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Proposed Standards and Best Practices for Technological Infrastructure at Contact Centers in the Dominican Republic

By

Patricia Ortiz Suárez

Thesis submitted in partial fulfillment of the requirements
for the degree of
Master of Science in
Computer Security and Information Assurance

Rochester Institute of Technology

**B. Thomas Golisano College
of
Computing and Information Sciences**

April 22nd, 2010

Rochester Institute of Technology
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**Proposed Standards and Best Practices for
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Centers in the Dominican Republic**

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Contents

Abstract.....	7
Introduction	8
Problem.....	10
Problem Statement.....	10
Contact Center, Customer Contact Center or Call Center	10
Client versus customer.....	10
Motivation of Study	11
Significance and Benefit.....	11
Literature Review	12
ISO 27001 and COPC	12
Studies related to Contact Centers in the Dominican Republic.....	12
Domain Model	13
Standards	13
Domain Model for a Contact Center dedicated to Service Outsourcing	14
Contact Center General Diagram for Project Outsourcing	14
Key process for Human Resources within the Contact Center:.....	15
Recruitment process	16
Selection process	17
Hiring process.....	17
Key processes for Training within the Contact Center	17
Trainers	19
Training methodologies	19
Training tools	19
Training locations.....	19
The training cycle	20
Key components for Operations within the Contact Center	20
Types of services	22
Operations Objectives.....	22
Human Resources within Operations	23
Key components for Information Technology within the Contact Center	23

Information Technology needs identified within the Domain Model	26
Contact Center Technology 101.....	27
Call handling Operations.....	27
Outbound Operations	27
Inbound Operations	29
Back Office Operations	31
Business Process Outsourcing Operations.....	32
Quality Assurance Operations	32
Workforce Management Operations.....	33
Reasons to outsource processes to a Contact Center	33
Information Technology Challenges faced by Contact Centers in the Dominican Republic	34
Telecommunication cost in the Dominican Republic is high	34
Telecommunication Taxes means a high installation and monthly recurring cost	36
Cost of electricity is high	37
The support escalation matrix for service providers and vendors does not always adapt to Contact Center needs.....	37
Different ISPs or Carriers sharing the same lines.....	38
International Line Services setup takes a long time.	40
Not enough IT trained professionals in the Contact Center area.....	40
On-site and off-site storage limitations	41
VoIP through the Internet is not a good idea	41
Human Resources and Payroll systems needs to be adapted to Contact Center Needs	42
Proposed Standards and Best Practices for Technological Infrastructures at Contact Centers in the Dominican Republic	43
Standards	43
1. Contact Center Operations	43
2. Customers' Information	44
3. Contact Center Software.....	45
4. Contact Center's equipment	45
5. Contact Center Services	46
6. Service providers and vendors for the Contact Center.....	46
7. Quality Assurance and Workforce Management.....	47

8. Electricity.....	47
9. Information Technology Department and Personnel.....	47
Best Practices	47
1. General.....	48
2. Operations and Training	48
3. Contact Center's equipment	48
4. Useful subscriptions.....	48
5. Information Technology.....	48
6. Software.....	48
7. Electricity.....	49
Conclusion.....	50
Appendix A: Interviews (or Contact Center questionnaire).....	51
Interviewee's Profiles.....	51
Questionnaire	52
Appendix B: Technological Checklist for Contact Centers	61
Appendix C: New Campaigns Setup Formulary.	63
Appendix D: Definitions	68
Bibliography	80

Abstract

The Contact Center industry in the Dominican Republic has experienced a considerable and fast growth in the last years. The main focus of this industry has been offering services to companies located outside the country. One notorious problem is the lack of written documentation in regards to general requirements needed to set up a Contact Center in the territory.

The objective of this research is the presentation of a set of proposed standards and best practices for requirements of Technological Infrastructure for Contact Centers located in the Dominican Republic. These standards and best practices have been developed considering the needs identified within a Contact Center domain model, which was developed for this project. Other factors that were taken into consideration are the technological requirements for the operations of the Contact Center, the reasons why clients outsource their services and the technological challenges faced by Dominican Contact Centers that influence operations from a technological point of view.

Introduction

The Dominican Republic has experienced big changes in the technological sector within the last years. Santo Domingo, capital city of the Dominican Republic, is home of NAP del Caribe. This is a specialized data center [1] that started operating in the last quarter of 2008. El NAP del Caribe places the country in an extremely favorable position in regards to worldwide connectivity. It is also expected to impact, not only the way telecommunications are handled, but also the costs of telecommunication services. It has been estimated that with the NAP del Caribe, the cost of telecommunications could be considerable reduced. There have been a positive evolution and fast grow [2] of technology and telecommunications in Dominican Republic. This progress has been one of the incentives for expansion of businesses in different areas like the Contact Center industry.

Currently (2009), about 63 Contact Centers [3] operate in the Dominican Republic. These centers mainly operate in Santo Domingo and Santiago. The industry continues to grow because the country offers attractive conditions [1] for the development of the sector, such as geographical location, human resources, and technological infrastructure. During 2006, it was estimated that the call center industry was going to provide more than 30,000 jobs for the Dominicans. In 2008 Eddy Martinez, director of the CEI-RD (Centro de Exportación e Inversión de la República Dominicana - Center for Export and Investment of the Dominican Republic) affirmed that call centers were already generating jobs for 25,000 people [4]. The same institution estimates that call centers will continue to growth within the next years [5]. In the period of 2003-2009 the sector revealed an increase of 490%. This means that from eleven (11) Contact Centers that existed by 2003 it increased to sixty five (65) Contact Centers by February 2009 [6]. The vast majority of Contact Centers in the Dominican Republic serve corporations outside the country; their main target is to provide service outsourcing.

However, the Dominican Republic is not the only country exploring this relative new area of services. Countries like India, Philippines, Panama, Costa Rica, Jamaica, Mexico and El Salvador are also attractive opponents in the outsourcing market. Factors such as costs of operations, quality of labor force, education and training, political issues [7] and the facilities offered from one country to another will determine the election of one country over the other. There are also other considerations, which are equally important, at the moment of choosing an outsource business associate. One of these considerations is security. Depending on the type of operations that an organization performs, there is a need for different security levels. Also, offering a sense of reliability and confidence to partners is a critical and determinant cause to make a decision. That is why it is so important to meet certain requirements to be considered as a valid alternative.

Despite the fast growth that has been experienced by this sector in Dominican Republic - and probably as a direct consequence of that same rapid growth - there are no general applicable policies, best practices, standards and/or guidelines to regulate the operations and security of Contact Centers. There is no documentation for Risk Assessment, Disaster Recovery, Infrastructure Standard Requirements, Contingency Plan, Data Protection and Privacy Practices. The previous list just mentions a few areas that are critical to ensure service continuity and security. It could be concluded there is a gap that needs to be covered, if the country wants to continue the path of development that has reached so far and to be

a competitive option given the current and diverse amount of possibilities available in the worldwide market. It is imperative for Dominican Republic, as a country, to face this issue and turn it into an opportunity for improvement that will contribute to its economy.

