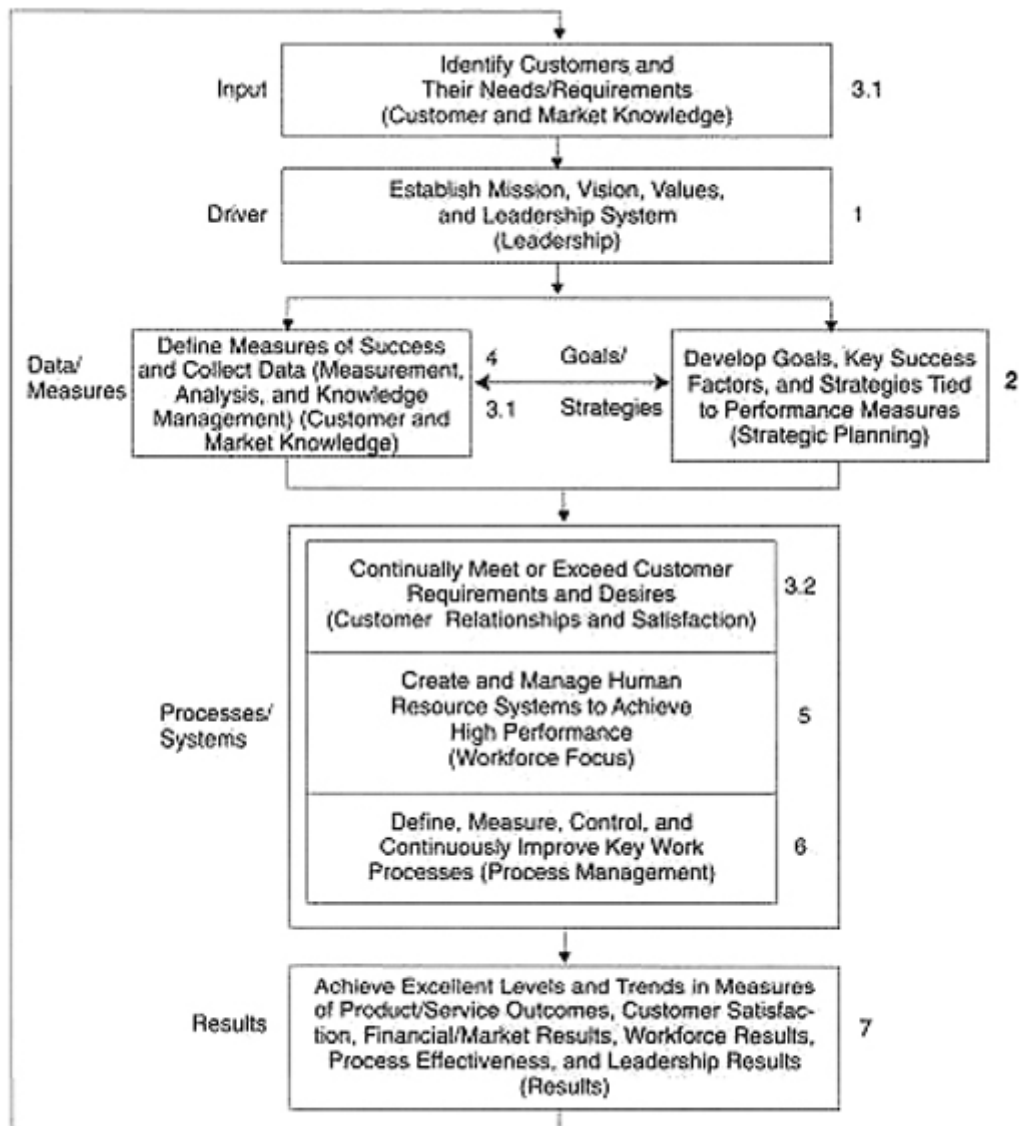
National quality awards (NQAs) are means by which countries promote quality awareness at the national level. In the short history of the development of the NQAs, three awards have played a key role in the quality revolution in Japan, Western Europe and the USA. They are the Deming Prize, the European Quality Award, and the Malcolm Baldrige National Quality Award (Tan, 2002, p. 165). The design of the NQAs is to promote quality awareness, understand the requirements for quality excellence, and share information on successful strategies and their benefits. The NQAs typically contain from seven to ten examination criteria and further 20 to 30 sub-criteria. The awards are made yearly for only the best-run organizations. They are a nation's highest accolade for achievements in the best quality management practices (Tan, 2002, p. 166).

The Deming Prize is given to companies that have achieved distinctive performance through the application of the CWQC (Company Wide Quality Control based on statistical quality control techniques). The company's performance on the application of the CWQC is evaluated through two examinations, the document examination and the on-site examination. Examination results are scored. Each of the ten examination items carries ten points (Bohoris, 1995, pp. 32-33). Unlike the European Quality Award and the Baldrige Award, the Deming Prize is not competitive. Any number of companies meeting the criteria of achieved number of certain points may be awarded the prize in any one year (Ghobadian and Woo, 1996, p. 17).

According to the Baldrige criteria, the award promotes: awareness of quality as an increasingly important element in productivity and competitiveness, understanding of the requirements for quality excellence, and sharing of information on successful quality strategies and the benefits derived from implementing these strategies. The Baldrige Award annually recognizes up to six companies in each of three different categories (manufacturing, small business and services). To enter the Baldrige competition, a firm must conduct an internal assessment and submit a report describing their quality management systems (Loomba and Johansen, 1997, p. 63). Applicants are evaluated in the following areas (Kemp, 2006, p. 201): leadership, strategic planning, customer and market focus, measurement,

analysis, knowledge management, human resource management, process management and business results.

Chart 6: Baldrige Award framework

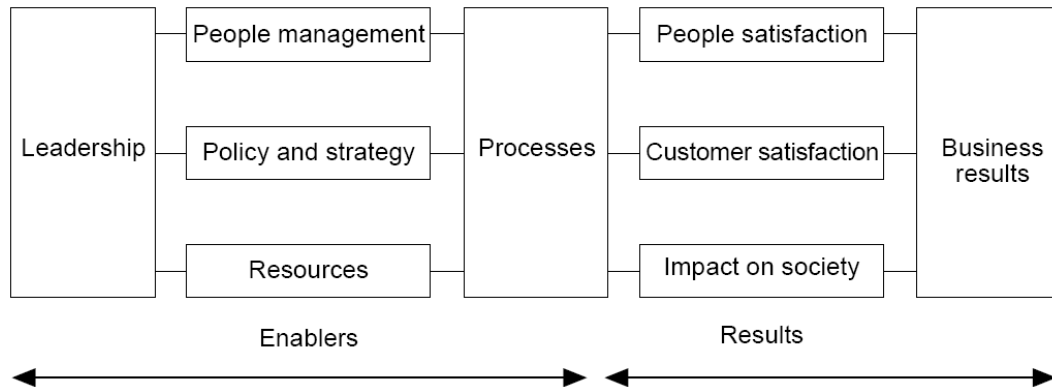


Source: Brown, 2008, p. 49

The examination process of European Quality Award (EQA) consists of three main sections namely initial assessment, site visits, and final review and decision. The award assessment criteria have nine categories, which are divided into two groups: results and enablers. In other words, the award assesses how the customer and people satisfaction impact on society. Business results are achieved through leadership, people management, policy and strategy, resources and processes. Business results, including the company's achievement in its

financial and non-financial objectives, are vital to the company's success so it is the next most highly scored criterion (Bohoris, 1995, pp. 32-33).

Chart 7: EQA framework



Source: Ghobadian and Woo, 1996, p. 19

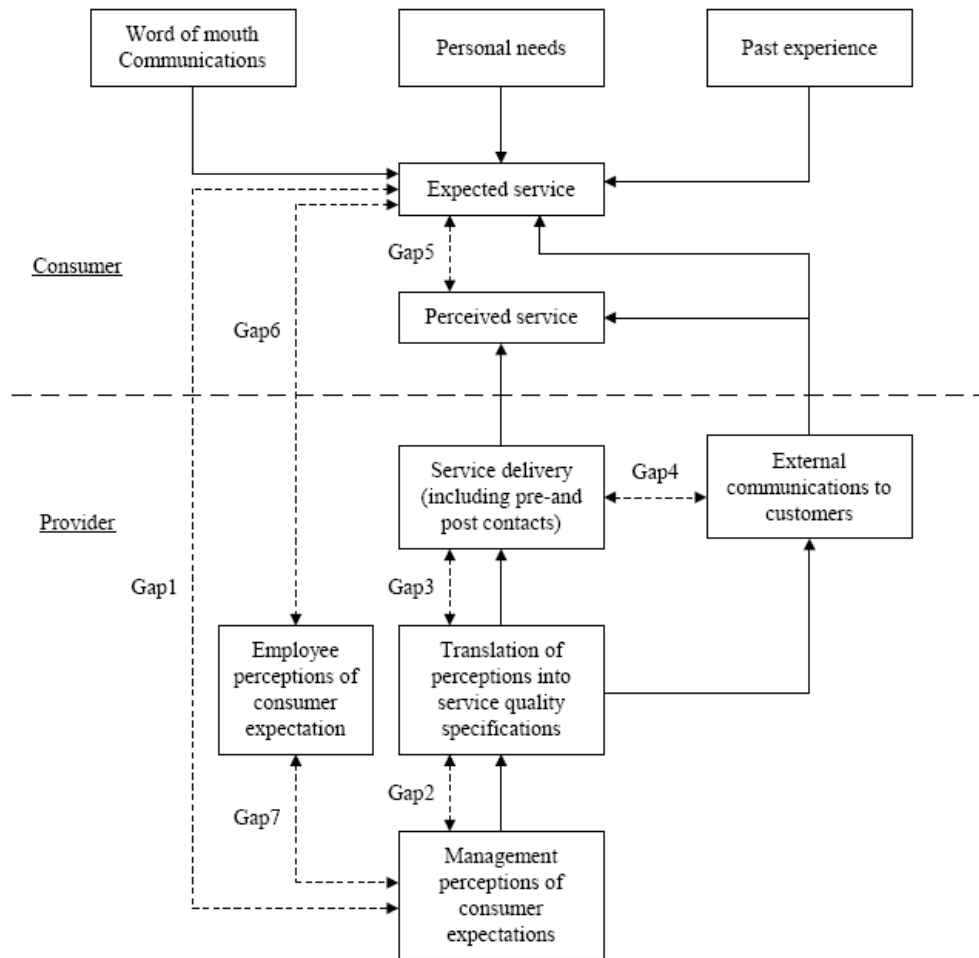
3.4. Quality in Services

The term “quality” means a different thing to different people. Defining quality is therefore often the first step when assessing improvements. To begin with, it is hard to establish a common understanding of quality especially in services. There are numerous definitions available that try to define quality from completely different perspectives going from psychology to economics. However, the majority of definitions of quality from service perspective fall in the category of customer driven factors. The summary of more than twenty available definitions of different authors can be described as: “consistently meeting or exceeding customer’s expectations” (Ghobadian et al., 1994, p. 50).

A service is intangible. Thus, purchaser cannot judge its quality or value prior to purchase and consumption. It is evident throughout the quality literature that the employee’s role is significant in the quality of manufactured products but in services, the employee’s role and behaviour take on even greater importance (Dotchin and Oakland, 1994, p.28). Many authors argue that in a service setting, customers judge quality by comparing their perceptions of what they receive with their expectations of what they should receive. Both expectations and perceptions are experiential sensations rather than necessarily being real.

Even though there have been efforts to study service quality, there has been no general agreement on the measurement of concept. The majority of the work to date has attempted to use the SERVQUAL or gaps model (Parasuraman et al., 1985) methodology in effort to measure service quality.

Chart 8: Model of service quality gaps



Source: Shahin, 2004, p. 3

Chart 8 shows Shahin’s interpretation of Parasurman’s SERVQUAL or gap model that presents 7 major gaps between customer’s expectations and management perception (Gap 1), management perception and service specifications (Gap 2), service specifications and service delivery (Gap 3), service delivery and external communication (Gap 4), discrepancy between customer expectations and their perception of service delivered (Gap 5), discrepancy between customer expectations and employee’s perceptions (Gap 6) and discrepancy between employee’s perceptions and management perceptions (Gap 7). Model measures the gaps by using SERVQUAL questionnaires which are further explained in the case study and available in Appendix 1.

Furthermore, customers and service quality can be managed and assessed efficiently. This process proves to be difficult, but it can help greatly in order to build a better competitive position in the direct marketing industry and improve the performance of the whole organization (Lewis and Booms, 1983, p. 100). Grönroos (1984), Parasuraman et al. (1988) and Teas (1993) provide extensive literature on this topic as well. Their work deals with this

subject to such an extent, that it offers certain correlation coefficients for other related factors. It has also been discovered that there are certain linkages between service quality and performance of the organization, however, this fact has not been investigated to the final extent (Thorpe, 1994, p. 160). PIMS database further indicates that service with higher quality results in improvements of market share (Buzzell and Gale, 1987). It can be applied the same for linkages between customer retention and market share (Rust and Zahorik, 1993, p. 197). To sum up, managerial perspective suggests that investment in service quality and building and maintenance of customer relationships can only be justified if they result in improved profitability (Rust and Zahorik, 1993, p. 214).

3.4.1. Quality Management in Services

The key role of services in the developed economies of the world is well recognized. The importance of quality to the competitiveness and effectiveness of these services is also broadly accepted. Quality management initiatives in service companies have been an ongoing effort. These initiatives have met with considerable success in some companies, and have been less successful in others. Theories, concepts and frameworks adopted by service firms have typically been those advocated by Deming, Juran and other quality experts, as well as the practical frameworks of quality awards such as the Malcolm Baldrige National Quality Award, the Deming Prize and the European Quality Award (Behara and Gundersen, 2001, p. 584). Companies fail to provide any industry-specific explanations of the state of their TQM implementation due to the fact that TQM is truly generic. Under varied environmental conditions, the TQM tools and procedures may vary, but the underlying concepts apply equally to both manufacturing and service companies. Despite the dissimilar nature of manufacturing and service industries, they face similar problems in realizing the full benefits of TQM. Therefore, solutions to these problems will also be similar (Huq and Stolen, 1998, pp. 159-160).

3.4.2. Business-to-business Specific Environment

Quality for the company refers to the benefits which contribute to the customer company's organizational goals and well-being in a holistic sense. Organizational goals are typically rational, and the wellbeing generated by quality for the company typically goes beyond one individual in the organization, in other words it has a more holistic nature. Quality for the company typically refers to benefits which contribute to the customer company's business and course of action, and to several individuals' well-being in the organization (Ojasalo, 2004, p. 170). When the buyer is a company, an organization, the major problem is to identify the individual or individuals, inside or outside the customer company, whose opinion or judgment can be called "quality for the company" (Ojasalo, 2004, p. 172). Defining the needs of business customers and selling to them is slightly more straightforward than when selling to consumers. The value to a business is the one that improves the bottom line. First goal is to answer these questions (Kemp, 2006, p.61):

- How does our product or service improve the customer's bottom line?
- What roles or job titles define the decision makers in the selection of this product or service?
- What are the key factors in the decision? If there were direct competition, what would make us better? If there is not, how can we demonstrate to our customers the value of what we do?

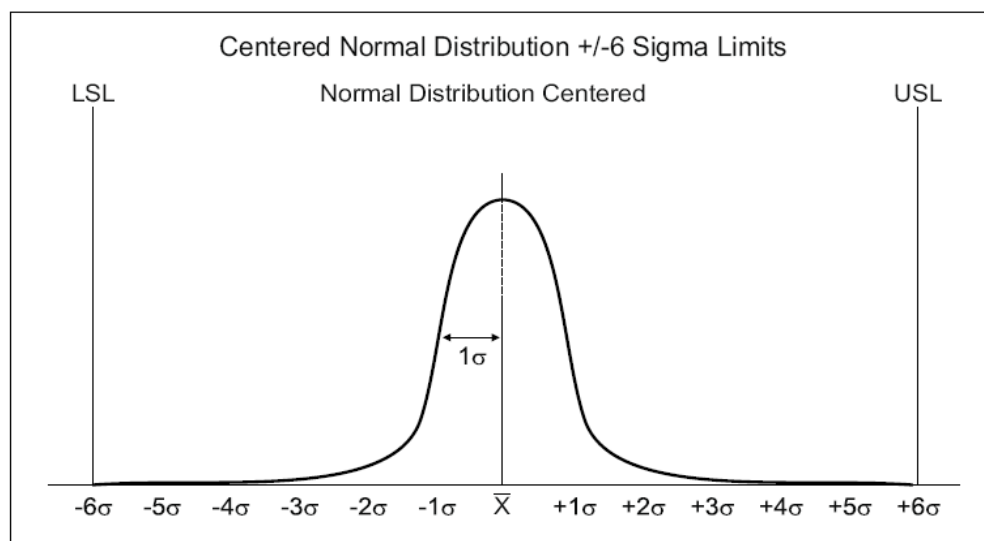
4. Six Sigma

4.1. What is Six Sigma?

In 1986, the concept of Six Sigma was introduced by Bill Smith, a senior engineer and scientist within Motorola's communication named Division in response to problems associated with high warranty claims. Today, Six Sigma has evolved from a mere measurement of quality to an overall business improvement strategy for a large number of companies around the world (Antony, 2006, p. 234).

The Six Sigma terminology arises from the relationship between the variation in a process or operation and the customer requirements associated with that process. In normal distribution the largest concentration of values is around the mean (average), and tails off symmetrically. In Chart 9, the distance between the centre line and the inflection point (where the curve starts to flatten out) is known as sigma (σ), the standard deviation. Sixty-eight percent of data falls within one standard deviation above or below the mean, 95% within 2 σ , and 99% within 3 σ . So the range from -3 σ to +3 σ represents 99% of the data (George, 2003, 25).

Chart 9: Normal distribution and sigma



Source: George, 2003, p. 25

The Six Sigma performance is less than 3.4 defective parts for every 1.0 million parts produced. It could also mean only one defect for every 250,000 systems transactions or only one human error or mistake out of every 250,000 decisions made (Elliot, 2004, p. 201). The further explanation of all 6 sigma stages and defects per units of measure is shown in Table 1.

Table 1: Sigma values and percentages of the sample

Sigma value	Range (in sigma)	Unit of measure	Part under the curve and between the lines	Part outside the range (both sides)
In quality management			Defect-free per unit of measure	Defects per unit of measure
1	-1 to +1	Percent	68.27%	31.73%
2	-2 to +2	Percent	95.45%	4.55%
3	-3 to +3	Percent	99.75%	0.25%
4	-4 to +4	Per million	999.936.66	63.34%
4.5	-4.5 to +4.5	Per million	999.993.20	6.80
5	-5 to +5	Per million	999.999.43	0.57
6	-6 to +6	Per million	999.999.998.03	1.97

Source: Kemp, 2006, p. 148

Like the TQM, Six Sigma is formed on certain principles that are the basis and guidelines in order to achieve successful implementation of the method (Kemp, 2006, pp. 209-210):

- Senior executive support.
- Top-down training – As in any quality management improvement effort, the need for training must be evaluated, and enough resources provided.
- Include the voice of the customer – This is a reminder to make sure that improvements really benefit the customer so that we avoid meaningless change or change that goes in the wrong direction because it is based on what we think the customer wants.
- Create an infrastructure to support success – The organization will need a structure that integrates Six Sigma methods into processes and allows discoveries through the Six Sigma analysis to lead to process change.
- Develop short-term projects with specific goals – This is perhaps Six Sigma’s most significant innovation. While some TQM companies naturally discovered the value of setting goals and deadlines, the project-oriented approach became a specific component of Six Sigma. Projects can have both minimum goals and stretch targets that motivate the team to think outside the box.
- Focus on process improvement – Just because Six Sigma uses projects to achieve results, this does not mean that the end of the project is the end of improvement. Project definition is often based on the evaluation of the process identifying measurable elements that are critical to quality (CTQ). Project results are usually internal changes – process improvements that should be maintained by ongoing Six Sigma quality control.
- Clear and consistent methodology – Although there are many variations of Six Sigma, a very consistent approach must be developed by each business.

- Decisions based on fact and data – Six Sigma reasserts the importance of an empirical basis for decisions, just like every quality management movement since Taylor’s from 1911.
- Focus on people and processes – Six Sigma realizes that company’s team is a corporate asset and it needs to invest in and that team can only benefit the company if it can improve processes by defining CTQ elements that make changes to quality, time, or cost in business processes, products, services, and the bottom line.

Six Sigma is clearly about being the very best one can be. It is about developing an organization-wide passion to excel, built on foundation of profound knowledge. It is about a culture that can only be incubated in an atmosphere of full involvement, knowledge and trust. It can only grow to maturity in a cultural environment of data integrity, intellectual honesty, commitment to technical knowledge process discipline, and a deep and abiding faith in personal and professional value and capability of one’s colleagues (Elliot, 2004, p. 205). Six Sigma is a technique that shows how far away from the mean or average a process measurement deviates. Each time the deviation is minimized or eliminated, it is translated as “opportunity” and the reverse is known as a “defect”, referred to in many literatures as defects per million opportunities (DPMO) (Thevin, 2004, p. 196).

4.2. Six Sigma in Services

Although many big service-oriented companies have embraced them, the Six Sigma applications in the service sector are still limited (Antony, 2006, p. 234). Service-oriented companies adopting Six Sigma will have the following benefits (Antony, 2006, pp. 237-238):

- Effective management decisions owing to heavy reliance on data and facts instead of gut-feelings and hunches. Hence, costs associated with fire-fighting and misdirected problem solving efforts with no structured or disciplined methodology could be significantly reduced.
- Increased understanding of customer needs and expectations, especially the critical-to-quality service performance characteristics, which will have the greatest impact on customer satisfaction and loyalty.
- Efficient and reliable internal operations, leading to greater market share and satisfied shareholders.
- Improved knowledge across the organisation on various tools and techniques for problem solving, leading to greater job satisfaction for employees.
- Reduced number of non-value added operations through systematic elimination, leading to faster delivery of service.
- Reduced variability in service performance, leading to more predictable and consistent level of service.

- Transformation of organisational culture from reactive to proactive thinking or mindset.
- Improved cross-functional teamwork across the entire organisation.

4.3. Organizational Readiness for Six Sigma

Hensley and Kathryn (2005, p. 88) argue that because Six Sigma programs rely on measuring the process, the companies that already have such system in place are more fitting. Consideration of whether the company already has a quality program established or whether service processes are being measured, puts companies in one of the four quadrants.

Chart 10: Matrix for evaluation of Six Sigma readiness

Quality Programs	Established	III	IV
	Not Established	I	II
		Not Measured	Measured
		Service Processes	

Source: Hensley and Kathryn, 2005, p. 88

Organizations in quadrant I do not measure their processes nor have quality program established. Meanwhile, organizations in quadrant II are already measuring processes, but do not have established any quality improvement process. Organizations in quadrants III and IV have both successfully established quality improvement programs, however, those in quadrant IV have also developed measures of processes while those in quadrant III have not.

Organizations in quadrants I and II (without established quality programs) may have to expend the time and effort to develop quality improvement orientation within the company if it does not exist already. If attempts at quality improvement programs are made, then the organization must work to understand its history in regards to those attempts. Has the organization tried every new program that came along and failed at all of them? Has the company attempted to establish a program recently? How is it working? In short, the company must be willing to make an honest assessment of reasons explaining why they have had problems in establishing a quality improvement program (Hensley and Kathryn, 2005, p. 89).

4.4. Company Prerequisites

Six Sigma is the application of the scientific method to the design and operation of management systems and business processes that enable employees to deliver the greatest value to customers and owners. The scientific method works as follows (Pyzdek, 2003, p. 6):

1. Observe some important aspect of the marketplace or your business.
2. Develop a tentative explanation, or hypothesis, consistent with your observations.
3. Based on your hypothesis, make predictions.
4. Test your predictions by conducting experiments or making further careful observations. Record your observations. Modify your hypothesis based on the new facts. If variation exists, use statistical tools to help you separate signal from noise.
5. Repeat steps 3 and 4 until there are no discrepancies between the hypothesis and the results from experiments or observations.

The Six Sigma deployment is the actual creation of an organization that embodies the Six Sigma philosophy, an example of such deployment can be seen in Appendix 2. Crucial things that have to be assured within the company before implementing Six Sigma vary greatly through available literature, but can be roughly summed up in following four categories: management involvement, cultural change, infrastructure and training, and connection to business strategy. After the full implementation of the Six Sigma philosophy, the available literature also discusses that there should be a change in attitude towards suppliers and demanders, but this is a whole another topic.

4.4.1. Management Involvement

Any successful initiative like Six Sigma requires top management involvement and provision of appropriate resources and training. Senior managers in the organization must be taught the underlying principles of Six Sigma. Without continuous support and commitment from top management, the true importance of the initiative will be in doubt (Antony and Banuelas, 2002a, p. 21). Six Sigma involves changing major business value streams that cut across organizational barriers. It provides the means by which the organization's strategic goals are to be achieved. This effort cannot be lead by anyone other than the CEO, who is responsible for the performance of the organization as a whole. Six Sigma must be implemented from the top down. Six Sigma has a zero chance of success when implemented without leadership from the top because of the Six Sigma's focus on cross-functional, even enterprise-wide processes. Six Sigma is not about local improvements, which are only possible when top-level support is lacking (Pyzdek, 2003, p. 28)

4.4.2. Cultural Change

Six Sigma is considered to be a breakthrough management strategy, because it involves adjustments to the firm's values and culture for its introduction. It also involves substantial change in organization structure and infrastructure (Antony and Banuelas, 2002, p. 93). A successful introduction and implementation of Six Sigma requires adjustments to the culture of organization and change in attitudes of the employees. Employees have to be motivated and accept responsibility for the quality of their work (Antony and Banuelas, 2002a, p. 21). The blending of the Six Sigma concept into the organization's culture could result in unique acknowledgement of some of tangible factors that could give the organization competitive edge and superiority. It will also enable the organization to be cognizant of some of the intangible factors that are intrinsic, thus creating unique value to the organization that is irreplaceable by others (Thevni, 2004, p. 199). Two of the most common means of assessing organization culture is a focus group and a written questionnaire. Because of the sensitive nature of cultural assessment, anonymity is usually necessary. Pyzdek believes that it is necessary for each organization to develop its own set of questions. This involves selecting a small representative sample ($n \approx 20$) from the group you wish to survey and asking open ended questions, such as: "Which of our organization's beliefs, traditions and practices have a beneficial impact on quality?", "Which of our organization's beliefs, traditions and practices have a detrimental impact on quality?" (Pyzdek, 2003, p. 27).

4.4.3. Infrastructure and Training

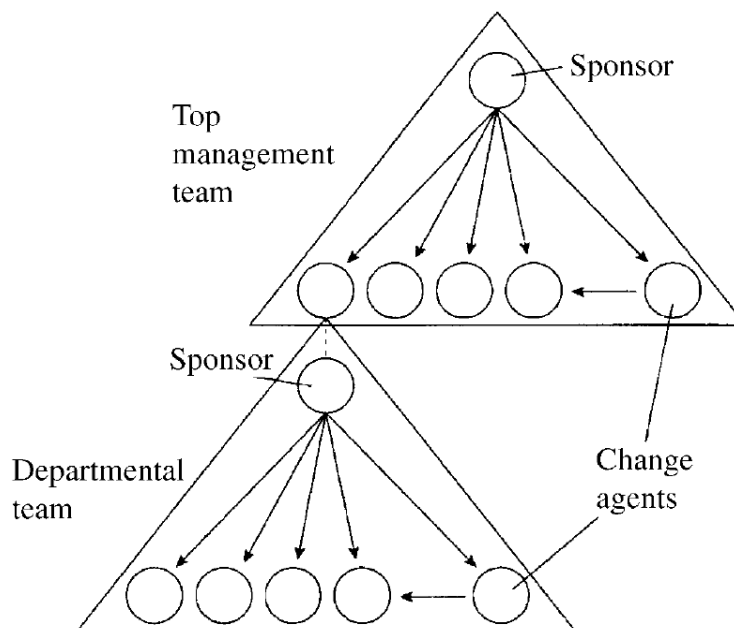
In addition to top management, there are also needs to have an effective organizational infrastructure in place to support the Six Sigma introduction and development program within the organisation. The Six Sigma initiatives are led by the CEO or vice-president, who is considered as a Six Sigma champion (Antony and Banuelas, 2002a, p. 22). Six Sigma makes improvement and change the full-time job of a small but critical percentage of the organization's personnel. These full-time change agents are the catalyst that institutionalizes change (Pyzdek, 2003, p. 26). The belt system must be applied throughout the company starting with top management and should be cascaded down through the organizational hierarchy (Antony and Banuelas, 2002, p. 95). More information about the complex belt system of responsibilities and roles is available in Appendix 3. The training required to implement Six Sigma involves everyone in the organization. The basic training lasts one day and covers process mapping, overview of designed experiments, hypothesis testing, metrics, and process modelling. Green belt training is more extensive and includes a week of statistical analysis, SPC, and measurement systems analysis. The black belt training requires about one month of training comprising ANOVA, game theory, and multivariate regression (Raisinghani, 2005, p. 493). Communication systems are among the first things that need to be changed so people know what to make of the new way of doing things (Pyzdek, 2003, p.12). The implementation of Six Sigma in any organization is at first disruptive because it requires not only the buy in of senior management, but also an active role of management in

project definition and resource allocation. It requires also an extensive training of some of the best people in the organization with the understanding that their role will be 100 per cent devoted to deployment of Six Sigma activities. The heart of these activities presents projects that have been defined as critical paths or breakthrough goals that affect the bottom line of an organization (Raisinghani, 2005, p. 493).

Changes require new behaviour from everyone involved. However, four specific roles commonly appear during the most successful change processes (Hutton, 1994, pp. 2-4):

- Official change agent – An officially designated person who has the primary responsibility for helping management plan and manage the change process (sometimes called champions).
- Sponsors – Sponsors are senior leaders with the formal authority to legitimize the change. The sponsor turns the change a goal for the organization and ensures that resources are assigned to accomplish it. No major change is possible without committed and suitably placed sponsors.
- Advocate – An advocate for change is someone who sees a need for change and sets out to initiate the process by convincing suitable sponsors. This is a selling role. Advocates often provide the sponsor with guidance and advice. Advocates may or may not hold powerful positions in the organization.
- Informal change agent – Persons other than the official change agent who voluntarily help plan and manage the change process. While the contribution of these people is extremely important, it is generally not sufficient to cause truly significant, organization-wide change.

Chart 11: position of roles within a typical organizational hierarchy

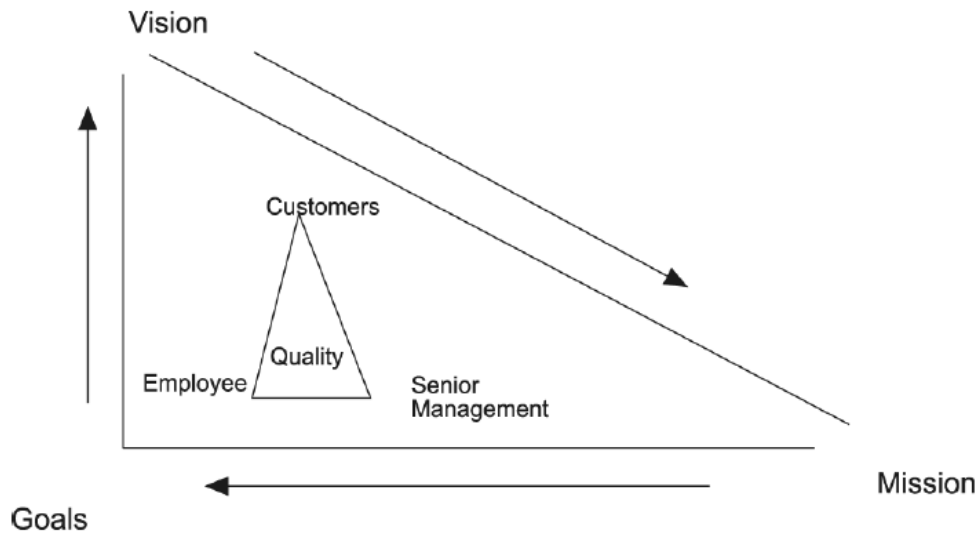


Source: Hutton, 1994, p. 4

4.4.4. Six Sigma, Business Strategy, Mission and Vision

The Six sigma projects must be targeted for process and product improvement that have a direct impact on both financial and operational goals. Even if the first efforts focus fairly on narrow problems, their impact on the whole business should be clear. Since the goal of every company is to make profits, it should be extended to other operations as well. In every single project, the link between the project and the business strategy should be identified. It should also demonstrate in money figures, in the benefit of the project in financial terms and in the way in which it will help business strategy (Antony and Banuelas, 2002, pp. 95-96). The Success of Six Sigma in an organization also depends on the management leadership style and how it is blended into the organization's management strategy (Thevnin, 2004, p. 199).

Chart 12: Suggested way of implementation of Six Sigma as a strategy



Source: Thevnin, 2004, p. 199

4.5. Six Sigma Project Selection

The essence of Six Sigma is to solve problems that impact business performance. Nevertheless, before a problem can be solved or performance improved, both the problem and the goal have to be defined correctly. In other words, the focus of the Six Sigma project has to be specified, which is a very important task, that is sometimes, if done correctly, already a half of work to be done in improvement process. In order to generate ideas for finding the problem, the company can start by examining one of the following external or internal sources as proposed by Pande et al. (2000, p. 141):

External sources:

- voice of the customer,
- voice of the market,
- comparison with competitors.

Internal sources:

- voice of the process,
- voice of the employee.

If information on savings and cost of each potential Six Sigma project is available, more advanced methods for project choice can be used as well. One of them is called Pareto Priority Index or PPI. Projects with highest PPI are the best choice and should be company's priority when choosing Six Sigma projects.

$$PPI = \frac{\text{savings} * \text{probability of success}}{\text{cost} * \text{time to completion (years)}}$$

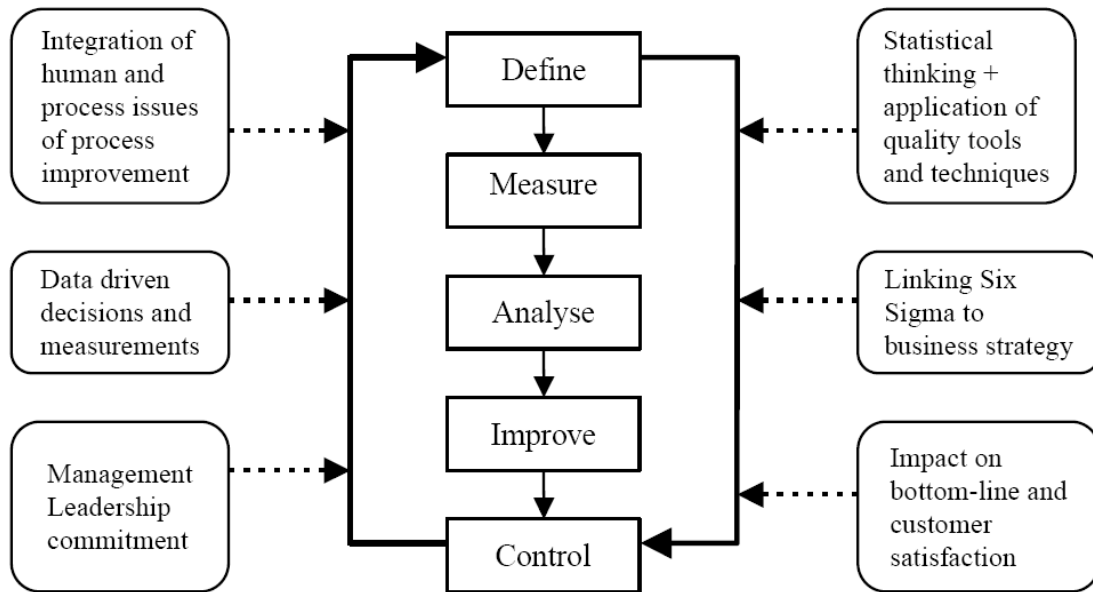
Pande et al. (2000, p. 146) suggests three fields of criteria that company should investigate:

- results or business benefits criteria,
- feasibility criteria,
- organizational impact criteria.

4.6. DMAIC Methodology

As a problem solving methodology or process improvement framework, Six Sigma strategy makes use of a series of well-defined steps. This includes definition of the problem (D), measurement (M) of the problem (i.e. defects which are responsible for the problem), data analysis (A) to discover the root causes of the problem (i.e. analysis of defects), improvement (I) of processes to remove the root causes of defects and controlling (C) or monitoring processes to prevent the perennial problem. The Six Sigma methodology for service processes is shown in Chart 13 on the following page (Antony, 2006, p. 239). The DMAIC is the core of Six Sigma and is only a minor modification of the PDCA by its nature. When a new process is being implemented, the DFSS or Design for Six Sigma, which is specially adopted procedure to suit needs of new products or services, is being used.