The present project arises from the necessity to address the shortcomings of the Contact Center industry in Dominican Republic. It is an attempt to study and introduce commonly accepted practices and recommended procedures related to the technological infrastructure of Dominican Contact Centers.

Problem

Problem Statement

The Contact Center industry in the Dominican Republic has experienced a considerable growth since 2003. During 2003 there were eleven (11) registered Contact Centers, but by February 2009 the amount increased to sixty-five (65) Contact Centers [6]. This represents an average of almost eleven (11) Contact Centers opened per year. The main target of most of these Contact Centers is to provide outsourcing services to companies located in the United States of America [8].

But the Dominican Republic is not alone in this industry. It competes with other countries such as India, Philippines, Panama, Costa Rica, Jamaica, Mexico and El Salvador. This creates an immediate need for the country to maintain itself as a competitive option for potential customers.

One notorious problem is the lack of written documentation in regards to general requirements needed to set up a Contact Center in the Dominican Republic. This happens even when the country has two call center associations: Dominican Republic Call Center Association [9] and the ACC-RD (Asociación de Contact Centers de la República Dominicana) [10]. The Dominican Republic provides services such as Inbound Calls, Outbound Calls, BPO, and Back Office mostly for companies located in the United States. Each of these services requires different technological infrastructures that are closely related to the type of activity performed and the specific requirements of the market they are focused on. Best practices nor standards were defined that could provide orientation for Contact Center's owners and administrators in regards to the minimum technological requirements that should be met in order to guarantee quality services for customers and clients.

Contact Center, Customer Contact Center or Call Center

Lately, the expressions "Contact Center" or "Customer Contact Center" have been used with more frequency than the phrase "Call Center". A "Call Center" refers to a center that receives or places phone calls. "Contact Center" and "Customer Contact Center" have a wider meaning that includes receiving and placing phone calls along with others service such as assisting customer through web chat, email handling, data entry, business processing, etc. This research is oriented to activities performed by Contact Centers; therefore call centers are included within this document.

Client versus customer

In previous paragraphs the concepts "Client" and "Customers" have been used as if they had different meanings. Both words are considered synonyms within the English language, but for the purpose of this paper they will be used to refer to different entities.

Since the focus of this document is Contact Centers which provide outsourcing services, it will be considered a "Client" the entity or company who hires the services of the Contact Center. This means the Contact Center will provide services on behalf of its clients.

On the other hand, the word "Customer" will be used to denote the entity or company who directly receives the service provided by the Contact Center. For example, if a Contact Center is in charge of

answering e-mails on behalf of “Company X”, the customers will be those individuals whose e-mails are being answered by the Contact Center agents, and the client will be “Company X”.

Motivation of Study

I have worked in the Contact Center industry since February, 2003. During these years I have been part of the Information Technology Department of three different Contact Centers located in Santiago, Dominican Republic. I have directly worked with the constitution of two of them: UNO (United Nearshore Operations) and Synergies Strategic Services/Synergies First and its expansion. Part of my curriculum includes direct participation in electrical and technological design and implementation of four physical centers (this includes UNO’s main center and three different centers for Synergies: Synergies Strategic Services, Synergies First and Synergies First Expansion). At UNO my position was Senior Information Technology Support while at Synergies I am the Senior Information Technology Manager (current job). In regards to operations, I have experience –from an Information Technology perspective - with inbound customer service, outbound telemarketing and back office. These operations include telemarketing, customer service, lead generation, data entry, profile verification and Business Process Outsourcing. All these experiences have helped me to identify needs that may be important areas of improvement for the industry in the Dominican Republic. As I mentioned before, one of these areas is the lack of general written information available for new centers that want to be established in the country. This is was the main reason for writing this research. It may help with the development of the business and, therefore, the country in the near future. With this study I have two different purposes: first one is to present it as my final investigation paper for obtaining a Master’s Degree in Network Administration at the Rochester Institute of Technology/Pontificia Universidad Católica Madre y Maestra. The second purpose is to present these standards to Call Centers associations and the CEI-RD, hoping they could be accepted and deployed by at least one of these institutions.

Significance and Benefit

The objective of this research is the creation of a set of proposed standards and best practices for requirements of Technological Infrastructure for Contact Centers located in the Dominican Republic. It analyzes some of the technological challenges Contact Centers might face in the country. It provides orientation for new investors who are interested in establishing Contact Center business in the territory. Also it could be used as a guide for already opened centers that wish to offer quality services to their clients.

Literature Review

This section provides information about what has been done in regards to standards dedicated to the Contact Center industry or standards related to the business. Also, it describes studies that have been performed in the Dominican Republic and are related to the Contact Center business. Other topics that have been included are explanations about concepts such as Domain Model and Standards.

ISO 27001 and COPC

The ISO 27001 standardization consists in implementing a security management system within an organization. One of the indirect goals of implementing this system is to create policies and procedures to manage sensitive information. This will provide a sense of confidence to the business owners, employees and clients about how this kind of information is being handled. This standard proposes a security model [11] that aims to minimize the risk of data lost and unauthorized disclosure of information by protecting the data of the organization against internal and external threats [12].

The IT Governance on its paper called “Information Security and ISO27001 – an Introduction” [13], provides information about these specifications and how they may benefit different kind of organizations. Also it includes a comparison between ISO 27001 and other security standards.

The ISO 27001 is not a specific Contact Center-oriented certification. It is highly likely that Contact Centers’ agents will manipulate third-party information, which may include confidential data. The ISO 27001 standards will ensure the appropriate management of sensitive information.

On the other hand there is another well-known standard called COPC. When the acronym COPC is searched within the Internet it is most likely that words such as “Contact Center” or “Call Center” will be found near the results of the query. The reason is that COPC is oriented to Contact and Call Centers. Its primary focus is quality of service [14], and does not take into consideration technological infrastructure or information security practices.

The COPC’s website (www.copc.com) has the following definition about this standard: “*Customer Operations Performance Center Inc. (COPC Inc.) is the world's leading authority on operations management and performance improvement for customer contact center and Business Process Outsourcing (BPO) services.*” [14]. Compliance with this standard will guarantee Contact Centers’ clients in regards of their operations being managed with a high quality level.

Studies related to Contact Centers in the Dominican Republic

The “Offshoring Attractiveness Strategy Report for Dominican Republic” [15] was published in 2007. The purpose of this study was to highlight the key features the Dominican Republic offers to business willing to outsource their Information Technology, BPO or Contact Center Operations.