Chart 13: Six Sigma methodology for service processes



Source: Antony, 2006, p. 239

The DMAIC methodology is discussed and explained further in the following chapters and an implementation simulation is provided in the case study as well.

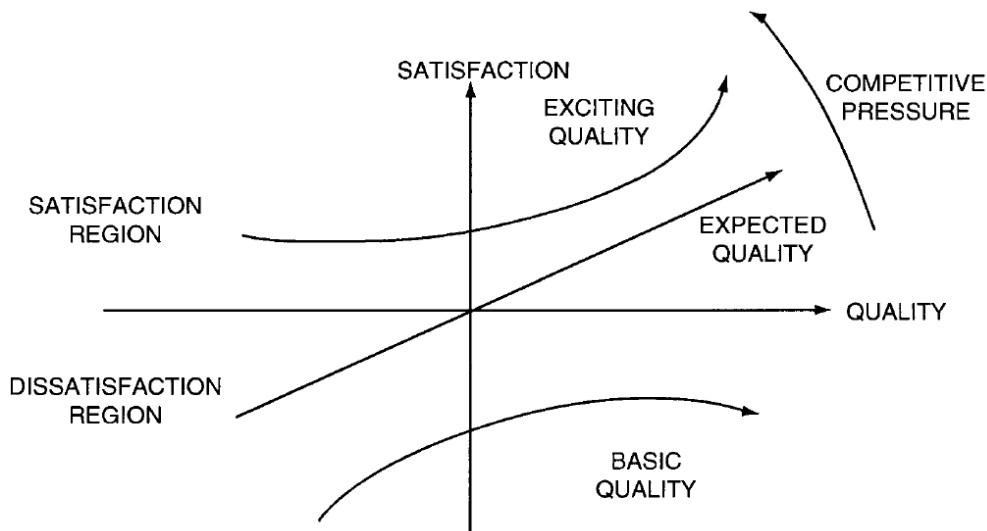
4.6.1. Defining Phase

All customer requirements are not equally important and not all of them are accounted as a defect when not achieved. A model that is commonly being used in order to analyze requirements is called Kano model (based on the work of Noriaki Kano, a Japanese engineer and consultant), which divides customer requirements into three categories (Pande et al., 2000, p. 193):

- Dissatisfiers or basic requirements (basic quality) – these are factors, features, or performance standards that customers absolutely expect to be met.
- Satisfiers or variable requirements (expected quality) – the better or worse you perform on these requirements, the higher or lower your rating from customers will be.
- Delighters or latent requirements (exciting quality) – these are features or factors that go beyond what customers expect, or that target needs no one else has addressed.

Pyzdek (2003, p. 119) provides a comprehensive presentation of Kano model, which examines all these three groups in a graph depending on the level of quality on one axis and the level of satisfaction on the other.

Chart 14: Kano model



Source: Pyzdek, 2003, p. 119

4.6.2. Measurement Phase

Excluding the costs of training, measuring is usually the biggest cost that company bears when implementing Six Sigma. However, a long-term measurement system represents a key building block for full organizational Six Sigma system. In order to avoid the measurement of everything possible and the state of being oversaturated with numbers, only the factors that are valuable and feasible to measure are the ones to focus on. Usually, performance gaps are a good starting point to begin with measuring.

As already mentioned, the Six Sigma measurement focuses on tracking and reducing defects in a process. The measurement of defects has many positive sides in sense of simplicity, consistency and comparability. Defects can be identified and measured with following indicators.

Proportion defective refers to the fraction or percentage of item samples that had one or more defects:

$$\text{proportion defective} = \frac{\text{number of defective units}}{\text{number of units}}$$

Final yield tells what fraction of the total units produced or delivered was defect-free:

$$\text{final yield } (Y_{final}) = 1 - \text{proportion defective}$$

Defects per unit (DPU) reflect the average number of defects over total number of units sampled:

$$\text{defects per unit (DPU)} = \frac{\text{number of defects}}{\text{number of units}}$$

Defect per opportunity (DPO) is similar to the DPU with addition of leverage for comparing less and more complex services, since in more complex services, there are a larger number of opportunities for defect (complexity is transferred into more opportunities for defects):

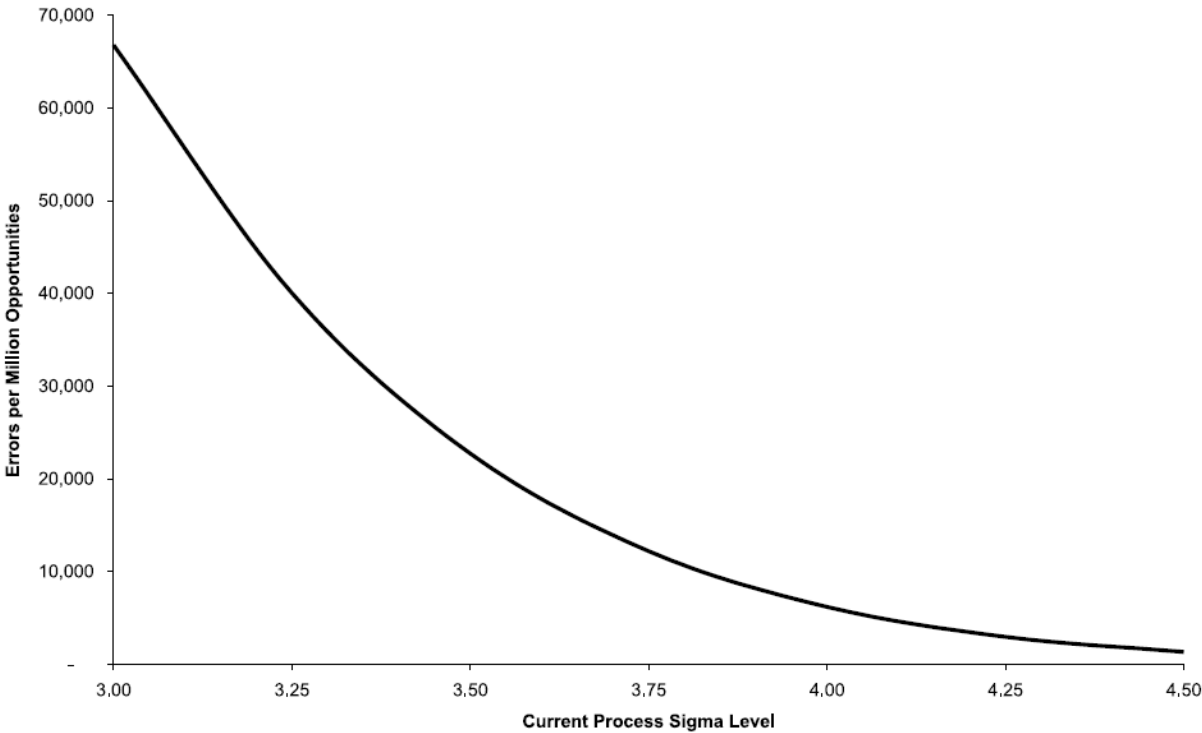
$$\text{defects per opportunity or DPO} = \frac{\text{number of defects}}{\text{number of units} * \text{number of opportunities}}$$

Defect per million opportunities (DPMO) expresses the proportion of defects over the total number of opportunities in a group:

$$\text{defects per million opportunities (DPMO)} = \text{DPO} * 1,000,000 (10^6)$$

Chart 15 shows relations between defects per million opportunities and sigma level, which is presented as a convex downward sloping curve.

Chart 15: Error rate versus sigma level



These measures can be applied to each sub process in order to find the rate of rework within each sub process and make it easier to locate the problem. The rework is usually done within each department and in the end it does not result as a defect, but can unnecessarily use resources.

Another important measure is the cost of poor quality (COPQ), which is used to compare Six Sigma projects running at same or similar sigma levels. The fundamental principle of the COPQ is that any costs that would not have been expended if quality were perfect are the cost of quality. Each project can cause higher costs lost to defects, which makes it a higher priority problem. This measure is considered to be extremely important, but it will not be assessed further, since it exceeds the intentions of the case study provided in further chapters. Therefore, it is only important to understand the value of this method. To sum up, in practice, it is always a good idea to include it in the analysis if several projects are compared or if costs of reaching goals are in question. It gives a simple baseline that helps evaluate which project will be more cost effective and whether project is profitable in the long run.

Chart 16: Costs of poor quality versus sigma level

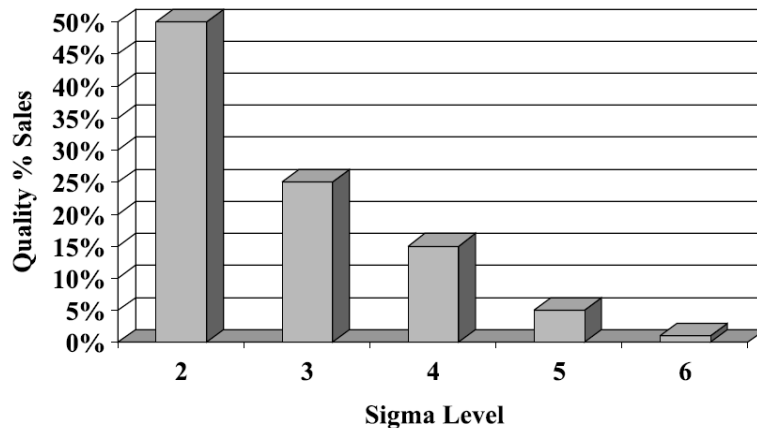
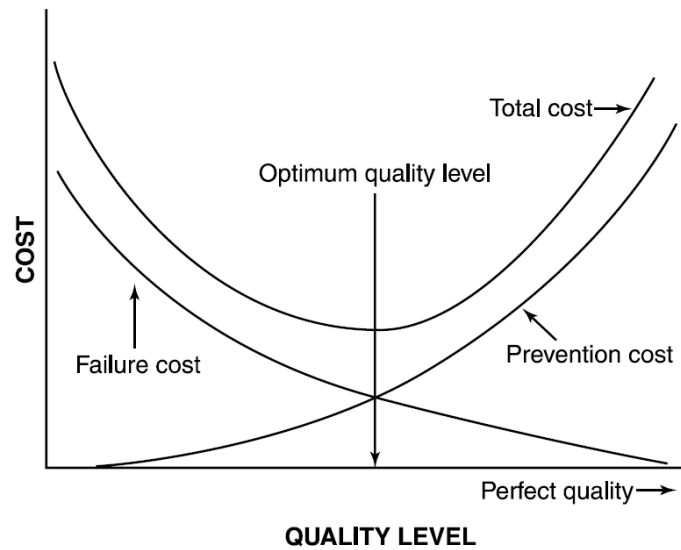


Chart 16 shows how costs are correlated to the sigma level and provides a clear image of how error rate drops exponentially when the sigma level increases. The relation between Six Sigma project costs and costs of failure are explained further in Chart 17 on the following page.

Chart 17: Model of optimal quality costs



Source: Pyzdek, 2003, p. 222

4.6.3. Analysis Phase

There are two types of analysis required in order to get a clear view of the problem. Data analysis defines factors that suggest possible causes to the problem, while process analysis gives a better understanding how the work is done. Combining these two strategies, root causes can be identified successfully.

Data perspective is assessed by applying the tool that is being used in order to provide a list of potential causes, which is called Cause and Effect diagram or sometimes just simply Fishbone diagram which was first implemented by Kaoru Ishikawa (that is why it is also being referred to as Ishikawa diagram in literature). The diagram will group the causes by categories that describe certain factors. Typically, in order to describe business processes, the following six factors are used: material, method, machine, measures, Mother Nature and people.

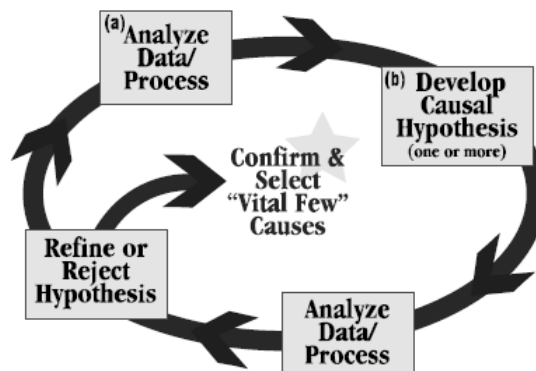
Process perspective and process mapping is among the most essential tools for Six Sigma. Rectangles in the graph present series of tasks along with diamonds showing decisions and all of them are connected in order to show the flow of the process. By doing this analysis, disconnects (points where requirements were poorly communicated), bottlenecks (points where volume overwhelms capacity), redundancies (repeated activities that can be abandoned), rework loops (places where work is being passed back in order to correct it) and decisions (points in the process where choices are made) can be revised.

Root causes can be defined as the most basic reason behind an effect. Six Sigma uses a mathematical approach by using the following equation:

$$Y = f(X)$$

Root causes are noted as X and therefore independent variable, while results are noted as Y and therefore a dependant variable. Pande et al. (2000, p. 256) suggest the usage of the root cause analysis cycle in order to provide hypothesis. Whenever the hypothesis is not correct, we can go back and refine it as presented in Chart 18.

Chart 18: Root cause analysis cycle



Source: Pande et al., 2000, p. 256

4.6.4. Improvement Phase

The improvement phase is a segment that defines where solutions and ideas may be generated and ruled on. Once a problem has been successfully identified, measured, and analyzed for potential solutions, the results can be evaluated to solve the problem (Six Sigma SPC, 2008). During the improve step of the Six Sigma approach, ideas and solutions are put to work. The Six Sigma Black Belt has discovered and validated all known root causes for the existing opportunity. The Six Sigma approach requires Black Belts to identify solutions. Few ideas or opportunities are perfected to the extent that they achieve an instant success. As a part of the Six Sigma approach, there must be checks to assure that the desired results are being achieved. Some experiments and trials may be required in order to find the best solution. When making trials and experiments, it is important that all project associates understand that these are trials and that they really are a part of the Six Sigma approach (Adams Six Sigma, 2008). The sole purpose of improvement phase is to make changes in a process that will eliminate the defects, waste, costs, etc., that are linked to the customer need identified in a team's define stage. Common tools and strategies that can be found referenced in any discussion of the improve phase of DMAIC are solution matrices that link brainstormed solution alternatives to customer needs and the project purpose, and methods for implementing desired solutions (George, 2003, p. 292). The improvement phase of the methodology encompasses the following issues (Antony, 2006, p. 240):

- Develop potential solutions to fix the problems and prevent them from recurring.
- Evaluate the impact of each potential solution using a criteria-decision matrix.
- Solutions that have a high impact on customer satisfaction and bottom-line savings to the organisation need to be examined to determine how much time, effort and capital will need to be expended for implementation.
- Assess risks associated with potential solutions.
- Validate improvement (i.e. reduce defect rate or improve sigma quality level of the process) by pilot studies.
- Re-evaluate the impact of chosen potential solution.

4.6.5. Control Phase

Once improvement opportunities have been implemented, control phase continues by measuring the process using SPC (statistical process control) to trace and confirm the stability of the implemented improvements and the expected results in the process (Six Sigma SPC's, 2008). Many people believe the best performance you can ever get from a process is at the very beginning. Over time, it is expected that things worsen slowly until it is finally the time for another major effort towards improvement. On the contrary, the Kaizen approach seeks to make everything incrementally better on a continuous basis. The sum of all these incremental improvements can be quite large. As a part of the Six Sigma approach performance tracking mechanisms and measurements are in place to assure, at a minimum, that the gains made in the project are not lost over a period of time. As a part of the control step, we encourage sharing with others in the organization. In this way, the Six Sigma approach really starts to create phenomenal returns; ideas and projects in one part of the organization are translated in a very rapid fashion to implementation in another part of the organization (Adams Six Sigma, 2008). The purpose of control phase is to make sure that any gains made will be preserved, until and unless new knowledge and data show that there is an even better way to operate the process. The team must address how to hand-off what they learned to the process owner, and ensure that everyone working on the process is trained in using any new, documented procedures. Six areas of control are critical in service environments (George, 2003, pp. 303-304):

- Making sure the improved process is documented (and that documentation is used regularly).
- Turning results into dollars (validated by the finance department).
- Maintenance of gains is verified down the road.
- An automatic monitoring system is installed which will identify “out of control” performance.
- Piloting the implementation.
- Developing a control plan.

5. Linea Directa Communications

5.1. Company Description

Linea Directa Communications is a part of the Studio Moderna Group, which specializes in multi-territorial direct marketing solutions (contact centres, fulfilment houses) across the entire CEE region. The Studio Moderna company was established in 1995 as a full-service direct marketing communication agency.

In 2006, there was a spin-off out of which LDC was established as a separate company. The reason for the spin-off was the tendency for providing and developing the best direct marketing services and this is why LDC is supposed to specialize in those services. One of the reasons for the spin-off was that potential partners were disturbed by the Studio Moderna brands that are not so highly appreciated in some countries. From this point of view, the separation of LDC presents a fresh start for the company.

Ever since the company has served successfully a broad range of clients across various vertical markets not only to design and manage marketing databases, but also to develop and execute personalized campaigns (B2B, B2C) using telemarketing, postal mail and internet across multiple channels. The core competency of the company is to create and build valuable customer relationships through a variety of cross-border database-driven communication activities in the CEE region. LDC helps the client to find the best possible audience for their commercial message or campaign and to establish a “direct line” with their most valuable asset - customers.

The company has contact centre operations in 19 countries across the CEE region. This allows them to help a client to identify and reach customers and prospects in their own language at their place of work or at home. The company considers itself not only as a provider of direct marketing services, but also as a partner who shares responsibility for success. Company’s organization structure on the local level can be observed in Appendix 4.

5.2. Mission, Vision and Values

5.2.1. Company’s Mission

Linea Directa Communications mission statement is “Everybody can provide products and technology these days, but not everybody can offer the perfect solution for your business success. Through complete dedication and understanding of our customers and markets we are fully committed to offering a direct marketing service that is unmatched anywhere in the world”.

Company promises consistent development of their clients' business nationally as well as internationally at all times by providing the highest standards of quality and service in their field of work. LDC is planning to fulfil its mission by finding, involving and developing potential long-term - employees - knowledge workers.

5.2.2. Company's Vision

The LDC is planning to work continuously on occupying the leading role in professional services for a broad range of clients across various vertical markets; not only to design and manage marketing databases, but mainly to develop and execute personalized campaigns using telemarketing, postal mail and internet across multiple channels.

Linea Directa Communications promises to improve business of every marketer and increase the customer base in order to reach customers faster, keep them longer and make them more profitable. The company has expertise in finding these customers, in establishing an interaction with them and in fine-tuning the profile of every single customer. They promise to raise the number of clients, so that they will be able to take advantage of new sales opportunities and to express their commercial messages more effectively.

The company plans to continue with the growth and to expand multinational network of offices in 19 different countries in Central and Eastern Europe. The company intends to exceed an impressive market of over 450 million consumers and continue with this path.

5.2.3. Company Values

The company's values are promoted together with service values. The following model represents the company's values:

- flexibility (being able to deal with any situation),
- responsibility (details generated by great results),
- synergy (1+1=11, up/down/left/right/all around),
- trust& reliability (mutual reliability),
- profitability (short & long-term & sustainability),
- quality (IN & OUT & services & relationship),
- innovation (instead of innovate how, find new what).

5.3. Business Strategy

Linea Directa Communications business strategy is to remain the market leader in the field. To accomplish this, it strives to achieve the desired results and prompt and timely delivery of quality service at the lowest cost in the entire CEE region. Their work consists of:

- bearing the responsibility for results,
- reducing the costs of the clients and increasing the revenues,
- helping clients to take advantage of new sales opportunities,
- helping clients in Central and Eastern Europe to cease unpredictable marketing campaigns,
- combining experience gained from the West with localized approach.

5.4. Services

Database Management

In direct communications, campaign is no better than the database it possesses.

Data Entry

Data lab hosts an expert team of data-entry and response handlers. The continual use of reference databases guarantees the highest quality of service.

Data Cleaning and Verification

Keeping the list up-to-date is a challenge as more than 20 million people across the CEE region move every year, change their addresses (and usually their phone numbers). People change their e-mail addresses even more often, at a rate of 30% per year. This poses a considerable challenge for marketers in every industry. Company's data lab offers verification services that detect and eliminate duplicates and correct postal addresses, phone numbers and e-mail addresses.

Database Hosting and Maintenance

If a customer wants to stay focused on marketing rather than on details of their database, data lab offers system administration services, which are vital to the maintenance of marketing databases. A highly qualified team of database professionals manages system administration requirements either at customers' company sites, or within data lab facility.

Data Lab

Successful direct marketing programs rely on accurate targeting. Data lab runs programs that identify and investigate the profile of each different customer. Through an accurate targeting, the company ensures multi-channel programs that create connections and drive responses. Clients are provided with the most complete and accurate information about their customers. Using the in-house analysis and segmentation techniques data lab can identify the most valuable addresses for customer campaigns. Data lab experts help clients by compiling the majority of their lists with proprietary processing that sharpens response and cuts postage and printing waste. Detailed reporting and improved market insight helps clients to improve their lists continually and, finally, to make their campaign budgets go further.

List Broking and Selection

Partnering with list providers across the whole region allows LDC to complete any kind of B2C and B2B list according to client needs.

Profiling & Research

As markets expand and competition and communication channels increase, clients need to be able to keep track of current market trends and developments. LDC can gather this data for clients, enabling them to use it in order to obtain more insight about their business. This is done by using company's various direct communication tools and mapping of clients current channel partners. With this knowledge, the "rising stars" can be identified as well as the fading ones in order to allow clients to approach them pro-actively.

Lead Generation

Lead Generation is not a new part of the process, however, it has a new approach. With company's data knowledge and direct communication tools it is able to select the most effective way of expanding the target group of their clients. Conversion rates on leads have a higher conversion success rate than "cold" contacts because the prospect is pre-qualified before the lead is ever received.

Customer Acquisition Programs

The company is ready to help client's sales team at every stage of the sales process: from profiling and qualifying leads to closing the deals; from invitations to events to developing and maintaining the customer relationship (handle correspondence). Precise targeting enables LDC to find clients most positive leads and the best customers for up-sell and cross-sell. Detailed reporting and improved market insight helps a company to improve its client list continuously. LDC does not focus only on supporting sales but also on building the size and quality of client's database.

Multi-channel Business Partner Programs

The importance of using well-defined criteria for identifying, qualifying, and recruiting business partners cannot be overstated. Linea Directa Communications works with clients to clarify their goals and rank the desired competencies they are seeking in potential new business partners in order to:

- understand specific recruitment goals and criteria for success,
- define compelling program benefits, product positioning and messaging,
- translate business partner program benefits into telemarketing scripts and outbound email messaging,
- acquire business partner prospect lists and define prospects that align to specific objectives,
- train the Linea Directa Communications telemarketing sales team about clients business partner programs and objectives,
- establish metrics and reports for benchmarking the recruitment campaign performance.

Customer Value Growth Programs

It is known that it is more than 80% more expensive to attract a new customer than to keep an existing one. This is why it is so crucial to invest appropriately in existing clients and enticing the new ones at the same time, and thus allowing business to expand continually.

Response Generation

Communication programs are aimed at getting the maximum response through different communication channels (postal, web, phone). This requires accurate targeting and engaging content. Dialogues and promotional communication materials are focused on how the best individual customer and call for their action can be motivated.

Customer Care Programs

In today's relationship, marketing is not sufficient for tracking experiences of customers and learning about them. It is about enriching every interaction with customers:

- welcome calls,
- helpdesk,
- customer service setup support,
- complete customer care,
- complaint handling,
- win-back programs.

Navigator

The Navigator program is a list creation and a sampling tool, which is currently running in Hungary. This medium reaches 60,000 students in their natural environment directly. At the start of each year, welcome-bags are distributed to university students in all university towns. Because of attractive sampling methods, a company is able to acquire fresh and accurate data about this extremely large and important target group. Responses contain key data such as email, addresses, mobile info, and also information about their lifestyle and shopping habits. Clients can participate in the sampling, but also rent the data at a later stage to follow-up with tailor-made interactive campaigns.

Inbound Communications

Within 19 customer management centres, LDC manages all of client's incoming communications – by telephone, email, Internet or fax – from customer care to cross- and up-selling.

Outbound Communications & Telemarketing

Linea Directa Communications design and implement all kinds of Telemarketing services: from customer profiling and lead generation to sales conversion. Company provides appointment scheduling, customer retention, win-back programs, and loyalty programs. Agents are trained to sell. They are well informed and fully aware of the importance and value

of polite, courteous, convincing dialogue in order to reduce costs of acquisition and increase brand loyalty. The multi-lingual solutions that are provided are quick, efficient and reliable. The scale of operation, structure, staffing and technology allows LDC to develop, adjust & change activities fast according to client's needs. Across the CEE region LDC has well-established state-of-the-art CMC operations:

- over 700 well-trained, highly motivated, sales-oriented agents,
- multi-lingual solutions,
- native speakers in 19 countries,
- pools of West-European languages (French, Italian, German),
- the latest equipment including IVR, CTI, SMS-server,
- customized uniform CRM software,
- facilities for mobile and email marketing.

Territorial advantage enables LDC to standardize the quality of communication services across every country and region as a whole. This results in a significant reduction of risks and costs for clients. It also allows faster campaign implementation and response handling.

Letter-shop and Pick & Pack

Across the entire CEE region (19 countries), the company possesses warehousing facilities. The system is designed to maximize the accuracy of mailings and the quality of goods delivery. This enables LDC to serve their clients with personalized mailings, multiple message insertion, order execution, inventory management, home delivery facilities and post-box services (return handling). Clients enjoy a complete mail engineering solution, including mail file preparation and address standardization for improved delivery and bottom-line savings.

Payment Processing

All across the region, payment-processing services are provided to suit market demands: from cash on delivery to credit card payments; from direct debit to payments through instalment plans.

Creative Services

The primary focus for creativity is to produce measurable results and guarantee the ROI. This is why LDC specializes in producing copy and design that sells.

In order to achieve company's goals, the company decided to work on creating values that suit their services and that services are and will be primarily based on:

- results coming from devotion of employees,
- quality of work and client expectations,
- focus on flexibility coming from "can do culture".

These values can be resembled in the following statements, so that the employees can easily identify their attitudes with the service values:

- I am a part of the worldwide team and I am continuing to build a success story.
- I have a will and am ready to change, transform my behaviour, knowledge in order to add value to my work.
- I am involved in the planning of the work that affects me.
- I create a work environment of teamwork and lateral service so that the needs of our customers/clients and each other are meet.
- I have the opportunity to learn and grow continuously.
- I build and create strong relationship with colleagues and our existing and potential customers/clients.
- I seek opportunities to innovate and improve existing experience continuously.

6. A Case Study – Implementation of Six Sigma in Linea Directa Communications

The case study will provide a general overview on how Six Sigma can be used in LDC in form of a project. A simulation of implementation of the first three steps (define, measure and analyze) of the chosen project will be provided in order to prove it can be done successfully. However, for any real implications about how the company would react and what would the results show, a real implementation is needed. Firstly, organizational readiness will be discussed and after that, the project choice will be presented. All remaining issues including the philosophy of the company, which are essential before any attempt of the Six Sigma implementation, were already covered in the Six Sigma chapter from theoretical point of view. Most information that will be used is based on real data acquired from the company, while the parts that require actual implementation will only be estimated. Furthermore, the analysis will be limited to the field of profiling actions, as the company offers a wide variety of services (see chapter 5.4.), which can be customized additionally and which can consist of several completely different departments using different procedures. Furthermore, there is absolutely no option of making a systematic analysis of such broad field with such a vast amount of variables. By limiting the field of analysis, better and more specific results, which are not based on certain generalizations, can be expected.

6.1. Organizational Readiness

LDC falls into the second quadrant (see Chart 10, p. 33) of Hensley's and Kathryn's matrix for the evaluation of Six Sigma where readiness, meaning, service processes are being measured, but there is no established ongoing quality improvement program. Thus in the company, there are numerous efforts present to improve the quality, but they have not been formalized. Establishing the Six Sigma program in LDC would be extremely difficult if company did not measure service processes. However, company's work is supported by the software, what presents important advantage. This simply means that the majority of actions is recorded in a form of database, which gives a good starting point for the implementation of Six Sigma. There have been numerous measures developed in order to control specific important points mostly in call centres that cover all marketing actions including profiling, which will be assessed further. These measures are called Key Performance Indicators (KPI's) and are based on certain criteria and calculated automatically. These indicators are used also in order to make a monthly comparison of the countries within the system. A list of all KPI's currently used in LDC can be seen in Appendix 5, where their definition, metric and description are present as well. The company's efforts to improve quality can be greatly observed not only from these indicators but also from the structure of strategy, mission, vision, company values, and service values.

LDC uses the CRM software called CRM Cat Pro, which functions as an intermediate between an agent or any other user, and the database behind it. The system is connected to all main activities and is based on SQL database with a predefined structure. Furthermore, there is a possibility to develop any kind of measurement system that is tied to any of the factors that occurred, since logs of literally all events are available in the database. Such reports are created for different projects on a daily basis. A problem occurs when processes cannot be measured without presence of a person. These are the best potential Six Sigma projects, since currently, there is no working system established that could show which are the root causes of problems, eliminate them and control variations in the future. An example of this type will be provided in the following chapters in order to prove that implementation of quality management is possible with the use of systematic sampling and Six Sigma. To sum up, the company has a great potential for the implementation of Six Sigma from the matrix perspective. A better option would be quadrant IV, which would only require an adoption of a new quality management system from the company.

The main problem of the KPI's is that they have been developed on certain prepositions that are not necessary suitable for the work of every country in the system. In some cases, this results in incomparability of outcome between countries due to different processes. On the other hand, indicators themselves are very well structured and cover a broad spectre of processes. As seen from the Appendix 5, the KPI's take certain variables from the system and present indicators. Different processes can completely exclude one of these variables in one country, which can cause zero value of a certain KPI, for example values of Inbound, Outbound, Supervising, etc.: the KPI's where zero or small value could be often observed. Simply, some countries refused to insert activities properly, which automatically means that indicators will show wrong and incomparable values. Situation has improved dramatically in the past months, since numbers are being constantly monitored. However, a great problem occurs due to the fact that error is discovered only when something appears to be really wrong or one country's KPI differs greatly from all the others. On the other hand, one of the KPI's could show wrong values deviating only by few percent, which could never be discovered. The only option that remains is to know the work processes of each country as good as possible in order to assess the meaning of KPI's in each country. The other problem is that countries used to calculate all these indicators by themselves using their own methods, what, naturally, lead to results that could be used to perform analysis on the local level only. The company devotes a great deal of effort to minimize the described problems by standardization process. Every variable that can be standardized is unified in every country, what will eventually result in uncompromisable possibilities of comparison. So far, categories like call statuses, activities and many others, have been completely standardized, which has already showed results in accurate KPI's connected to these factors. It is logical to expect that KPI's will improve its value through standardization, but the problem of variables that cannot be standardized will remain in the end. Imposing standards and changing the way of work, which functions very well in a certain culture completely, can have strong negative effects.

Therefore, a mild approach to such categories is suggested, still, it can be concluded, that the company is already doing its best.

Additional issue is that provided KPI's are used generally for all activities and are not developed for a specific service like profiling. This should be considered as an important issue since different services have to be assessed differently. Recently, a step has been taken in that direction with proposition of four KPI's for profiling specifically, which include:

- number of calls (attempts),
- talk time,
- number of fulfilled questionnaires,
- % of answered questions.

It is evident that mentioned KPI's cover the profiling action very broadly. Quality of conversation is one of the things that is not being covered at all. What should be done and how it can be done will be showed in the following chapters of case study, where idea of KPI's is merged with form of dialogue quality evaluation (example of evaluation form is also available in Appendix 6).

6.2. Project Selection

In the context of services offered by LDC, project selection process is about inspecting the current situation and indentifying problems. All current problems present a potential situation for the Six Sigma projects. In order to define the right improvement project for Six Sigma, external and internal sources of problems have to be assessed. In each company, there are various potential projects, but for the purposes of this thesis, only one example will be made. There is practically no limit to the number of projects running simultaneously. The only guidance is to stay within controllable scope.

There are a few problems that can be discovered when using multiple sources, but the intention of this case study is providing a clear image of how Six Sigma can be implemented in to one of the direct marketing processes that LDC offers. In order to avoid problems that would appear when there is a need of acquiring specific data that would require measurement and an actual launch of Six Sigma implementation to produce results, the only reasonable option is to simplify the process slightly.

As already explained (see p. 38), there are numerous external and internal sources that can be examined in order to assess which project would be the most suitable for LDC. Naturally, in order to get the best possible choice, all of them should be evaluated. For the purpose of this analysis, only the most important, which is the voice of customers, will be used. The first choice to get insight of customer's expectations and factors of dissatisfaction would logically

be the results obtained from customer satisfaction surveys. While examining the current situation in the company, I came across with the fact that customer satisfaction questionnaires were prepared in the past, but have never been used. Furthermore, there was absolutely no information available on customer satisfaction in a written form.

Since company is missing a large opportunity to detect customer's needs, I developed a new questionnaire, which will be implemented for all future projects. The new questionnaire mostly covers already existing categories while adding a few new ones and adopting to suit well-known service quality system requirements. The questionnaire is developed using SERVQUAL (system for quality of services) categories such as reliability, assurance, tangibles, empathy and responsiveness, which give further possibilities for research (example of SERVQUAL questionnaire can be seen in Appendix 1). Fortunately, there was another option of gaining voice of the customer insight available. In order to review current customer satisfaction for purpose of analysis, an alternative in form of an interview with International Sales Manager was conducted, asking them to point out customer expectations, reactions and complaints before and after the profiling projects. On the one hand, this method is much simpler than the process of acquiring and analyzing questionnaires, while on the other hand it offers much less accurate results as they are based on perception of an individual. However, all the explanations were summed up in the groups that give a comprehensive picture of causes for dissatisfaction of customers. Comments to each group were added in order to provide a clear picture of the situation. Some factors cannot be affected by the company and were therefore removed. Results of the interview are presented below.

Customer expectations with profiling can be summed up in six simple categories:

- Customer expects an extremely high ratio of profiled records – Expectations sometimes reach numbers up to 90% of all records profiled within the given database. It is almost impossible to reach such ratios from the practical perspective, since databases can be either old, inaccurate, or people may be unwilling to cooperate. Reasonable numbers can reach around 30%, while a very small amount of this percentage can be affected by agents work.
- Customer expects that deadline will be respected – Deadline is agreed upon with sales department. Dates are set in the project preparation phase. It can be affected by wrongly planned durations of each action required to complete the project.
- Customer expects a different final report with much broader analysis, explanations and agent comments – If not agreed differently, customers are only given the database with enriched information. In order to avoid this, customers should have either a clear picture about the final output or a report should be standardized in order to make it a necessity for each project. In my opinion, second option is much better.
- Customer expects professional and high quality dialogues – Many times, agents present themselves as client company representatives. That is why this makes it a clear and understandable expectation, since quality of dialogue can affect the client company image.

- Customer expects high quality and reliability of acquired information – It is reasonable to expect that information provided in results is actually the information acquired from conversations. However, as it happens sometimes, agents push customers to certain directions or choose the wrong answer within the software.
- Customer expects that costs will not increase in comparison to planned costs – It might happen that the evaluation of costs for the project is too low, current technology does not meet all the requirements and has to be upgraded or any other situation, which can have an incremental effect on the costs.

Additional expectations:

- Customers expect company's consultants to help them using the acquired information in order to generate results

Calculations on savings and costs for managing of the problems mentioned above are not available, probably also due to the absence of the questionnaire results and therefore not emphasized results. If the same problems were confirmed from the results of questionnaire, the leadership of LDC would unarguably require the mentioned savings and cost calculations for each situation. On the basis of such financial information, LDC would be able to determine exactly, which of these situations is the best potential for the Six Sigma project, using the PPI formula.

Numerous other methods could be used in real business situation, such as the theory of constraints, which focuses on project determination taking in consideration current resource constraints, or methods like critical chain project portfolio management. Furthermore, with the availability of full financial information, NPV and break-even point could be calculated as well, which gives further criteria for making decisions. The use of the mixture of previously mentioned sources would give more precise results, but would require extensive work and actual implementation. We can presume, that question "Where are we falling short in meeting customer's needs in profiling actions?" was answered by: "Customer dissatisfaction is most visible in relation to quality of data". It will be assessed as the main problem in the company at this point and will therefore be transformed into Six Sigma project, which will serve as an example.