The report performs an analysis of the strategies that should be taken within the Contact Center industry in the country, along with a roadmap for their implementation and additional recommendations. Some of the addressed topics include an analysis of the business environment, the infrastructure of the country (including power, technology, real estate and accessibility) and a

geographical evaluation. It is recommended to potential clients and Contact Center owners to read this document.

Domain Model

A domain model is a method to represent all the procedures and components within a determined system and the interrelation between these components and procedures. The concept of domain modeling was initially used within the software designing area and was developed after the software reuse approach [16] [17]. The idea behind this concept is to compose a generic domain that later will be applied to similar domains. A domain could be seen as a problem space [18] and domain modeling is the task of representing that problem space through diagrams (or any other chosen methods). It shows the interrelation of the activities and objects, which constitute the space, to provide a complete understanding of the situation. Using domain models, it is possible to interconnect objects and clarify their relationship within the specific domain. In software engineering the objective of modeling a domain is to find common features between several systems so they can be reused in different applications and systems that share the same characteristics.

As it was mentioned before, domain modeling is a technique originally designed for programming but it is actually implemented in several other areas such as business since it is equally useful. It permits the description of a system, environment or situation, not necessarily related to software, by designing a conceptual picture of the analyzed entity. In the book called "Domain modeling" by Oldfield, the author specifies that *"A domain model is a model of the domain within which an enterprise conducts its business"* [19]. If an enterprise conducts business on one domain, this means the domain model should be the same for another enterprise using the same domain [19].

For the purpose of this research, Domain Modeling was used to create a "prototype" of Contact Centers for the Dominican Republic. The objective was to address every meaningful procedure within a Contact Center, finding its inputs, outputs and operation requirements. These findings were later represented through diagrams, tables and notes so they could be generally applied to any Dominican Contact Center. This Domain Model intends to serve as a basis of common knowledge about the operations of Contact Centers in Dominican Republic. It should be useful for the development of new ideas for this area as well as a basis to detect flaws and weaknesses that may be improved along the industry. It also, would serve as the basis to identify the technological infrastructure requirements.

During the creation of the domain model, a domain analysis was accomplished. The involvement with the domain to be modeled was achieved through conversations with people working in the field, personal experience, using documentation previously created about the domain, its components and operations.

Standards

Standardizing is an old practice between humans. According to the Open System Defined website, a standard is *"A document that establishes engineering and technical requirements for products, processes, procedures, practices, and methods that have been decreed by authority or adopted by consensus"* [20].

This project focuses on developing standards for technological infrastructure. Institutions from the cultural and educational area in the United States have already performed investigations and defined

standards and guidelines related to their technological infrastructures [21] [22]. Their main goal is to maintain a technological infrastructure that goes according to their customer's needs.

Contact Centers' vendors have created technological infrastructure-related papers for Contact Centers [23] [24]. These documents have interesting topics and ideas, but their main purpose is to sell the vendor's products and, most of the time, they do not address all the possibilities within a specific Contact Center and do not take into consideration environmental factors. Vendors, like Intel, have [25] developed some models to be followed by companies that desire to outsource their Contact Centers. These models may include recommendations for telecommunications infrastructures.

Having said the previous words, the conclusion is that there are not many specialized studies devoted to the Contact Center Technological Infrastructure.

Domain Model for a Contact Center dedicated to Service Outsourcing

The purpose of this Domain Model is to provide a global blueprint about the Contact Center industry. It provides the required information for people that are not familiar with the business and also it could be used as a general guideline for future investors in this area.

Contact Center General Diagram for Project Outsourcing

The main interest of Contact Centers is to acquire clients to provide their outsourcing services. The target market for most Dominican Contact Centers is focused on companies located in the United States. Other markets of interest are United Kingdom, Spain and Canada. One of the goals of a Contact Center is – like an airline – to have their seats “sold up” to capacity.

The following diagram presents a general overview of Contact Center processes beginning new or potential client have been captured, until its operations are fully implemented.

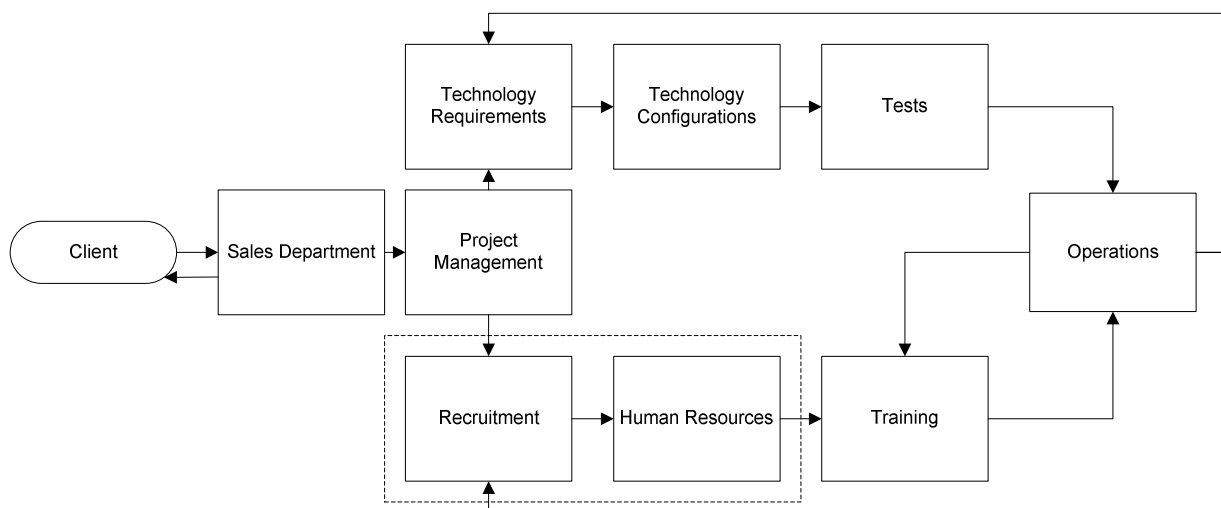


Figure 1: General diagram for Contact Centers dedicated to project outsourcing

Potential clients contact (or are contacted by) the Contact Center through the Sales Department (or equivalent function) to negotiate their required services, needs and to ask for quotations. After an agreement has been reached between the client and the Contact Center and a Statement of Work has been established, a team (sometimes composed by client members and Contact Center members) is in charge of defining the human, operational and technological requirements for the new project. Once this has been determined, the Human Resources department is in charge of recruiting the appropriated personnel with the desired profile. During this process candidates are evaluated and depurated. Selected candidates receive a job offer from Human Resources and after they are hired, induction and training are provided.

Contact Center's training might cover a wide variety of topics such as basic Contact Center etiquette, use of English accent, client-specific courses, etc. Once basic training is complete, the employee will start working in the Operations environment. Agent training is a constant task because employees need to be prepared either for changes within the current process, new requirements from the client or just to improve the quality of their work. Upon more staff is needed, the Operations department will require new resources to Recruitment/Human Resources and the same process will be repeated.

While the recruitment process is being executed, the Information Technology team would be working on the development of the required technical platform for the project. Some of their duties would be acquiring new technology and/or services and configuring current systems and services. After the previous tasks are completed a testing phase will begin to ensure that all the technology is ready for the operation of the new project. Once testing is finished, operations are ready to begin. Technology changes and new implementations are also a constant within the Contact Center environment; this means that the same process of gathering information, configuring and testing has to be followed once again.

It is important to notice that after the project has begun, the Operations department is in charge of representing the client within the Contact Center and any new requirement the client has would be canalized through them.

Key process for Human Resources within the Contact Center:

The Recruitment/Human Resources process is very important for the Contact Center, because human capacity is the main component for operations. The downside is that high rotation rates are common for Contact Centers. This is one of the reasons why recruiting personnel becomes a regular task for this department.

The relevant processes within Human Resources are recruitment, selection and hiring. The following diagram shows these key processes with an overview of their functions:

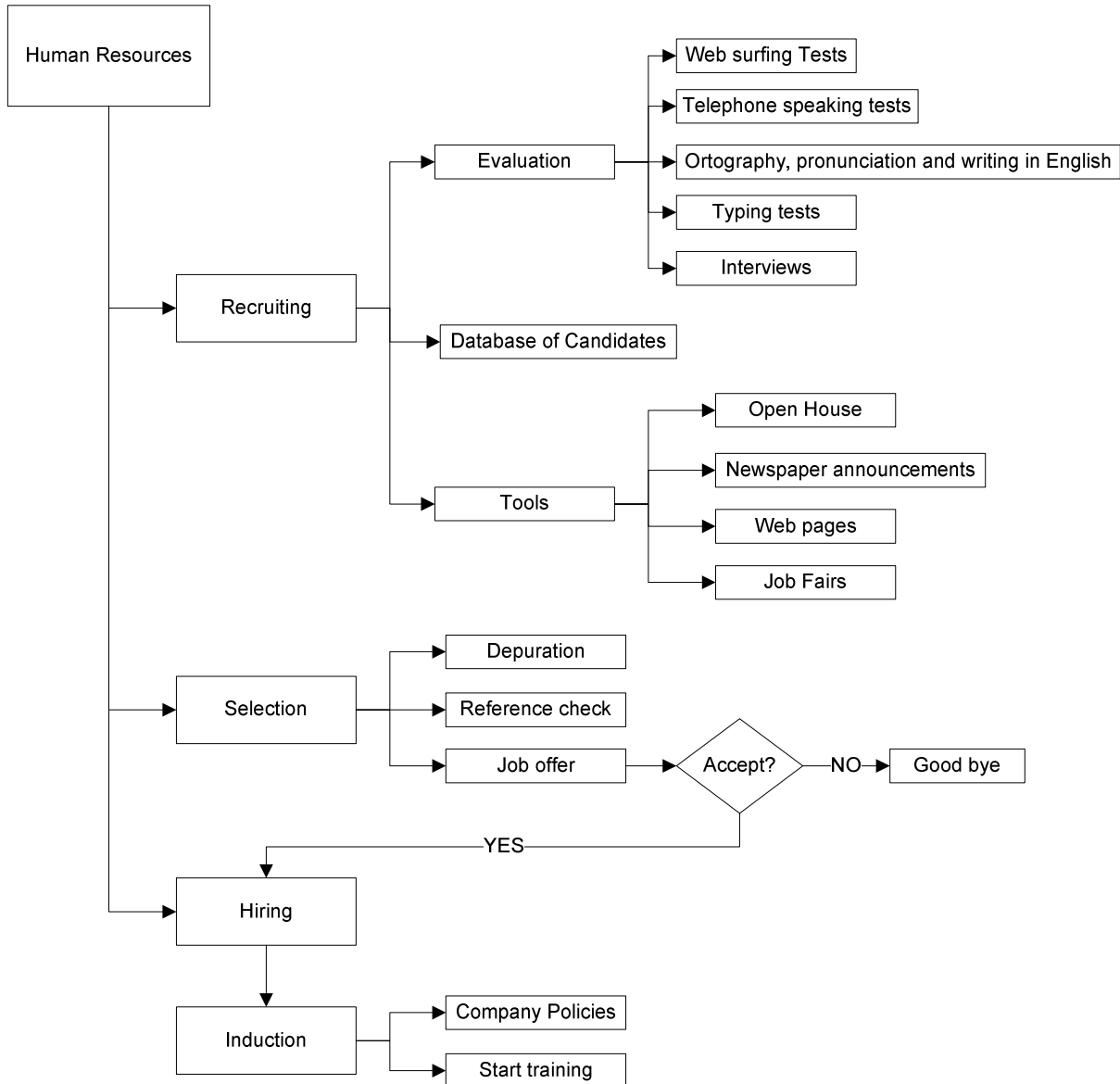


Figure 2: Key process for Human Resources within the Contact Center

Recruitment process

The recruitment process has to be accomplished considering the defined profile established by the client. Some clients will prefer to approve the personnel, while others will let the Contact Center to decide.

Recruitment	Evaluation	Different evaluations should be developed according to the specific requirements of each project. Evaluations may include simple interviews, psychological tests, technical knowledge and abilities.
	Database of Candidates	A database of potential candidates has to be developed. The goal is to create a pool of possible resources that will allow a faster response of human resource requirements.
	Tools	Since the rotation rate tends to be high on Contact Centers, a combination of different tools comes in handy for employee's uptake. Tools that are used may include ads published in newspapers and job fairs.

Table 1: Recruitment components

Selection process

Selection is the next step in the recruitment process.

Selection	Depuration	The evaluations of the candidates are checked and the most outstanding candidates are chosen.
	Reference Check	Background checks of elected candidates are completed, to make sure they comply with the company's hiring policies. Also claimed competency may be verified.
	Job Offer	Elected candidates receive a job offer from the Human Resources department.

Table 2: Selection components

Hiring process

Candidates that have accepted the job offer will go through the hiring process.

Hiring	Induction	New employees receive information about the company policies and procedures.
--------	-----------	--

Table 3: Hiring components

Key processes for Training within the Contact Center

After employees have been hired, they start their training phase. The training key tasks involve Contact Center specific courses and client procedures and tasks. It is important to consider several different aspects such as trainers, training methodologies, training tools, locations and the training cycle itself.