The Six Sigma project that will be discussed through the case passes all the other qualifications, which suggest that problem should present a gap between a current and desired performance, that the cause of the problem is not clearly understood (there are some general views on how it could be improved, which proves insufficient in order to make large improvements) and, finally, that the solution for the problem is not predetermined or with other words, optimal solution is not apparent. As already mentioned, the majority of probable Six Sigma projects does not pass these criteria, since almost everything is measurable and therefore root causes are identified easily. There are many factors that affect the quality of the output in profiling actions, so there is never a simple and clear solution to what is causing the

specific problem. A fact is that most of the influencing factors change for each specific project that company does, and therefore it is hard to generalize solutions.

Project is further evaluated with additional criteria for the selection. There are endless lists of possible criteria available throughout the literature. Of course, not all of them should be used, since it is important to adopt criteria in order to use only the factors suitable to LDC. There are certain interests in the company that should be used as guidance for the selection of appropriate project. The best projects usually meet company’s current needs, capabilities and objectives. From the factors in the Table 2, impact on customers, impact on core competencies and financial impact belong to the field of results or business benefits criteria, while resources needed correspond to feasibility criteria and learning benefits to organizational impact criteria. Selection criteria were chosen on the basis of experience throughout working with the company.

Table 2: 5 most important criteria for confirmation of Six Sigma project in LDC (estimation)

Selection criteria	Final effect
Impact on customers	Increased customer satisfaction (brand image)
Impact on core competencies	Strengthened core competencies
Financial impact	Increased number of clients leads to increased profit
Resources needed	Complete attention of few employees with additional consultants
Learning benefits	Adaptation of Six Sigma and simplified application of the methodology in the future

Source: Own

The list of criteria can be adopted each time in order to present the criteria, for which answers to all potential Six Sigma projects can be provided easily. Criteria should also be changed in order to reflect the company’s current interests.

6.3. Defining Processes and Customer Requirements

6.3.1. Identifying the Major Core Processes

Each company has a number of essential processes. They are usually identified by the fact that they add value to the customer. Even though processes can vary from project to project, in LDC, five core processes can be defined for the majority of the services it offers:

- project preparation,
- development,
- agent training,

- execution,
- analysis and report preparation.

Briefly, in profiling project, the preparation phase includes all documentation and planning of capabilities, the development phase includes database preparation and script development as well as importing of the database, agent training, and the execution includes actual calling of people in database and inserting of acquired information, which is finalized by the analysis of results and report preparation. A detailed presentation of processes follows in further charts (see Chart 21, p. 68), where general processes above can be identified easily.

6.3.2. Defining the Key Outputs of the Core Processes

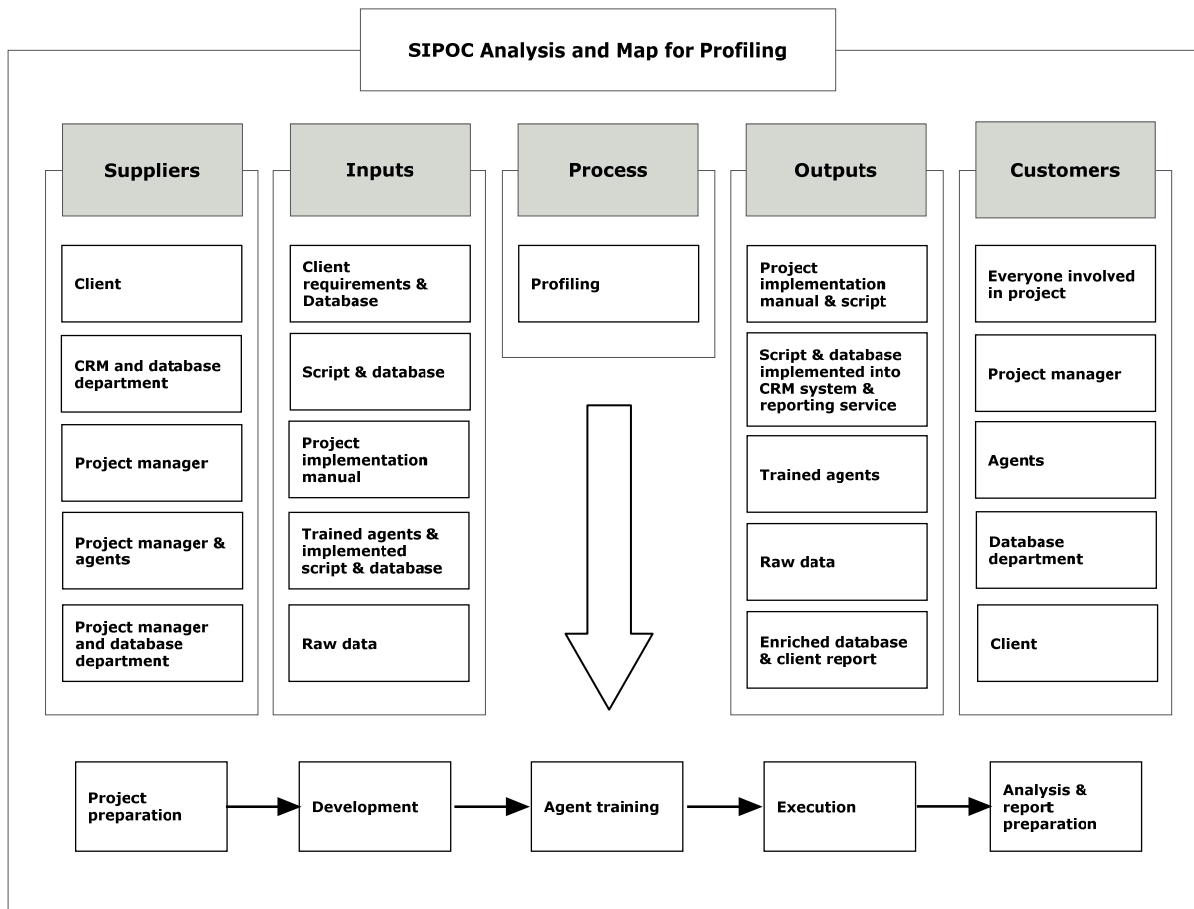
Each core process has its outputs that can be internal (within the company) or external (for final customer):

- In project preparation phase, a project implementation manual is prepared including all the important information about the project, conversation script, and guidelines for agent training and other information.
- Development phase includes preparation of database, implementation of script into CRM system and importing the prepared database. If there is need for the latter, reporting services are developed in order to help Project Managers track the project.
- Agent training provides agents with all necessary information about the project and the product. All conversations are trained and further explained from the content perspective. Important points are highlighted. Rewarding system is presented to agents in order to motivate them.
- Execution phase includes calling records in database and filling out scripts that were entered into the CRM system.
- Analysis and report preparation phase includes the preparation of an enriched database for the client as well as the preparation of the final report.

6.3.3. High-level Core Process Map

In order to provide a diagram for all the major activities that are a part of core process, a map will be presented. A SIPOC (Supplier, Input, Process, Output and Customer) diagram is used to make an overview of business in process perspective. The SIPOC diagram displays a cross-functional set of activities of LDC in a single diagram, uses a framework applicable to processes of all sizes, and helps to maintain a larger perspective with possibility to add details. Below, a SIPOC analysis and map is provided for the process of profiling when the client provides its own database of records for profiling (processes slightly differ when LDC supplies the client with its own database which is further explained in chapter about gathering customer data).

Chart 19: SIPOC analysis and map for profiling



Source: Own

The diagram represents, what is the input of LDC’s client, how it is transformed through the profiling process and what is the final output that returns to the client. At the bottom, the process flow is presented. It is also seen from the diagram, which teams are included in the process and what are their outputs, which serve as inputs for further processing with another department. The diagram gives a clear picture of inputs and outputs, while also explaining who is accountable for them.

6.3.4. Gathering Customer Data

There are many methods that are used in order to gain information about customers spreading from surveys, focus groups, interviews, formalized complaint system, market research, shopper programs, to more modern ones like customer scorecards, data warehousing and mining, and quality function deployment. At the moment, an extensive survey is being conducted using company’s own call centre capabilities in order to gain customer information. However, the project will last quite some time, so results cannot be included into the thesis. At this point, information will be acquired from the A.T. Kearney’s (strategy consultants) strategic workshop for Linea Directa Communications made in 2007.

Information about customers is relatively scarce and will be assessed in general. All further information will be additionally enriched by results of an interview with International Sales Manager.

Target groups for direct marketing services (profiling included) of Linea Directa communications are (A.T. Kearney, 2007, p. 34):

- automotive industry,
- publishers,
- financial institutions,
- telecommunications,
- utilities,
- government.

It is apparent from the research that call centre outsourcing will have doubled by 2010. The direct marketing market is growing rapidly in CEE, while companies increase their budgets for direct marketing as well, which further implies that LDC should focus on acquiring new customers (A.T. Kearney, 2007, p. 34), which has already been emphasized under the selection criteria for the Six Sigma project.

What customers expect from profiling service is usually a certain database of their (potential) customers with all specified information. Clients specify exactly what they are looking for in the project preparation phase, so scripts are prepared accordingly (sample of the script can be seen in Appendix 7). There are two options with profiling projects, one is that client provides LDC with a list or database of customers, which only needs to be enriched with additional information. The other option is that the clients specify which their target group is and then LDC provides them with the database using techniques known as data mining. In both cases, clients expect a certain percentage of database enriched with required information. Since situations are different in form of how much influence LDC has on the results, only first option will be researched throughout the case. The majority of databases processed recently were provided by clients. Company has no influence on the quality of the database itself and therefore these factors will be neglected from the research point of view of this case.

6.3.5. Developing Performance Standards and Requirements

In order to be able to measure actual performance and assess strategy, output and service requirements are defined. Output requirements are features of the service that are delivered to the customer. To start the process, output or service situation has to be determined. This can be observed easily from the previously created SIPOC diagram, where the last output is the report and the enriched database for the client of LDC. Clients will usually be the final users of the information for its own purposes and will be corresponding to one of target groups of clients already mentioned. In order to develop clear requirements, all information presented

above, which base on the interview with International Sales Manager, as well as A.T. Kearney' workshop will be used. In continuation of the process, all expectations and complaints have to be combined into something observable in order to define a clear performance standard. Usually, it can be done in form of a statement. While summing up all six points of customer expectations and company's values and service values, this is how the requirements statement looks like for Linea Directa Communications:

Customers will be provided with the largest possible profile to record ratio of enriched database and extensive report including explanations and further guidance of company's consultants by the specified deadline. All possible delays and cost variances will be predicted before the project start in order to avoid surprises in the end. The quality of conversations will be thoroughly supervised and agents will be motivated for the best performance while excluding every possible error that could result in increased costs.

In order to validate requirements, this statement will pass all the included departments to receive a feedback. The most critical point here is the role of consultants, which is not practiced at the moment and should be implemented according to customer expectations. However, many requirement statements can be quite demanding and sometimes almost impossible to reach, which then becomes a matter of negotiation with clients and sales department. The most important thing in the end is that when statement is confirmed, it is communicated with every single person involved in the process in order to establish a common goal.

6.3.6. Analyzing and Prioritizing Requirements

Following propositions of Kano model (see p. 39), LDC customer's requirements can be divided as follows:

Dissatisfiers:

- high quality of data,
- agreed costs,
- agreed deadline.

Satisfiers:

- high quality of conversation,
- high ratio of profile to record,
- extensive report.

Delighters:

- consultant.

Clients are taking for granted at least high quality of data, agreed costs and agreed deadline. It is considered to be the core of an agreement between LDC and its client and therefore can be included in the category of dissatisfiers. On the other hand, having a consultant was an idea of only a few clients in the past and can be considered as a delighter. Every remaining requirement falls into the group of satisfiers. Having priorities defined, company can start working on meeting these requirements starting with dissatisfiers and building its way to delighters. For the purpose of an implementation example, the high quality of data as the first dissatisfier will be analyzed further. This point of view confirms other methods used in Six Sigma project selection chapter.

6.4. Measuring Current Performance

6.4.1. Planning and Executing Measures

Operational definitions of what is to be measured are provided in further chapters, including understandable and unambiguous descriptions. In order to measure quality of information, a database of 10,000 records will be used as a population. Following recommendations of International Database Manager, a representative population was chosen, which means that similar findings can be applied to all databases of average quality. The database and its final structure described in the further text are based on real records of a concrete case. Numbers have been rounded in order to make all calculations simpler and the model more representative in the end. In the chosen population, approximately 3,000 of records are profiled in the end of the project. Another 3,000 records have either a wrong number, are unreachable, or have a busy tone. 4,000 records are lost due to unwillingness to cooperate or lack of time to participate. Out of all 7,000 records that had a contact initiated, 1,000 records are depending on agent's motivations to persuade, out of which 700 are persuaded by the agents and 300 are not. Both numbers are already included in the final counts. It becomes obvious why customer expectations regarding percentage of profiled database presented in previous chapters (up to 90%) cannot be reached even closely in the end.

The script that was used for this specific case contains 5 groups of questions. In order to avoid measuring each separate answer, questions can be grouped into categories that include the same type of data. If all of these questions are answered, the record is considered to be a profile. As explained before, the population of profiled records is 3,000. A comparison is made by listening to dialogues and matching them to results. Since in practice, there is no option of listening to all of the dialogues, a systematic sampling is used. On each 20 (with steady and longer projects, these numbers go up to 100 over a period of time) conversations made, one is inspected. In the end, 150 conversations are fully checked. All results from the sample will be applied to the full population. There are numerous reasons why the answer will have different results from the one acquired from the conversation. All these causes will be

further assessed using Ishikawa diagram. Each time any of the 5 groups of questions will differ when comparing dialogue and conversation, it will be considered a defect. There are 150 profiled and checked records, out of which each one has 5 opportunities for defect (each group of questions is one opportunity).

6.4.2. Developing Defect Measures and Identifying Improvement Opportunities

All further numbers presented in the formulas are based on the examination of 150 dialogues of the specific case described above. There were 30 defective units and 40 defects overall.

$$\text{proportion defective} = \frac{\text{number of defective units}}{\text{number of units}} = \frac{30}{150} = 0.20$$

There are 20% of units that contained one or more defective units.

$$\text{final yield } (Y_{\text{final}}) = 1 - \text{proportion defective} = 1 - 0.20 = 0.80$$

There are 80% of units that contained no defective units.

$$\text{defects per unit (DPU)} = \frac{\text{number of defects}}{\text{number of units}} = \frac{40}{150} = 0.2667$$

On average, 26.67% of units contained one defect.

$$\begin{aligned} \text{defects per opportunity or DPO} &= \frac{\text{number of defects}}{\text{number of units} * \text{number of opportunities}} \\ &= \frac{40}{150 * 5} = 0.053333 \end{aligned}$$

DPO is a preliminary calculation to help calculate DPMO.

$$\begin{aligned} \text{defects per million opportunities (DPMO)} &= \text{DPO} * 1,000,000 (10^6) \\ &= 0.053333 * 1,000,000 = 53333.33 \end{aligned}$$

Having the DPMO measured, it is easy to find out at what level of sigma the process is currently running using the table in Appendix 8. In order to calculate exact level of sigma for values that are not present in the table, the following Excel formula, which offers exact calculation and is available from i Six Sigma (2008) web portal, was used: ROUND((NORMSINV(1-DPMO/1000000))+1,5;2). Calculations acquired using the formula and the calculated DPMO show that company currently operates at 3.11 sigma level when it

comes to quality of information provided for the specific case (population examined). Connections of sigma level and DPMO are visible from the Chart 15 (see p. 41). Whether company wants to achieve level of 6 sigma depends completely on the costs required to achieve it. It is obvious that additional calculations would be needed in order to provide the answer to the question what is the sigma level that is still acceptable and that can be reached having reasonable costs. Issue is further discussed and presented in goal statement. Normally, there are numerous situations in practice, where going for the level of 6 sigma can incur larger costs than benefits in the overall view. Goal statements usually cover that part by defining what is the exact level of sigma that company wants to achieve.

6.5. Analyzing the Causes

In order to provide clear problem statement, goals, constraints, form teams and assign responsibilities, a project charter is provided. Project charters can vary from project to project but should include the following base points presented for the Six Sigma project in LDC:

Problem Statement

Linea Directa Communications needs to improve quality of data from profiling actions according to customers. Problem occurs mostly in call centre departments in all countries. Gap can be observed when a comparison is being made with recorded conversations. Clients are dissatisfied with the provided data due to the results that are frequently unusual. The progress will be measured on one the one hand with comparison of results and recorded dialogues, and on the other with customer satisfaction surveys. The opportunity to correct these mistakes will result in customer satisfaction and retention providing further options for a long-term partnership.

Goal Statement

Eliminate 90% (eliminating 90% will bring company from current 3.11 sigma level to approximately level 4 sigma – for explanation see Appendix 8) of defects in quality of data from profiling actions. Goal should be reached with the lowest possible costs.

Constraints and Assumptions

Each member of the team is obliged to spend full working time for this project if that does not interfere with normal course of work. If the project proves to be more demanding, additional external consultants will be appointed in order to offer support to the team.

Team Members and Responsibilities

Initial group consists of three teams where international sales manager and international project manager are both working on the same project in three separate countries, while there is one local Project Manager for each separate country. Countries perform the same profiling project in order to evaluate the effects of the culture on the implementation of Six Sigma,

which is easily possible since all main activities are standardized to a common procedure for all LDC countries. One external consultant (Master Black Belt) for Six Sigma will be assigned in order to offer support and guidance. The management of the company will be accounted as sponsors and supporters of the team while monitoring their progress. The responsibility of all departments included in the process (database, analytics, CRM, call centre) is to offer a full support. Local project managers are accountable for a successful implementation in their country, while international sales manager and project manager are accountable for success of the project as a whole.