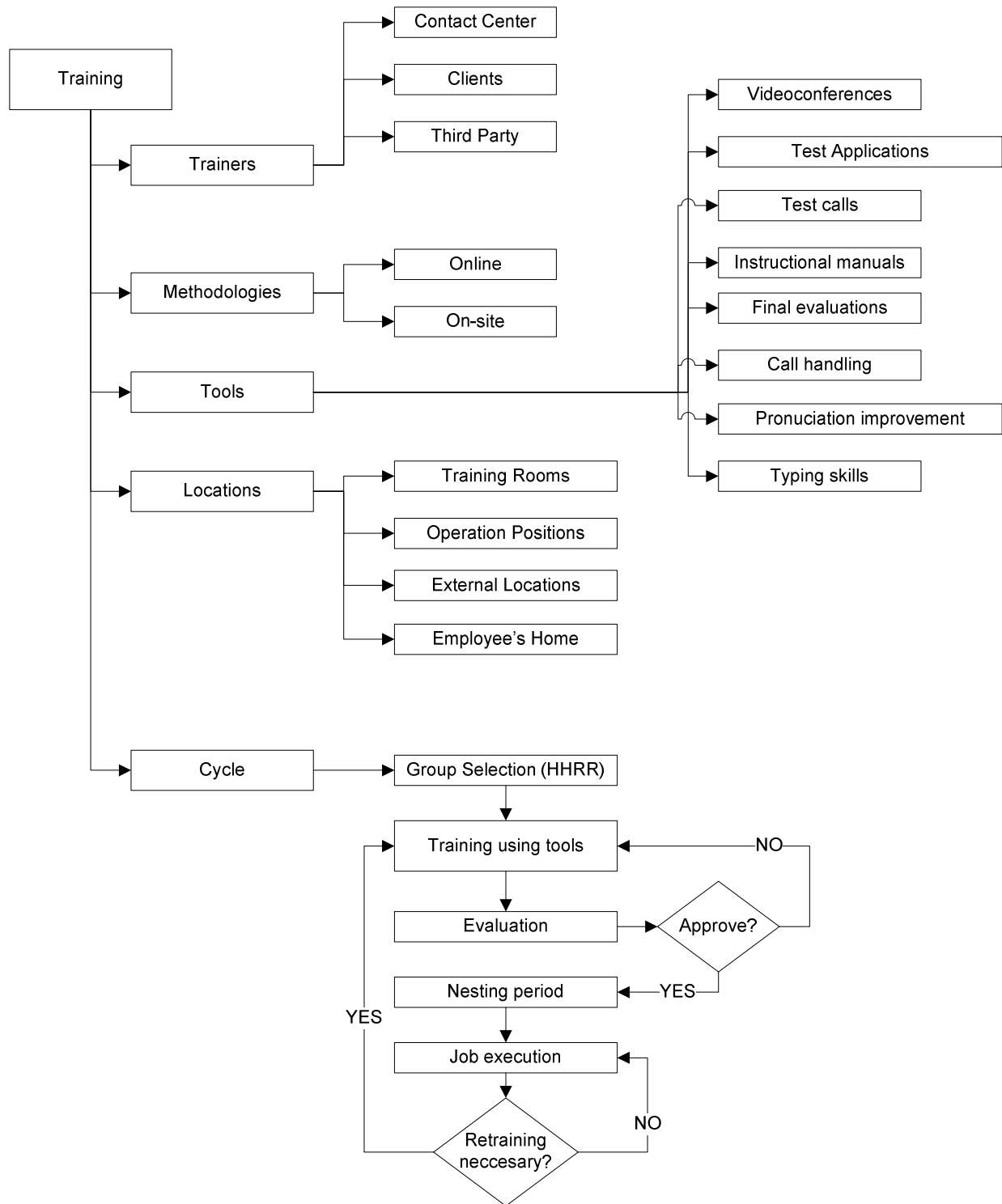


Figure 3: Key components for Training within the Contact Center

Trainers

Trainers	Trainers hired by the Contact Center	Many Contact Centers have dedicated or partially dedicated trainers. Some trainers are dedicated to teach employees how to provide service for a particular client, while others would instruct employees about generic Contact Center's topics or personal development lectures.
	Trainers hired by the Client	Some courses are imparted by trainers, who are part of the client's company. In some occasions these trainers prepare Contact Center trainers that will eventually continue their labor.
	Third-party Trainers	Some special courses require third-party institutions/trainers who will deliver the course.

Table 4: Trainers

Training methodologies

Trainings can be provided using different methodologies.

Methodologies	Online Training	It is delivered through any web-based or remote-based application. Sometimes through phone conferences.
	On-site Training	Trainer is on the site. A dedicated physical space for the training is needed.

Table 5: Training methodologies

Training tools

In order to achieve effective training sessions, instructors work with a set of tools to ensure the personnel is prepared to handle the tasks for their current job.

Training Tools	The set of tools employed by trainers may include (but are not limited to) video conferences, test applications that simulates the real production environment, test calls, instruction manuals, final evaluations to determine the level of preparation of the employee, etc.
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Table 6: Training tools

Training locations

Whether training is online or on-site, it can be imparted in different types of physical locations. The selected location should be prepared for an effective training.

Training Locations	Training Rooms	Most medium to big size Contact Centers dedicate one or more areas for training purposes. Most of these areas are equipped with the same features that are present in the operational environment plus additional training aids.
	Operations Positions	Operations seats could be used for training purposes. Most of these trainings are basically follow-up trainings.
	External Locations	Some training sessions are carried out of the boundaries of the Contact Center. These external locations should have the required features of the course that is going to be provided.
	Employee's Home	Employees may receive training while they are at home through their personal computers while this method complies with established security policies.

Table 7: Training locations

The training cycle

The training cycle starts once an employee has received his or her induction as a new member of the Contact Center. Training is a continuous task and is closely related to Operations. Client processes are prone to suffer constant changes and new functionalities may be added or removed from an employee's job. Also, agents' quality is constantly evaluated if metrics are not being achieved; retraining and follow-up may be needed.

Key components for Operations within the Contact Center

Operations are the heart of the business. They are the ones performing the job the Contact Center was hired for. If Operations is not working properly, the Contact Center will not work properly.