Preliminary Project Plan

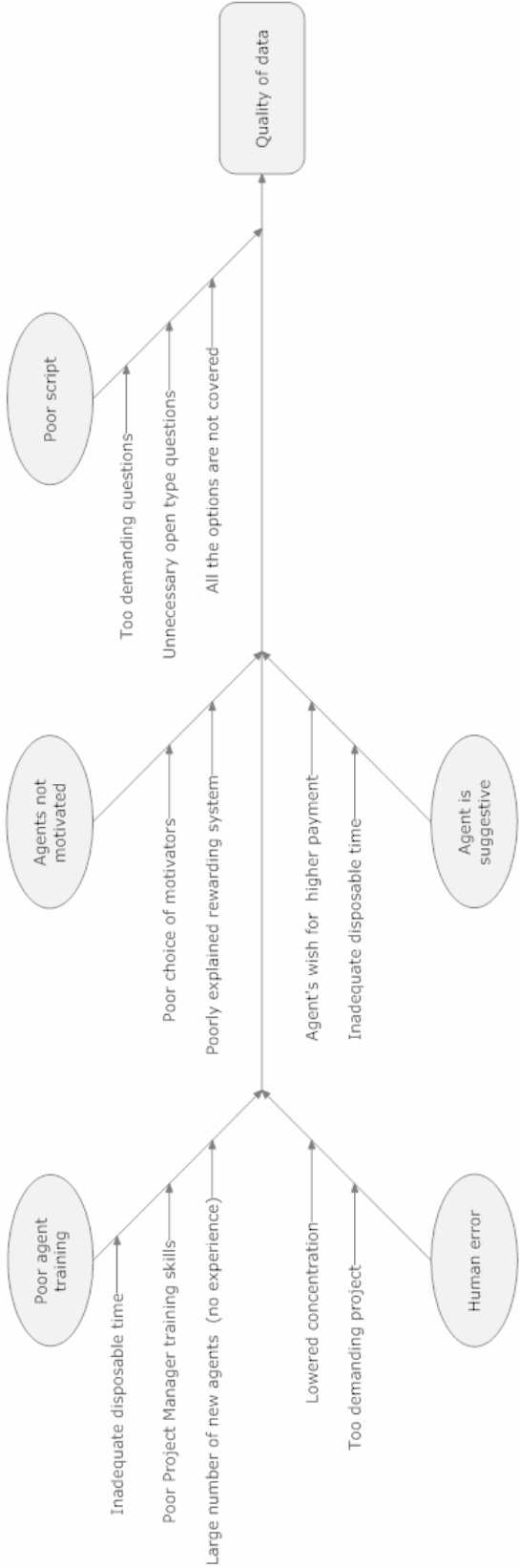
Before project start, each member of the team will have basic three day training. There is a deadline of six months for the project, while taking into consideration that this is the first Six Sigma project and will require extensive preparations. Solution should be implemented in five months, while measurable results are expected in additional two months. Each month, a team meeting will be held in order to review the progress. Meanwhile, all problems should be resolved within the team with a help of external consultant. All milestones will be carefully supervised by the top management. Additional milestones (DMAIC):

- define – 1 month,
- measure – 1 month,
- analyse – 1 month,
- improve and control – 2 months.

Using the voice of the customer and tracking results with customer surveys will assure that problem and goal are defined in order to truly relate to key customer requirements.

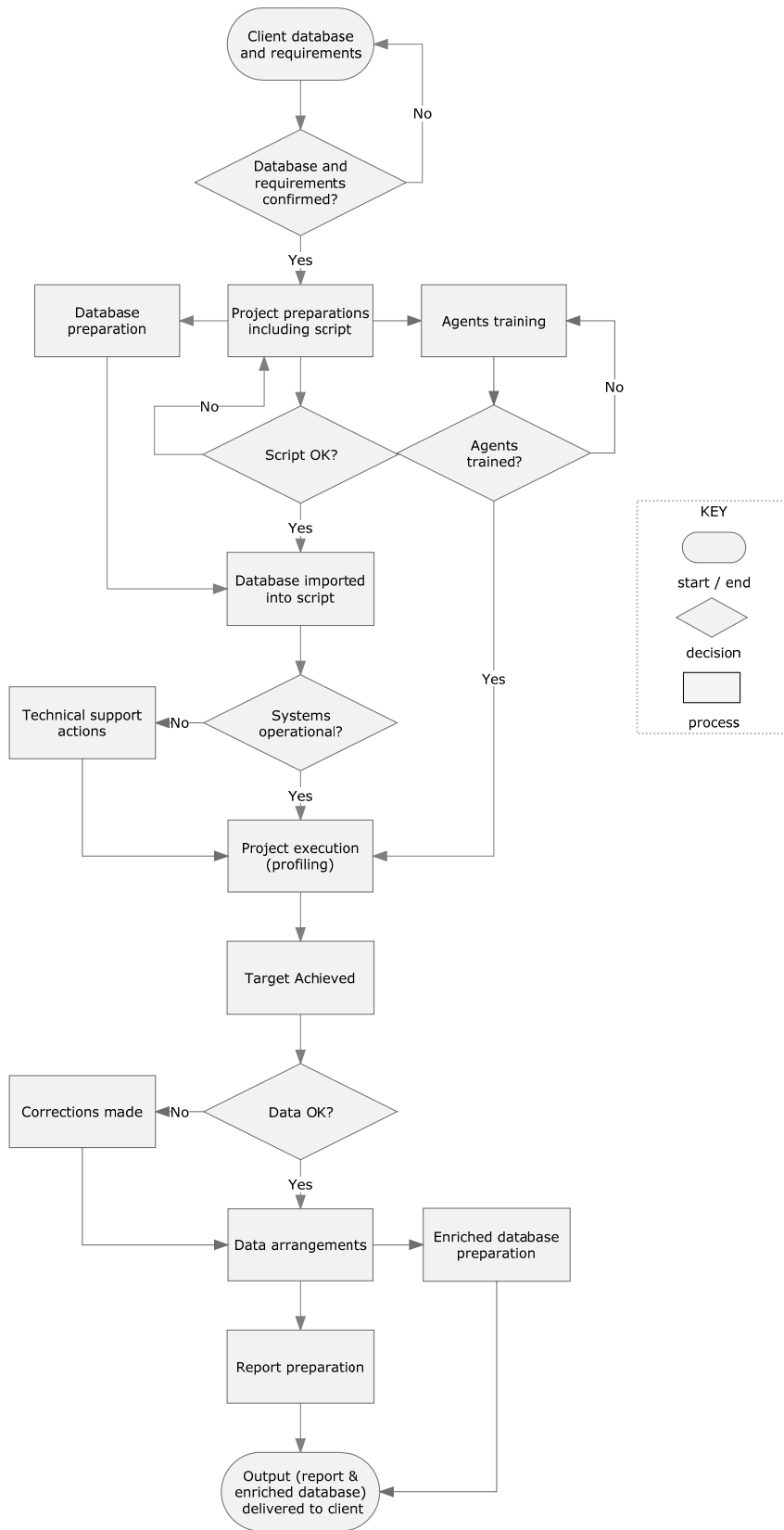
Chart 20 (see p. 67) provides the Ishikawa diagram for profiling action in LDC. Causes are listed in circles, while corresponding affects that cause them are drawn on the connecting line. Chart 21 (see p. 68) further provides detailed process description as well as gives insight into infrastructure of profiling projects. Core processes that were described in chapter 6.3.1. can also be seen in Chart 21.

Chart 20: Ishikawa Cause and Effect diagram for LDC profiling action



Source: Own

Chart 21: Process mapping for profiling in LDC



Source: Own

As explained in chapter 4.6.3., the quality of data in LDC can be presented as the following function:

quality of data

$$= f(\text{agent training} + \text{agent motivation} + \text{script} + \text{human error} + \text{agent suggestivity})$$

The best way to assess the current problem is to define exactly what counts for each of the proposed six causes. Each of the possible causes is further explained in order to provide clear understanding.

Cause 1 – Agent Training

Each time, information in the dialogue is different as in the results, and it is apparent that the agent misunderstood what should be done, was lacking experience or similar, it is counted as a defect on the account of poor training.

Cause 2 – Agent Motivation

Each time, information in the dialogue is different as in results, and it is apparent that the agent did not do his best in order to get objective answer from the customer, or acted passive, which presents a defect on the account of agent motivation. Agents can be low on account of bad choice of motivators, strength of motivators or poorly explained rewarding system.

Cause 3 – Script

Each time, information in the dialogue is different as in results, and it is apparent that the agent did everything in his power to answer the question correctly, but was unable to due to the fact that the answer he got was not available from the list of possible answers. The second option includes questions that could be formed in closed type, but are an open type of questions, so it cannot be expected from the agent to write down exactly the same answer as all the other agents when he receives one. The third option is that the script is too demanding and complicated, which affects the conversation flow and can confuse agents to such an extent that they to write wrong answers. Each of these options is considered to be a defect.

Cause 4 – Human Error

Each time, information in the dialogue is different as in results, and it is apparent that agent chose the wrong answer by mistake on the account of lowered concentration or the fact that project is so demanding that mistakes can be made quite often. Both options are counted as defect on the account of human error.

Cause 5 - Suggestivity

Each time, information acquired by suggesting or leading the person into answering the question in order to finish with the call earlier, it is counted as a defect on the account of suggestivity.

Thoroughly defined causes served as a basis for a simple checklist when examining dialogues. As already explained, out of 150 dialogues examined, 30 of them were including defects. The total number of defects was 40, out of which, at least a few unites contained more than one defect.

At the moment, no standard method of evaluation is implemented, which makes it impossible to evaluate dialogues and search for causes of defects. However, initiatives have been taken in that direction as well. At this point, an evaluation form is being prepared in order to assess problems connected to dialogues including quality of data as well as quality of the dialogue itself. Categories that are being assessed using the form are presented in Appendix 6. It is apparent that all possibilities have been covered. Quality of checklist is at a very high level, while problems might occur due to its precision, since it goes in much detail in some points. Company should be careful in order to avoid resistance of users, since it substantially changes the way of work. However, I would suggest its implementation as soon as possible in order to gain the possibility of process measurement, since dialogues are one of the rare things, that have not been defined clearly yet and are therefore hard to control. Usually, this is also the part of the processes where large amount of problems occur. As seen through the thesis, Six Sigma offers tools that can be applied to almost every category, no matter how immeasurable it might seem.

In order to examine the types of defects for the purpose of this analysis, a simple checklist was provided, which will identify the cause that is affecting quality of data the most. Checklist includes all five possible causes and clear understanding on how to determine each one of them. As seen from the Ishikawa diagram and description of causes, one of the causes is that script is not done properly. For the purpose of this example, our hypothesis will be that the quality of information depends mostly on the fact that script is poorly prepared.

H₁: Data quality depends mostly on the quality of the script

In order to prove the hypothesis or neglect it, a measurement has to be done. The nature of the problem is such, that all causes can be measured on discrete scales, which helps to simplify the process of analysis, but because of that, it sometimes gives worse or less reliable results. In order to investigate further, logical cause analysis will be used, which is based on objectivity and facts. Technique is mostly driven by the simple question which for the specific case is: “What types of defects are most common?” Table 3 shows results of the listening to the dialogues and summarizing number of each defect.

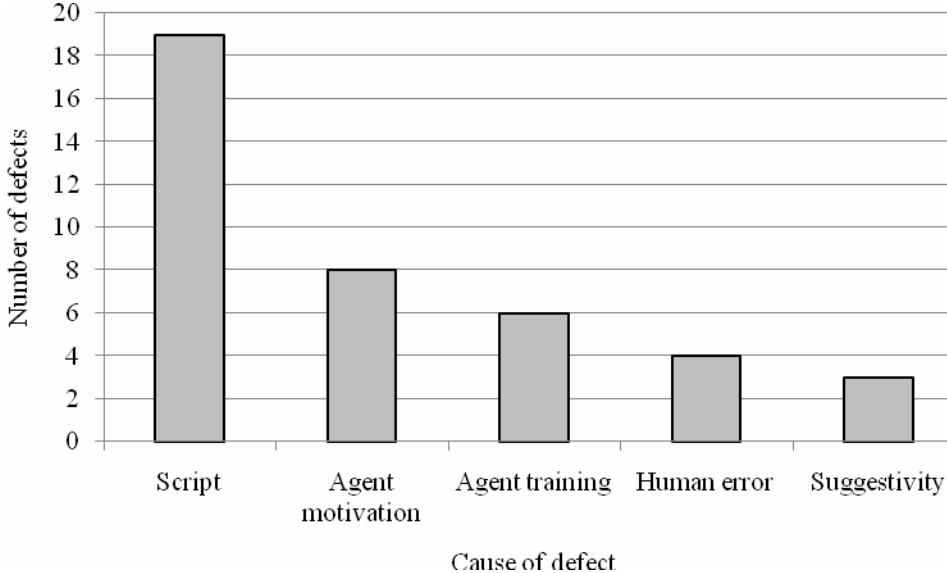
Table 3: Number of defects by cause

Cause	1	2	3	4	5
Number of defects	6	8	19	4	3

Source: Own

Causes can be analyzed with various tools that give option of visualization of the problems to be solved later. One of the commonly used methods for discrete data is visualization with Pareto chart, which is presented below and stratifies data into ascending order going from the most common defects to the least common ones.

Chart 22: Pareto chart of number of defective units by cause



Source: Own

Combining findings from logical cause analysis and visualization of the situation from Pareto chart, we can easily confirm hypothesis H₁. It is evident that in the specific case of chosen population, poorly prepared script is the main reason for the low quality of data.

6.6. Improving and Controlling

After verifying the cause through logical analysis successfully, solutions have to be generated. Usually, brainstorming techniques are used completed with solution statements. It is necessary to point out that even after reaching the final two phases, project can fail due to lack of creativity, failure to think solutions through carefully, poor implementation or organizational resistance, or any other factor. It has to be taken in account that an improvement process can last some time, so results should not be expected immediately. A final critical element of the implementation of the DMAIC is to capture the data after solution was used in order to track the impact of changes as they take effect. To sum up, expectations of improvements within LDC in general should not be too high, since the company already practices the KPI’s system, which assigns results directly to their causes. The possibility for that is caused by the measurability of all actions within processes. However, in certain cases such as the one presented, Six Sigma can be of great help.

7. Conclusion

The interest in service quality has increased substantially in recent years as evidenced by numerous books and academic papers describing the application of total quality concepts in the service sector. It is also apparent that direct marketing as a service is specific when it comes to the implementation of quality management systems. Furthermore, LDC is a company endeavouring to bring quality to life. Some efforts were more successful than the others. As William Edwards Deming said: “It does not happen all at once, there is no instant pudding”, quality management proves to be a long path to improvement. In my opinion, there are two resources that can be considered scarce and play a major role in success of quality management systems: money and people. As already explained, such initiatives give full-time jobs to many people and can present large costs. Only by satisfying these two factors, a good basis can be gained for all the discussed commitment and changes.

The thesis gives a good overview of some popular quality management systems and a solid proof that in general, quality management can be easily implemented in services. The main difference in service setting is that more effort has to be put into people since there are no tangibles. There are numerous quality management methods with Six Sigma currently appearing to be the most all-round method for assessing quality in the given situation, since it incorporates all given aspects and uses the majority of available statistical tools that are used for optimization of business processes. If the development of new services is in question, the Design for Six Sigma can be used. Whether Six Sigma should be implemented or not was not answered directly mainly because of two reasons. The first reason is that company already practices some quality initiatives, which are well adapted to the current specifics of direct marketing industry in the form of the KPI's and other solutions. Most of these methods can be considered quite successful as well, so there is no reason for change. However, numerous processes are not measured due to their nature and the fact they have not been standardized and put in written anywhere within the company. The processes that are not measured are mostly front office processes including Sales and Implementation department, while practically everything in call centres is covered by the KPI's with few exceptions as the one presented in the case study. One of the greatest minuses still appears to be the fact, that service specific (profiling actions) KPI's are not fully available. As already explained, things are moving further in that field as well.

It appears that there is not much room for measurement and Six Sigma implementation in direct marketing industry. The most important specifics of the industry is the measurability of the majority of actions and the fact that defects can be traced to its origins easily, which proves to be in conflict with two of the qualifications of the Six Sigma project. These qualifications imply that the cause of the problem should not be clearly understood as well as the optimal solution should not be apparent. The implementation of Six Sigma is therefore mainly productive in the field of structured problems that are still present in front office work,

as well as in call centres. How Six Sigma can help with one of such processes was presented throughout the case study. The second reason is that, as described, all the Six Sigma initiatives (or any other quality management methods for that matter) must be evaluated from the cost perspective.

Six Sigma should not be implemented only because of general trends; better solution provides the evaluation of implications on company's efficiency. In order to give a clear answer to that question, I propose a separate feasibility study including the study of COPQ. Since it becomes clear that the expectations from the implementation of Six Sigma to direct marketing should not be too high, financial perspective is the one that should be investigated further. If it turns out that several problems that could be assessed using Six Sigma projects are in fact incurring substantial costs, the implementation is inevitable. On the other hand, if it proves that Six Sigma would be too costly for the company, it should be avoided in order to prevent negative response from the leadership. However, I would still recommend the implementation of Six Sigma into every newly formed company as a whole (in form of a strategy), as it should be viewed as an investment in future. For newly formed companies, this becomes an obvious choice, since the costs of implementation are substantially lower and the organization can be formed on the basis of Six Sigma propositions from the beginning. Methodology proves to be very effective, as well as the tools used, not to mention the quality mindset of the employees as well as management. It is true that it is costly, but it will soon prove to be competitive advantage and a necessary prerequisite in order to compete on the market in a decade. Trends show that many things that used to be considered as a competitive edge in the past can turn into everyday feature of every company that wants to stay on the market. Fierce competition therefore forces companies to implement all available methods including Six Sigma, even if they provide minimum improvements.

Another important point that arose while writing the Master's thesis is that the company does not use any customer satisfaction questionnaire in order to find out what are the key issues that should be improved. Missing such important information or simply trying to improve things that might not matter to the customer is a waste of time. Furthermore, this fact is also the reason why the company fails to measure quality of service, since it was described, that the main prerequisite for using SERVQUAL or the gaps model is to have a system of customer satisfaction questionnaires in place, which provides the opportunity to analyze the first gap and it offers the basis for any further research of gaps as well. Anyway, this can be considered either as a minus in the past or an opportunity for the future. Time will tell how the questionnaire that was prepared for this purpose and implemented in the company while writing the thesis will affect the company in the following years. It is strongly recommended that the questionnaire is used with every project as well as analyzed in the end because of its large importance. In my opinion, this is the point where company is currently missing the largest opportunity, since the results of the questionnaire can be considered a good basis for the selections of Six Sigma project as well.