The Operations department has several key components and players who should be taken into consideration:

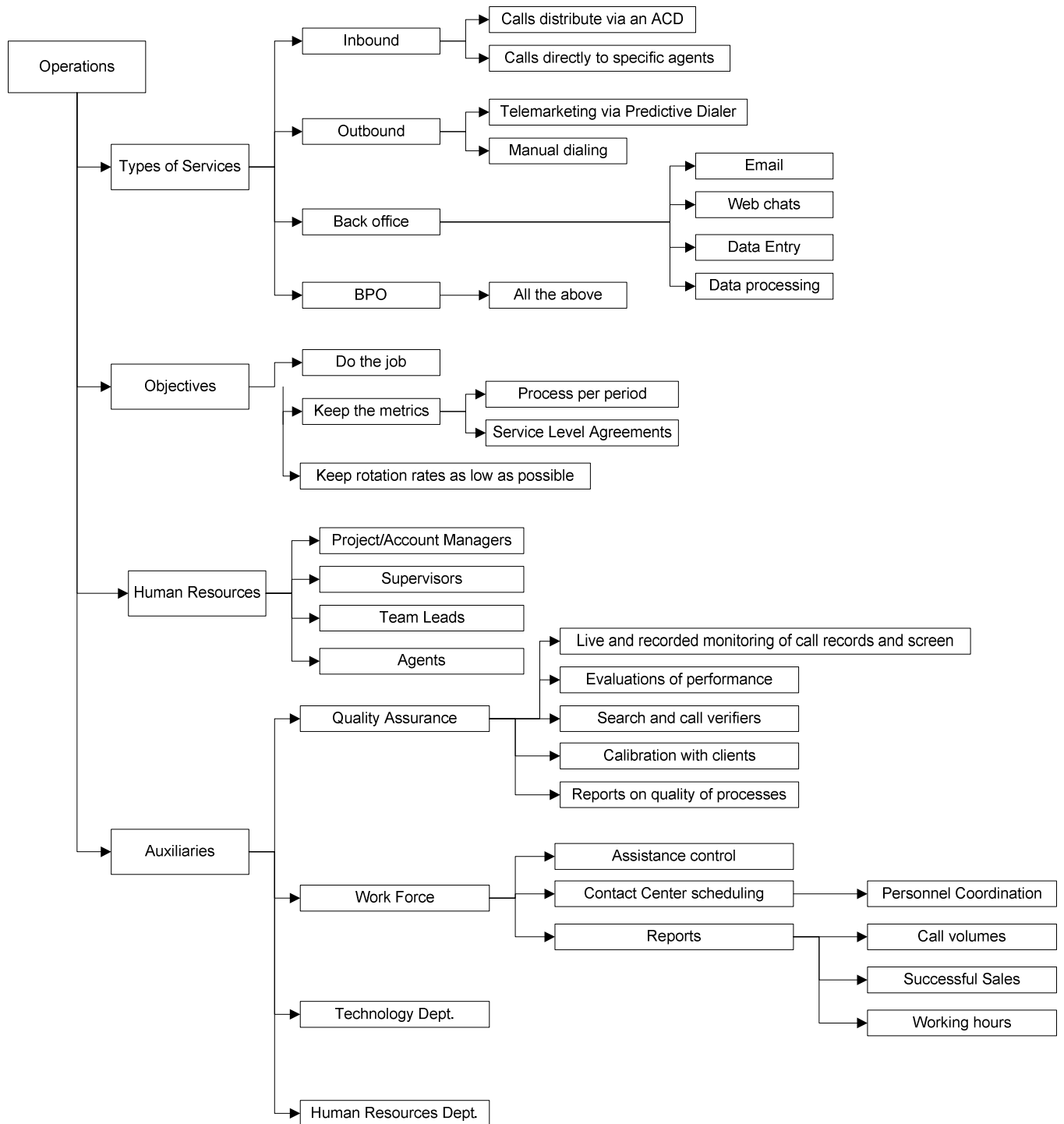


Figure 4: Key components for Operations within the Contact Center

Types of services

A Contact Center can offer one or more different types of services.

Types of Services	Inbound	Inbound calls will reach employees either by an Automatic Call Distribution device or the call will be directed to a specific employee (transferred call or the customer will choose to talk directly with the agent.)	Customer care service lines are examples of inbound services.
	Outbound	Outbound calls are either automatically dialed by a predictive dialing system or manually dialed by the employee.	Telemarketing is an example of outbound services.
	Back Office	Back Office tasks are executed without the use of the phone.	Examples include data digitization and e-mail processing.
	Business Process Outsourcing	Business Process Outsourcing involves a mix of inbound, outbound and back office services. BPO could be compared to a common office job.	Examples include outsourced payroll processes or financial related tasks.

Table 8: Types of Services

Operations Objectives

The Operations objectives are simple:

- Do the job the Contact Center was hired for.
- Keep the metrics. The job has to be completed in compliance with productions and quality metrics.
- Keep rotation rates as low as possible. Recruitment, hiring and training processes have a cost. Operations, with the support of Human Resources, should elaborate plans to maintain a low rotation rate.

Human Resources within Operations

The Operations department's staff executes different types of functions.

Human Resources within Operations	Project/Account Managers	Manage client's accounts within the Contact Center. They must ensure client's needs and requests are met.
	Supervisors	They are in charge of supervising the different groups of Call Center Agents.
	Team Leads	Help Supervisors and may handle "supervisor calls."
	Agents	Perform the Contact Center job.

Table 9: Human Resources within Operations

Besides the resources mentioned in the previous table, there are other departments that provide support to Operations:

Auxiliaries	Quality Assurance	QA is in charge of evaluating and monitoring the quality of the work achieved by the Contact Center Agents. Their main goal is to ensure the metrics are achieved while the quality is preserved.
	Work Force Management	The Work Force Management department is in charge of generating performance reports for the different projects. They also manage agent schedules and develop volume forecast for the different campaigns.
	Technology and Human Resources Departments	These departments auxiliaries of Operations, and provide support to the production.

Table 10: Operations auxiliaries

Key components for Information Technology within the Contact Center

Technological devices at a Contact Center could be compared to sewing machines in a textile factory. Without technology Contact Centers could not operate.

Technology activities involve a variety of tasks, which includes: Project Management, Telephony and Network Administration, Application Development, Help Desk, Technological Security and Contact Center Activities. Figure 5 shows a better view of these tasks.

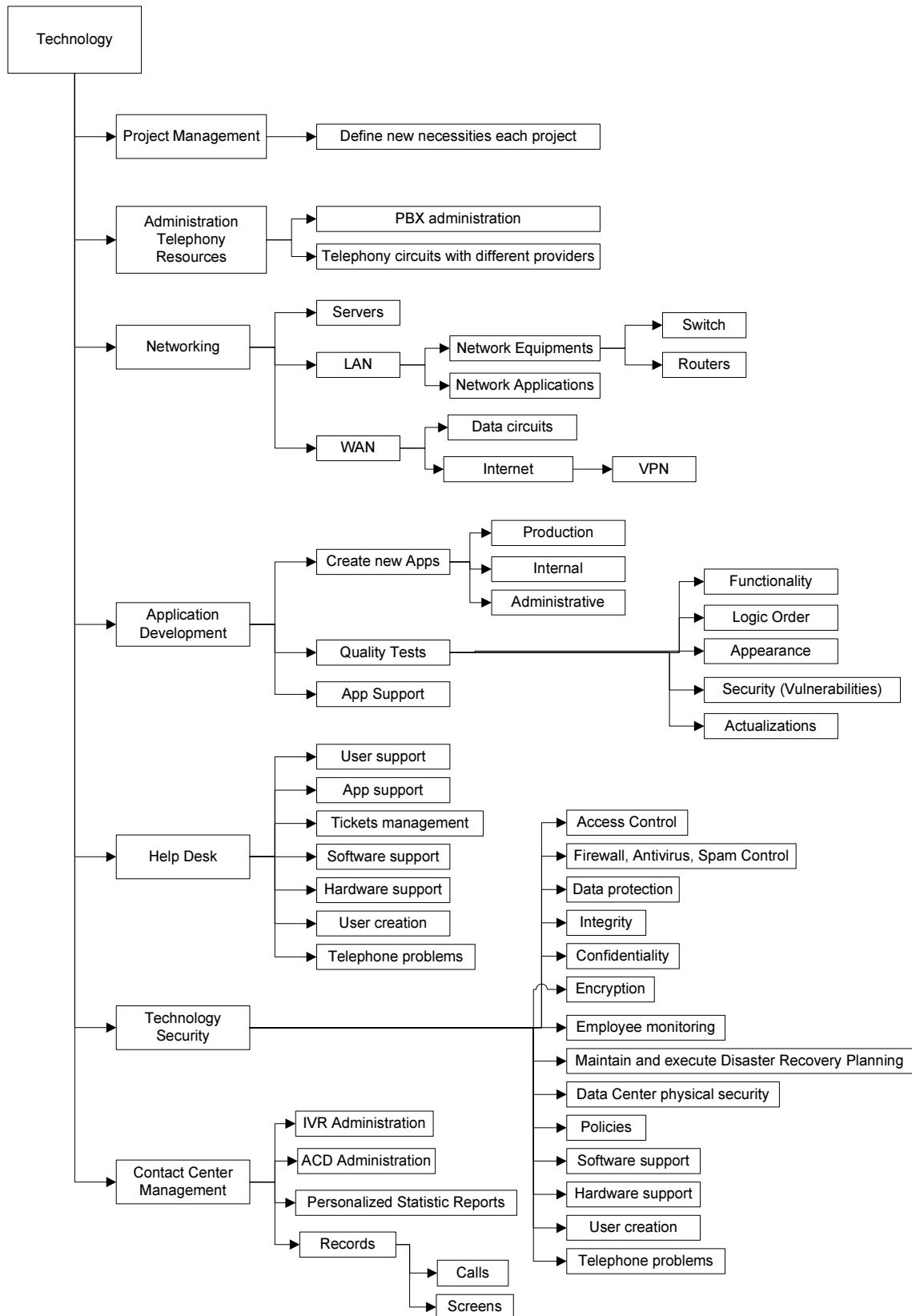


Figure 5: Key components for Information Technology within the Contact Center

Project Management	Client has specific technological demands that have to be met. These requirements might be similar or completely different from technological setups for current clients. For each new project, the IT department will analyze the technological exigencies and will develop a plan to ensure all the specifications are met.
Administration of Telephony Resources	Contact Centers that handle calls (either Inbound or Outbound); will require personnel to be in charge of the administration of the telephony circuits. Many Contact Centers have their own PBX that needs to be managed and maintained by appropriate technical resources.
Networking	Contact Centers have computer networks (similar to other organizations) that will administer and supported by IT personnel. Downtimes within operation hours, either on the Network or the Telephony System, could translate into an important cost for the Contact Center.
Application Development	Projects might require new applications, customizations of existing applications or integration between different existent applications. For these types of requirements, application developers (in-house or external) will be required. Also other internal departments of the Contact Center need customized applications to achieve the goals of the business.
Help Desk	It is almost certain that Help Desk support would be necessary for any Contact Center. Malfunctioning systems can affect the work that has to be completed. Help Desk resources will be the first point of contact for problems reported in any area.
Technology Security	Security is important for any business. Contact Centers are not the exception, especially because they handle third-party information. Contact Centers make their clients feel confident letting them handle their information. Security comprises a lot of different topics that range from physical security to logical security, and everything in between.
Contact Center Management	There are special devices and technological tasks within a Contact Center that are specific to this kind of business. Examples of devices are IVRs, ACDs, Call Recording Systems and Predictive Dialers. All these devices require trained personnel for its management and support.

Table 11: Information Technology tasks

Information Technology needs identified within the Domain Model

In the previous Contact Center Domain model there are several IT needs that could be identified within each analyzed element in the Domain Model. The following is a list of the main ones:

General Overview of IT needs: Contact Centers, at least in the Dominican Republic, are a business characterized by its constant changes and the amount of technology involved. This means that they must be able to respond, in a timely manner, to changes demanded by clients; while maintaining the required quality. Big-sized Contact Centers or Contact Centers with demanding operations should look forward to acquire technological systems to ease the work. Support of Information Technology will be present in the different process among the Contact Center, and they are supposed to improve the quality of the work.

Sales Department: Contact Centers dedicated to provide services to third-parties should have some way to promote themselves within their target market (same as any other modern business). The minimum way to accomplish this is through a website with contact information and a summary of the provided services. Sales department should have a basic understanding of the technology managed by the Contact Center.

Recruitment/Human Resources: One of the main characteristics of this department is the fast response times they need to achieve. Recruitment/Human Resources are always evaluating and recruiting new personnel.

Why this department has such amount of work? One reason may be the high rotation rate of Contact Centers. The explanation of such rotation rate may be the subject of another study, and probably this is similar within Contact Centers around the world. This is a topic that I had discussed with customers from USA and friends who works as Contact Center agents in Denmark, Finland and Ireland. One of them told me: *"Rotation rate in my country is as high as it is in your country, and the reason is because we don't want to do this for the rest of our lives."* Another reason for such amount of work is that new clients may arrive and may request a considerable amount of resources to be hired in less than a month.

Looking at this challenge from a technological perspective, Recruitment/Human Resources needs a system that will ease their work (for Contact Center of more than 100 seats, an excel spreadsheet is not enough). This system requires a proper database to store the characteristics and abilities of the potential candidates.

Other technological tools that would ease the evaluation process of candidates include: electronic tests and voice recordings.

Training: The same applications that are required for the production environment should be available in the training environment. Dedicated training rooms should be equipped with data shows and speakers for the training sessions.

For online training, Internet access would be required. Some Contact Centers would have videoconferencing systems, but nowadays there are several online products that may be used instead.

Operations: Operations has the biggest requirements in regards to technology. Different types of operations will require different types of devices and systems.