Even though the success of Six Sigma can be guaranteed only when taking in consideration all the factors described, in the end, it does not have to come to a point, where Six Sigma has to be implemented as a strategy within the whole company. Methodology offers numerous tools that can be used in project terms only in order to improve quality. This Master's thesis provides a good example as well as theoretical background, that quality issue can be assessed simply by using the methods that are already prescribed. Six Sigma can only be implemented in form of projects or could serve as guideline, since it has a wide variety of tools to offer as well as standardized approach to solve problems in form of DMAIC. Literature offering descriptions of available tools is limitless and includes simple explanation of statistics that gives any company an opportunity to improve their work. To sum up, there are two important issues that can be concluded from this Master's thesis, one of them being the necessity of the implementation of questionnaire and the other being the opportunity to implement DMAIC methodology. Since the company is doing everything possible to measure all the processes as well as it addresses quality issue on the regular basis, the only thing that appears to be missing is a prescribed methodology. On the other hand, the use of all statistical methods adopted by Six Sigma is very much advisable as well, since they improve the chances of success greatly. As Frederick Winslow Taylor wrote in his *Scientific Management* in early 1911: "Science, not rule of thumb".

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Glossary

Acceptable quality level

The maximum percentage or proportion of variant units in a lot or batch that, for the purposes of acceptance sampling, can be considered satisfactory as a process average.

Analysis of Variance (ANOVA)

Technique which subdivides the total variation of a set of data into meaningful component parts associated with specific sources of variation for the purpose of testing some hypothesis on the parameters of the model or estimating variance components.

Assignable cause

Factor which contributes to variation and which is feasible to detect and identify.

Attribute data

Data that has a set of discrete values such as yes or no.

Black Belt

A team leader, trained in DMAIC process and facilitation skills, responsible for guiding an improvement project to completion.

Benchmarking

A defined measure of productivity based on comparison to similar processes.

Cause-and-effect diagrams

Also known as a “fishbone” or “Ishikawa Diagram”; categorical brainstorming tool used for determining root-cause hypothesis and potential causes (the bones of the fish) for a specific effect (the head of the fish)

Champion

A Six Sigma leader, who recognizes, defines, assigns, and supports the successful completion of Six Sigma projects.

Charter

Team document defining the context, specifics, and plans of an improvement projects; includes business case; problem and goal statements; constraints and assumptions; roles; preliminary plan; and scope. Periodic reviews with the sponsor ensure alignment with business strategies, review, revise, refine periodically throughout the DMAIC process based on data.

Cost of poor quality

Money measures depicting the impact of problems (internal and external failures) in the process as it exists; include labour and material costs for handoffs, rework, inspection, and other non-value adding activities.

Defect

Departure of a quality characteristic from its intended level or state that occurs with a severity sufficient to cause an associated product or service not to satisfy intended normal, or reasonably foreseeable, usage requirements.

Defect opportunity

A type of potential defect on a unit of throughput (output) which is important to the customer.

Defective unit

Of product or service containing at least one defect, or having several imperfections that in combination cause the unit not to satisfy intended normal, or reasonably foreseeable, usage requirements. The word defective is appropriate for use when a unit of product or service is evaluated in terms of usage (as contrasted to conformance to specifications).

Deming Prize

Japanese version of National Quality Award.

Design for Six Sigma

Separate and emerging methodology related to traditional Six Sigma. The tools and order used in Six Sigma (DMAIC) require a process to be in place and functioning. DFSS has a different objective of determining the needs of customers and the business, and driving those needs into the product solution.

Discrete data

Any data not quantified on an infinitely divisible scale. Includes a count, proportion, or percentage of a characteristic or category.

Effectiveness

Ability to achieve the desired effect.

Efficiency

Ability to do a process at minimal cost or using the minimum of particular resources.

European Quality Award

European version of National Quality Award.

Factor

An assignable cause which may affect the responses (test results) and of which different versions (levels) are included in the experiment.

Fishbone diagrams

Ishikawa diagrams.

Game theory

Application of mathematics in strategic situations.

Green Belt

An individual who receives approximately two weeks training in the Six Sigma DMAIC methodology, analytical, problem solving and change management methods. A Green Belt is a part time Six Sigma practitioner who applies Six Sigma techniques to their local area, performing smaller-scoped projects and providing support to Black Belt projects.

Histogram

Plot of the frequency distribution in the form of rectangles whose bases are equal to the cell interval and whose areas are proportional to the frequencies.

Inbound

Telephone communication initiated by the customer.

ISO 9000

Standard and guideline used to certify organizations as competent in defining and adhering to documented processes.

Kaizen

Continuous improvement, both in general and as a Japanese quality management method.

Lower specification limit

The lowest value of characteristic that is acceptable.

Malcolm Baldrige Award

American version of National Quality Award.

Master Black Belt

An individual who has received additional training beyond Black Belt. The Master Black Belt is technical, go-to expert for technical and project issues in Six Sigma. Master Black Belts are qualified to teach and mentor other Six Sigma Belts and support Champions.

Mean

Average.

Normal distribution

The normal distribution is pattern for the distribution of a set of data which follows a bell shaped curve.

Opt-in

An opt-in policy requires a potential customer to self-select the services they wish to subscribe to, and how any information they provide may be used.

Opt-out

An opt-out policy is where an existing customer receives electronic communications—usually on the basis of a prior relationship—without providing express permission.

Outbound

Telephone communication initiated by the marketing company or any other firm.

Parameter

A constant or coefficient that describes some characteristic of a population (e.g., standard deviation, average, regression coefficient).

Pareto Chart

Quality tool based on Pareto principle; use attribute data with columns arranged in descending order, with highest occurrences shown first; uses a cumulative line to track percentages of each category/bar, which distinguishes the 20 percent of items causing 80 percent of problem.

Plan, do, check, act

The cyclical process of correcting problems created by Shewhart, promoted by Deming, and applied to all gaps and errors by kaizen.

Population

The totality of items or units of material under consideration. NOTE: The items may be units or measurements, and the population may be real or conceptual. Thus population may refer to all the items actually produced in a given day or all that might be produced if the process were to continue in-control.

Process map or flowchart

Graphic display of the process flow that shows all activities, decision points, rework loops and handoff.

Profiling

Recording a person's or company's behaviour in order to predict or assess their ability in a certain sphere or to identify a particular group of people.

Proportion defective

Fraction of units with defects; number of defective units divided by the total number of units; translate the decimal figure to a percentage.

Quality assurance

Includes activities to evaluate and improve processes, re-engineer work to eliminate unnecessary processes or steps, ensure effective communication and mutual understanding throughout the SIPOC chain, and auditing and review to ensure all processes are maintained to standard and improved. Includes quality activities outside the realm of checking and quality control. QA includes cross-departmental communication about quality, communication with vendors, redesign of the product or process to prevent error, and a variety of audit processes to make sure that work and management are being done to standards or in accordance with best practices.

Quality control

The broader meaning is synonymous with checking; the narrower meaning is Statistical Quality Control. In the broad sense including all forms of checking, ensures that outputs and processes meet requirements, that defective output is reworked or scrapped, and that all seven aspects of processes are adjusted and restored to work within tolerances. The narrow meaning refers to statistical quality control, where we test a small sample of the entire product batch and extrapolate to define qualities of the entire batch. In the broader use, quality control is synonymous with checking. It refers to all activities of review, inspection, and testing of the product or its technical process, with or without sampling and statistics.

Quality planning

Includes all early efforts to plan how error will be prevented (QC) and how quality will be managed (QA), and some of the design activities of previously part of QA. The planning that includes defining what processes are required to deliver the product to meet or exceed specifications, putting them in order by linking outputs of one process to inputs of the next, and then defining all seven aspects of each process with requirements and tolerances on all key variables, so that we can consistently produce all outputs of all processes to specification.

Regression analysis

Modelling and analysis of numerical data consisting of values of dependant variable and of one or more independent variables.

Run chart

Measurement display tool showing variation in a factor over time; indicates trends, patterns and instances of special causes of variation.

Sample

A group of units, portion of material, or observations taken from a larger collection of units, quantity of material, or observations that serves to provide information that may be used as a basis for making a decision concerning the larger quantity

Scatter plot or diagram

Graph used to show relationship or correlation between two factors or variables.

SERVQUAL

Service quality framework.

SIPOC Diagram

A visual representation of a process or system where inputs and outputs of the process are presented.

Standard deviation

A measure of the dispersion of a set of values. It can apply to a probability distribution, a random variable, a population or a multiset.

Systematic sample

A sample gathered in a patterned, non-random way.

TRIZ

The Russian acronym for Theory of Inventive Problem Solving, a technique that attempts to define a specific problem as a system and identify elements in the system that need correction to reach the desired solution.

Voice of the customer

Data (complaints, surveys, comments, market research, etc.) representing the views/needs of a company's customers.

Yield

Total number of units handled correctly through the process steps.

Up-sell

Up-selling is a sales technique whereby a salesman attempts to have the customer purchase a larger number of the ordered items in an attempt to make a more profitable sale.

Upper control limit

The highest value of characteristic that is acceptable.

Abbreviations

B2B:	Business-to-business
B2C:	Business-to-customer
CMC:	Customer Management Centre
COPQ:	Costs Of Poor Quality
CRM:	Customer Relations Management
CTI:	Computer Telephony Integration
CTQ:	Critical To Quality
CWQC:	Company Wide Quality Control
DFSS:	Design For Six Sigma
DMA:	Direct Marketing Association
DMAIC:	Define, Measure, Analyze, Improve, Control
DPMO:	Defects Per Million Opportunities
DPO:	Defects Per Opportunity
DPU:	Defects Per Unit
EQA:	European Quality Award
FMCG:	Fast Moving Consumer Goods
ISO:	International Organization for Standardization
IVR:	Interactive Voice Response
KPI:	Key Performance Indicator
LDC:	Linea Directa Communications
LSL:	Lower Specification Limit
NPV:	Net Present Value
NQA:	National Quality Award
PDCA:	Plan, Do, Check, Act
PPI:	Pareto Priority Index
QA:	Quality Assurance
QC:	Quality Control
QP:	Quality Planning
R-F-M:	Recency, Frequency, Monetary amount
SIPOC:	Suppliers, Inputs, Process, Outputs, Customers
SMS:	Short Message Service
SPC:	Statistical Process Control
SQL:	Structured Query Language
TQM:	Total Quality Management
USL:	Upper Specification Limit

Appendices

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Appendix 1: LDC customer satisfaction questionnaire

I heard for LDC from:

- Internet
- Conference
- Sales person contact
- Recommendation
- Expo
- Other (note down)

I decided for LDC on the account of (multiple choice):

- Good offer
- Good price
- Good reputation
- Sales person convinced me
- Database available from LDC site
- Complexity of service
- Good CRM tool
- International experience
- Geographical presence
- Other (note down)

Tangibles (1 = Strongly disagree, 7 = Strongly agree)

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| I find facilities of LDC appealing | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I find LDC internet site appealing | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I think all required information is available from LDC internet site | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I am satisfied with LDC CRM software | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I am satisfied with the final report of the campaign | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Reliability (1 = Strongly disagree, 7 = Strongly agree)

- | | | | | | | | |
|---|---|---|---|---|---|---|---|
| I am satisfied with deadlines being met | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I am satisfied with the final costs of the campaign | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I am satisfied with precise and exact execution of the campaign | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I am satisfied with the results of the campaign | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Responsiveness (1 = Strongly disagree, 7 = Strongly agree)

- | | | | | | | | |
|---|---|---|---|---|---|---|---|
| I am satisfied with availability of LDC personnel | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I am satisfied with LDC personnel's willingness to help | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I am satisfied with fast response of LDC personnel | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Assurance (1 = Strongly disagree, 7 = Strongly agree)

I find LDC personnel experienced	1	2	3	4	5	6	7
I find LDC personnel contributory – ideas contributed to the success of campaign	1	2	3	4	5	6	7
I find LDC personnel professional	1	2	3	4	5	6	7

Empathy (1 = Strongly disagree, 7 = Strongly agree)

I find LDC personnel kind and caring	1	2	3	4	5	6	7
I find LDC to be flexible in meeting my requirements	1	2	3	4	5	6	7

Rate the following categories according to their importance (rating with numbers from 1 to 9 – 1 being the most important category and 9 the least)

- Quality of information
- Quality of conversation
- Conformance to agreed costs
- Conformance to agreed deadline
- High ratio of processed database
- Report quality
- Further consultancy for data use
- Flexibility of campaign
- Regional coverage

Appendix 2: Six Sigma deployment (Pyzdek, 2003, p. 32)

1. Deployment goals
 - 1.1. Business level
 - 1.1.1. Increase shareholder value
 - 1.1.2. Increase revenues
 - 1.1.3. Improve market share
 - 1.1.4. Increase profitability and ROI
 - 1.2. Operations level
 - 1.2.1. Eliminate “hidden factory” (i.e., resources used because things were not done right the first time)
 - 1.2.2. Improve rolled throughput yield and normalized yield
 - 1.2.3. Reduce labour costs
 - 1.2.4. Reduce material costs
 - 1.3. Process level
 - 1.3.1. Improve cycle time
 - 1.3.2. Reduce resource requirements
 - 1.3.3. Improve output volume
 - 1.3.4. Improve process yield (ratio of inputs to outputs)
 - 1.3.5. Reduce defects
 - 1.3.6. Reduce variability
 - 1.3.7. Improve process capability
2. Identify key value streams
 - 2.1. Which processes are critical to business performance?
 - 2.2. How do processes deliver value to customers?
3. Determine metrics and current performance levels
 - 3.1. How will we measure key value streams?
 - 3.2. Are our measurements valid, accurate, and reliable?
 - 3.3. Are the processes stable (i.e., in statistical control)?
 - 3.3.1. If not, why not?
 - 3.3.2. What are the typical cycle times, costs, and quality opportunities of these processes?
 - 3.3.3. What is the short- and long-term process capability?
 - 3.4. Detailed as-is and should-be process maps for critical processes
 - 3.5. How does current performance relate to benchmark or best-in-class performance?

4. Breakthrough to new performance levels
 - 4.1. Which variables make the most difference?
 - 4.2. What are the best settings for these variables?
 - 4.3. Can the process be redesigned to become more robust?
 - 4.4. Can product be redesigned to become more robust and/or more easily produced?

5. Standardize on new approach
 - 5.1. Write procedures describing how to operate the new process
 - 5.2. Train people in the new approach
 - 5.3. When necessary, use SPC to control process variation
 - 5.4. Modify inventory, cost accounting, and other business systems to assure that improved process performance is reflected in bids, order quantities, inventory trigger points, etc.

Appendix 3: Six Sigma roles and responsibilities (Pyzdek, 2003, p. 39)

Responsible Entity	Roles	Responsibilities
Executive Six Sigma Council	Strategic leadership	<ul style="list-style-type: none"> • Ensures Six Sigma goals are linked to enterprise goals • Develops new policies as required • Aligns process excellence efforts across the organization • Suggests high-impact projects • Approves project selection strategy
	Assures progress	<ul style="list-style-type: none"> • Provides resources • Tracks and controls progress toward goals • Reviews improvement teams' results (BB, GB, Lean, Supply Chain, other) • Reviews effectiveness of Six Sigma deployment: systems, processes, infrastructure, etc.
	Cultural transformation	<ul style="list-style-type: none"> • Communicates vision • Removes formal and informal barriers • Commissions modification of compensation, incentive, reward and recognition systems
Director, Six Sigma	Manages Six Sigma infrastructure and resources	<ul style="list-style-type: none"> • Six Sigma champion for ACME • Develops Enterprise Six Sigma deployment • Owns the Six Sigma project selection and prioritization process for ACME • Assures Six Sigma strategies and projects are linked through quality function deployment to business plans • Achieves defect reduction and cost take-out targets through Six Sigma activities • Member of Executive Six Sigma Council • Leads and evaluates the performance of Black Belts and Master Black Belts • Communicates Six Sigma progress with customers, suppliers and the enterprise

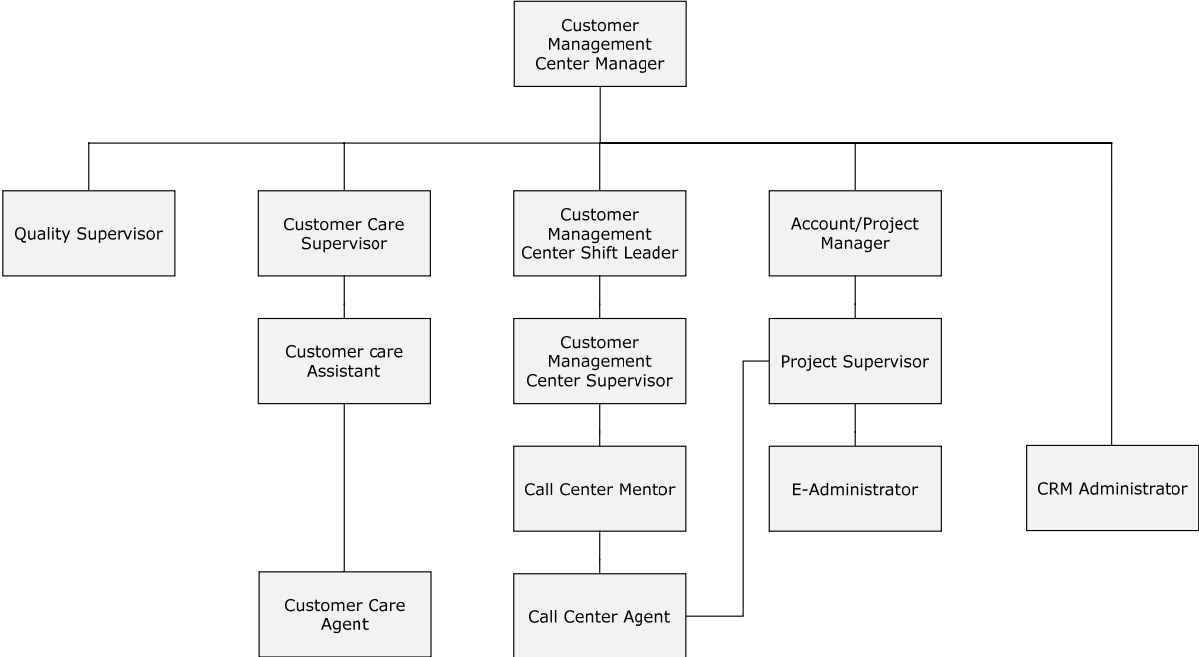
Responsible Entity	Roles	Responsibilities
		<ul style="list-style-type: none"> • Champions Six Sigma reward and recognition, as appropriate
Six Sigma Certification Board	<p>Certifies Black Belts</p> <p>Board representatives include Master Black Belts and key Six Sigma leaders</p>	<ul style="list-style-type: none"> • Works with local units to customize Black Belt and Green Belt requirements to fit business needs • Develops and implements systems for certifying Black Belts and Green Belts • Certifies Black Belts
Six Sigma Core Team	<p>Cross-functional Six Sigma team</p> <p>Part-time change agent</p>	<ul style="list-style-type: none"> • Provides input into policies and procedures for successful implementation of Six Sigma across ACME • Facilitates Six Sigma activities such as training, special recognition events, Black Belt testing, etc.
Master Black Belt	<p>Enterprise Six Sigma expert</p> <p>Permanent full-time change agent</p> <p>Certified Black Belt with additional specialized skills or experience especially useful in deployment of Six Sigma across the enterprise</p>	<ul style="list-style-type: none"> • Highly proficient in using Six Sigma methodology to achieve tangible business results • Technical expert beyond Black Belt level on one or more aspects of process improvement (e.g., advanced statistical analysis, project management, communications, program administration, teaching, project coaching) • Identifies high-leverage opportunities for applying the Six Sigma approach across the enterprise • Basic Black Belt training • Green Belt training • Coach/Mentor Black Belts • Participates on ACME Six Sigma Certification Board to certify Black Belts and Green Belts

Responsible Entity	Roles	Responsibilities
Black Belt	<p>Six Sigma technical expert</p> <p>Temporary, full-time change agent (will return to other duties after completing a two to three year tour of duty as a Black Belt)</p>	<ul style="list-style-type: none"> • Leads business process improvement projects where Six Sigma approach is indicated • Successfully completes high-impact projects that result in tangible benefits to the enterprise • Demonstrated mastery of Black Belt body of knowledge • Demonstrated proficiency at achieving results through the application of the Six Sigma approach • Internal Process Improvement Consultant for functional areas • Coach/Mentor Green Belts • Recommends Green Belts for Certification
Green Belt	<p>Six Sigma project originator</p> <p>Six Sigma project leader</p> <p>Part-time Six Sigma change agent. Continues to perform normal duties while participating on Six Sigma project teams</p> <p>Six Sigma champion in local area</p>	<ul style="list-style-type: none"> • Demonstrated mastery of Green Belt body of knowledge • Demonstrated proficiency at achieving results through the application of the Six Sigma approach • Recommends Six Sigma projects • Participates on Six Sigma project teams • Leads Six Sigma teams in local improvement projects • Works closely with other continuous improvement leaders to apply formal data analysis approaches to projects • Teaches local teams, shares knowledge of Six Sigma • Successful completion of at least one Six Sigma project every 12 months to maintain their Green Belt certification
Six Sigma Improvement Team	Primary ACME vehicle for achieving Six Sigma improvements	<ul style="list-style-type: none"> • Completes chartered Six Sigma projects that deliver tangible results • Identifies Six Sigma project candidates

Responsible Entity	Roles	Responsibilities
ACME Leaders and Managers	Champions for Six Sigma	<ul style="list-style-type: none"> • Ensures flow-down and follow-through on goals and strategies within their organizations • Plans improvement projects • Charters or champions chartering process • Identifies teams or individuals required to facilitate Six Sigma deployment • Integrates Six Sigma with performance appraisal process by identifying measurable Six Sigma goals/objectives/results • Identifies, sponsors and directs Six Sigma projects • Holds regular project reviews in accordance with project charters • Includes Six Sigma requirements in expense and capital budgets • Identifies and removes organizational and cultural barriers to Six Sigma success • Rewards and recognizes team and individual accomplishments (formally and informally) • Communicates leadership vision • Monitors and reports Six Sigma progress • Validates Six Sigma project results • Nominates highly qualified Black Belt and/or Green Belt candidates
Project Sponsor	Charter and support Six Sigma project teams	<ul style="list-style-type: none"> • Sponsor is ultimately responsible for the success of sponsored projects • Actively participates in projects • Assures adequate resources are provided for project

Responsible Entity	Roles	Responsibilities
		<ul style="list-style-type: none"> • Personal review of progress • Identifies and overcomes barriers and issues • Evaluates and accepts deliverable
<p>“Matrixed” Project Manager</p>	<p>Manages Six Sigma resources dedicated to a particular area (e.g., teams of Black Belts on special assignment)</p> <p>Champions Six Sigma Black Belt team</p>	<ul style="list-style-type: none"> • Provides day-to-day direction for Six Sigma project Black Belt and team activities • Provides local administrative support, facilities, and materials • Conducts periodic reviews of projects • Provides input on Black Belt performance appraisals • Makes/implements decisions based on recommendations of Six Sigma Black Belts
<p>Six Sigma Improvement Team Member</p>	<p>Learns and applies Six Sigma tools to projects</p>	<ul style="list-style-type: none"> • Actively participates in team tasks • Communicates well with other team members • Demonstrates basic improvement tool knowledge • Accepts and executes assignments as determined by team

Appendix 4: Organizational chart of Linea Directa Communications (local level)



Appendix 5: KPI's

KPI	Definition	Metric	Description
Service level	The percentage of calls from the pilot that have obtained a reply within a time below a certain duration (10 seconds)	Number of answered calls within 10 sec divided by number of served inbound calls	Recommended SL for Inbound calls related to Info = 80%-90% and for Inbound calls related to sell = 90%-100%. We could use for customer support 80%-90% and for contact centre 90%-100%
Conversion rate II	It is the ratio between inbound orders and served calls.	Number of inbound orders divided by number of served calls	i) Percentage of served calls we converted into order/purchase. ii) Conversion rate should be as high as possible = every caller is a potential client = we are trying to convert as much callers as possible into buyers
Efficiency	Percentage of the number of calls served as regards of number of Inbound calls	Number of served calls divided by number of Inbound calls.	Efficiency level shows us how effective CMC is as regards of answering calls (lost call = lost potential buyer = lost money)
Cross-sell ratio (value by marked)	It shows the cross-sell value of products which are marked as cross-sell in Cat Pro out of the value of all products	Value of marked cross products divided by value of all products	It shows how much extra sell can make your contact centre
Cross-sell ratio (quantity by marked)	It shows the cross-sell quantity of products which are marked as cross-sell in Cat Pro out of the quantity of all products	Quantity of marked cross products divided by quantity of all products	It shows how much extra sell can make your contact centre
Cross-sell ratio (value by position)	It shows the cross-sell value of products by position out of the value of all products	Value of products on 2 nd and higher position divided by value of all products	It shows how much extra sell can make your contact centre
Cross-sell ratio (quantity by position)	It shows the cross-sell quantity of products by position out of the quantity of all products	Quantity of products on 2 nd and higher position divided by quantity of all products	It shows how much extra sell can make your contact centre

KPI	Definition	Metric	Description
Cancellation	Number of cancellations out of the orders	Number of cancellations divided by number of valid order forms	Number of cancellations out of the orders
Rejected ratio	It shows the ratio of complaints value (rejected) out of the invoice value. Note: Invoice date are not counted for this KPI measurement but time period	Number of complaints in time period (not by the invoice date but in time period) divided by number of invoices in time period	This gives us information how many products were rejected in comparison to issued invoice in the same time period
Returned ratio	It shows the ratio of complaints value (returned) out of the invoice value. Note: invoice date are not counted for this KPI measurement but time period	Complaints quantity in time period (not by the invoice date) divided by invoice quantity in time period	This gives us information how many products were returned in comparison to issued invoice in the same time period
Cross-sell ratio (Average Value)	Average cross-sell value between cross products on orders sorted by order position and cross products on orders sorted by value position		It shows how much extra sell can make your contact centre
Cross-sell ratio (average quantity)	Average cross-sell quantity between cross products on orders sorted by order position and cross products on orders sorted by value position.		It shows how much extra sell can make your contact centre
Average speed of answer	Average amount of time customers waited in queue before an agent greeted them	Number of waiting time divided by number of Inbound calls	It shows amount of time customers waiting is queue to get connected to a agent. It will help us to measure the efficiency of the contact centre
Abandon calls/hour	Number of inbound calls that were abandon within the system after a specific period of time after waiting in the queue.	Number of abandon calls in open state (call centre working hours) divided by number of inbound hours.	It shows number of abandon calls from the total incoming calls per hour

KPI	Definition	Metric	Description
Prank calls	Percentage of unserious calls	Number of prank calls contact divided by all contacts	Prank calls are decreasing the conversion rate and percentage of prank calls is higher when toll free number is in use
Complaints ratio	It shows the ratio of complaints value (returned + rejected) out of the Invoice value. Note: Invoice date are counted for this KPI measurement	Complaints value (returned + rejected) in EUR divided by Invoice value in EUR	This gives us information how many products were rejected or returned in comparison to issued invoice in the same time period
Seat utilization	It is the ratio between working hours and equipped seats.	Sum of inbound and outbound hours during the week days divided by (working days multiple equipped seats and calculated opening hours).	Calculated opening hours per country are: ROM - 10, RUS - 18, others - 12 hours
Talk time utilization	It is the ratio between talk time and working hours on inbound and outbound	Total talk time divided by sum of inbound and outbound activity.	
Conversion rate I	It is the ratio between orders and inserted contacts without unserious contacts (Prank calls)	Number of orders divided by number of contacts	Countries with low percentage are usually inserting only contacts with customer makes a purchase but we have to insert every contact not just orders
Orders / hour	Average number of orders inserted by an agent in a period of one hour	Number of orders (DRTV + print) divided by number of inbound hours.	i) How good do you plan your agents from cost monitoring point of view. ii) How much they sell per hour. iii) You can also reduce your cost according to this data
First call resolution	It shows the percentage of customer inquiries completed on the first attempt.	Number of contacts which have time of entering and time of last change within 5 minutes divided by all contacts	Benefits of measurement of FCR are: improvement in customer satisfaction and with this measurement it will be easy to trace the time period in which most of the customers are reachable and that will lead to save more time in which agent is making

KPI	Definition	Metric	Description
Call resolution time	It shows the average time needed for solving the contact.	Sum of all time difference between contact insertion and contact solution divided by number of contacts	
Average handling time	It is defined as average duration of a call (from answering to ring off)	Sum of inbound call handling time (talk + wrap + hold) divided by the number of inbound calls	It will help us to monitor the efficiency of the new agents as new agents take longer time to handle calls
Cost per call	It provides information about the expenses associated with each customer call (inbound and outbound calls)		
Cost per inbound call	It provides information about the expenses associated with each customer inbound call		
Cost per outbound call	It provides information about the expenses associated with each customer outbound call		
Cost per contact	It provides information about the expenses associated with each contact		
Cost per order	It provides information about the expenses associated with each order		
Cross efficiency	It shows the efficiency of the agents in cross sell	Total rewards for cross sell / total cross sell value	
Cost per parcel	It provides information about the expenses associated with each parcel		
Cost per product	It provides information about the expenses associated with each product		
Inbound	It shows the percentage of inbound activity in total working time		

KPI	Definition	Metric	Description
Inbound EF	It shows how many calls on average we have received per inbound hour		
Outbound	It shows the percentage of outbound activity in total working time		
Outbound EF	It shows how many calls on average we have made in outbound hour		
Supervising	It shows the percentage of supervising activity in total working time		
Supervising EF	It shows ratio between number of agents and number of supervisors		
Project management	It shows the percentage of all project management activities in total working time		
Customer care	It shows the percentage of all customer care activities in total working time		
Complaint solving EF	It shows average complaints quantity handled in an hour		
Fulfilment	It shows the percentage of all warehouse activities in total working time		
Education	It shows the percentage of activities connected with education in total working time		
Other activities	It shows the percentage of inbound activity in total working time		
Warehouse efficiency	Percentage of goods flow (warehouse in and out) regarding the working hours in warehouse department		
Stock turn rate	Percentage of number of products exiting the warehouse comparing with average stock of products		

KPI	Definition	Metric	Description
Product packaging efficiency	Percentage of number of packed products packed per hour in packing department		
Parcel packaging efficiency	Percentage of number of packed parcels packed per hour in packing department		
Reclamation efficiency	Percentage of number of received products in reclamation per working hour in reclamation department		
Reactivation of returned product	Percentage of the number of returned and serviced products that can be sold again (on main stock) regarding the total number of returned products		
Other activity efficiency	Percentage of the goods flow in warehouse (warehouse in and out) regarding the time spent for other activities (administration, control, ...)		

Appendix 6: Dialogue evaluation form

Greeting

Correct introduction

Polite phrase / establishing interest

Need analysis: listen, question, talk

Phrases show active listening

Logical conversation flow

Leading client through the dialog

Showing empathy & understanding

Need analyses / proper questions

Convenient use of question techniques

Need solution: sale / service

Connecting client needs & solutions

Presenting benefits to satisfy needs

Basic Product / Service explanation

Need solution upgrade: sale / service

Connecting needs to advanced solutions

Revealing benefits to perfectly satisfy needs

Cross Product / Service explanation & advising

Special benefits offer: savings, discounts, warranty

Getting agreement on extra offer

Closing the dialogue

Agreement / deal overlook: products, payment, delivery, timing

Positive; praise & greeting no matter the result

Language

Quality language standard use

Trust building language

Illustrative language

Sales phrases (cost VS investment ...)

Pronouncing important claims of satisfaction

Proper tone & voice selection: stimulating, interested, not too loud/silent

Proper language speed

General

Using client's name & surname

Professional telephone manners

External conversation interferences

Gather obligatory client data / payment data

Personal data use / new business contact asking

Appendix 7: Script sample

Question 1 Introduction

Good morning/afternoon! My name is _____ (name and surname). I'm calling from Linea Directa on behalf of XXXXX which constructs industrial park in XXXXX region and intends to organize a presentation of the project for potential foreign companies that are thinking of establishing production, logistical or warehouse facilities in Russia. We are looking for foreign production companies that are doing business in Russia and could potentially set the production there. Do you classify yourself as this type of company?

Agent should read the presentation of the company on the training. In the case if client will ask them what this firm is doing, agent should be able to explain.

1. Yes	Next Q2
2. No	Close dialogue – Next Q8
3. Refuse to cooperate	Close dialogue – Next Q8

Question 2

We have received your company contacts from Russian trade chamber in Moscow. To make sure that we have the updated information I would like to check the correctness of these data.

1. Yes	Next Q3
2. No	Close dialogue – Next Q8
3. Refuse to cooperate	Close dialogue – Next Q8

Question 3 Contacts checking

Agent will check following data in partner mask:

- company name,
- address,
- city,
- zip code,
- fax number.

Agent should write down the answer in UPPER CASE LETTERS. The fax number should be written down without – ()

1. Data checked	Next Q4
2. Refuse to answer	Next Q4

3. Refuse to cooperate	Close dialogue – Next Q9
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Question 4 Contact person – CEO, commercial manager, financial manager

Could you please tell me the name of CEO or commercial manager in your company with intention to send him an invitation to the conference where this project will be presented?

Answer should be written down in UPPER CASE LETTERS.

1. Free text for name and surname	Next Q6
2. Refuse to answer	Close dialogue – Next Q5
3. Refuse to cooperate	Close dialogue – Next Q8

Question 5 Other person responsible for these questions?

Could you please recommend some other person who is responsible for investment and expansion of the company?

Answer should be written down in UPPER CASE LETTERS.

1. Free text for name and surname	Next Q6
2. Refuse to answer	Close dialogue – Next Q8
3. Refuse to cooperate	Close dialogue – Next Q8

Question 6 Transfer to person

I would like to thank you for your cooperation. Would you be so kind and transfer me to this person?

1. Yes	Next Q7
2. No	Close dialogue – Next Q8
3. Refuse to answer	Close dialogue – Next Q8
4. Refuse to cooperate	Close dialogue – Next Q8

Question 7 Invitation

Good morning/afternoon! My name is _____ (name and surname). I'm calling from Linea Directa on behalf of XXXXX which constructs industrial park in XXXXX region and intends to organize a presentation of the project for potential foreign companies that are thinking of establishing production, logistical or warehouse facilities in Russia. We are looking for foreign production companies that are doing business in Russia and could

potentially set the production there. In following days you will receive the invitation to this event in Moscow, where this project and specifics of industrial construction will be presented. To see if you will be interested to attend the presentation, we will call you again few days after you received the invitation.

Agent should read the presentation of the company on the training. In the case if client will ask them what this firm is doing, agent should be able to explain.

1. Close dialogue	Close dialogue – Next Q8
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Question 8 Close dialogue

Thank you for your time. I wish you a nice day.

Appendix 8: Table for yield, sigma and DPMO calculation (i Six Sigma, 2008)

Yield %	Sigma	Defects Per Million Opportunities
99.9997	6.00	3.4
99.9995	5.92	5
99.9992	5.81	8
99.9990	5.76	10
99.9980	5.61	20
99.9970	5.51	30
99.9960	5.44	40
99.9930	5.31	70
99.9900	5.22	100
99.9850	5.12	150
99.9770	5.00	230
99.9670	4.91	330
99.9520	4.80	480
99.9320	4.70	680
99.9040	4.60	960
99.8650	4.50	1350
99.8140	4.40	1860
99.7450	4.30	2550
99.6540	4.20	3460
99.5340	4.10	4660
99.3790	4.00	6210
99.1810	3.90	8190
98.9300	3.80	10700
98.6100	3.70	13900
98.2200	3.60	17800
97.7300	3.50	22700
97.1300	3.40	28700
96.4100	3.30	35900
95.5400	3.20	44600
94.5200	3.10	54800
93.3200	3.00	66800
91.9200	2.90	80800
90.3200	2.80	96800
88.5000	2.70	115000
86.5000	2.60	135000
84.2000	2.50	158000
81.6000	2.40	184000

78.8000	2.30	212000
75.8000	2.20	242000
72.6000	2.10	274000
69.2000	2.00	308000
65.6000	1.90	344000
61.8000	1.80	382000
58.0000	1.70	420000
54.0000	1.60	460000
50.0000	1.50	500000
46.0000	1.40	540000
43.0000	1.32	570000
39.0000	1.22	610000
35.0000	1.11	650000
31.0000	1.00	690000
28.0000	0.92	720000
25.0000	0.83	750000
22.0000	0.73	780000
19.0000	0.62	810000
16.0000	0.51	840000
14.0000	0.42	860000
12.0000	0.33	880000
10.0000	0.22	900000
8.0000	0.09	920000