For a general understanding of these requirements check the section called “Contact Center Technology 101” on this document.

Information Technology: The IT department of a Contact Center will require the same set of tools any regular IT department within another type of industry might need. Going along with the nature of Contact Centers, this department needs to provide fast response times for the requests from clients and other internal departments. They must ensure production downtime due to technical issues is low or none.

Functions such as help desk or end user support may become time consuming if the Contact Center is too big. Tools such as ticket system (for submitting user requirements), change management systems, network monitoring software, etc. could be helpful for this department.

As it can be seen, Technology is critical for a Contact Center. For this reason, it is important to have standards that define parameters every Contact Center should meet. The following section will explain basic technological devices used in the Operations environment.

Contact Center Technology 101

Different types of operations will require different types of devices. Business owners and administrators need to define the type of operations the Contact Center will be focusing on. After this is defined, Contact Center systems should be bought.

This section will provide a list of devices and systems that should be taken into consideration, depending on the type of operation to be performed. This does not pretend to be a complete list, but may be used as a guide for Contact Center Technology, and especially for readers that are not familiar with the industry.

Call handling Operations

Outbound Operations

Outbound Operations are the ones where Contact Center Agents will place calls to external customers to offer a service, product, collect information or provide information. There are two types of outbound operations and each one of them will require different systems or system functionality.

Types of Outbound Operations

Automatic Dialing

Automatic dialing operations are used for Contact Center campaigns that need to place a lot of calls within a short time. Automatic Dialing is performed by a device or software that will dial a list of provided phone numbers. Examples of operations that might use automatic dialing are telemarketing, lead generation and surveys.

The following is a list of devices and functionalities that could be used for automatic dialing:

Automatic Dialers or Autodialers: An autodialer is a device or software that dials a provided list of numbers and transfers the calls to Contact Center's agents. Automatic dialers may perform one or more of the following functionalities:

- **Predictive Dialing:** Predictive dialers are an evolution of autodialers. The predictive dialer will use algorithms to determine the amount of phone lines that should be used for placing the desired amount of calls. The number is achieved by considering the amount of Contact Center Agents logged into the system. Also it will try to control metrics such as the abandon rate. The list of phone numbers is uploaded to the predictive dialer to create the outbound campaign. After the campaign is started, the predictive dialer will start dialing numbers and as soon as a live person (or maybe an answering machine) picks the phone, the call will be transferred to the Contact Center Agent. Contact Center Agents do not have control over which phone numbers are dialed by the system.
- **Preview Dialing:** The preview dialing functionality allows a Contact Center Agent to view, in advance, the phone number that will be dialed by the system and to decide if the number should be dialed or not. This function is not as effective as predictive dialing when a high number of phone calls have to be placed. The agent can choose not to dial the phone number.
- **Progressive Dialing:** It is similar to the preview dialing functionality since the Contact Center Agent will preview the phone number to be dialed by the system before the number is dialed. The difference is that the information is displayed for a defined amount of time before the progressive dialer actually places the call [26]. Progressive dialing does not provide the option of canceling the phone call, it only permits that the Contact Center agent knows in advance who will be contacted.
- **Smart Predictive Dialing:** Works similar to the predictive dialer. Before an answered call is transferred to a Contact Center Agent, the customer will hear a recording asking if he or she is interested in speaking with a live person. If the customer decides he/she wants to talk with a person, the call is transferred to the Contact Center Agent. [26]
- **Outbound automatic messaging delivering:** Outbound automatic messaging delivering consists of using a predictive dialer (this should be an additional feature for the system) to reproduce recordings to the person who answers the phone. This functionality does not involve Contact Center Agents.

Outbound Reports: Autodialers must have the capability of running statistical reports on the different dialed campaigns. Information such as amount of contacts per hour, abandon rate, line usage, calls dispositions, etc. should be available on the selected system. This information will be used by different members of Operations to decide the best strategies to run the campaigns.

Customer Relationship Management (CRM): A CRM is a system that collects customer information for different purposes like using this information to provide better services to current customers or using the collected data to perform analysis with the objective of making better decisions to increase company's sales [27]. A CRM can be as simple as a customer database. Or it can be as complex as a software package like Oracle Siebel CRM or Microsoft Dynamic CRM.

When outbound (or even inbound) device is bought, it should be taken into consideration that clients may want to gather information about their customers and there should be a system available for the storage of the data. Most of the outbound systems have a medium to store information about customer records but, in some cases, the data to be stored (and maybe searched) is more complex than what the system could handle. When stored data is too complex for the outbound platform, extra connections with external databases or systems should be configured.

Agent Scripting: In some operations (especially in telemarketing), Contact Center Agents are not free to offer products or provide information using their own words. The employee has to follow a script or dialogue to be read to the customer. Autodialers may have a scripting feature that allows the creation of dialogues when the campaign is being configured. With this setup, when a call is transferred to the Contact Center Agent, the dialogue will be displayed to the employee as well. In some occasions, these scripts are the front end of the CRM database. When purchasing an autodialer, it is important to take into consideration if the system has scripting capabilities or not.

Caller ID Configuration: This refers to the capability of modifying the displayed caller-ID to customers, when a call is placed. For some outbound operations displaying caller-ID is required by law (at least in the USA, telemarketing campaigns must send caller-ID information). Being able to configure the caller-ID provides the flexibility to display different numbers for different campaigns.

Outbound IVR: An outbound IVR is a hybrid between an outbound autodialer and an Interactive Voice Response system. This means that an autodialer places the outbound calls, but as soon as the call is picked by a person, the IVR handles the call trying to handle it without the intervention of a Contact Center agent. For more explanation about IVRs, read the Inbound Calls section below.

Manual Dialing

Manual Dialing operations would require that Contact Center Agents places the phone calls. The basic device needed to perform this function is a phone system or PBX. Features and tools such as reporting, caller-id configuration, CRM software and agent scripting should be considered when performing this type of operation.

Inbound Operations

Inbound Operations consist of receiving incoming calls into the Contact Center. Customers could be geographically located in any place in the world. Incoming calls will be distributed between Contact Center Agents either in an automatic way or by redirecting the calls to a specific agent selected by the customer.

Automatic Call Distribution

Automatic call distribution is used for operations that receive calls that could be attended by any Contact Center Agent with the specific training and knowledge to handle the call. Upon arriving, calls are routed to queues and then transferred to the next available agent. Customer service lines are a good example of an operation that employs automatic call distribution. The following is a list of devices and tools being used for this operation:

ACD: ACD stands for Automatic Call Distributor and it is the name of a device or software that is in charge of distributing the incoming calls between the Contact Center Agents. The distribution is executed considering predefined algorithms and agent's skills. For example a customer service line for a specific service may have two different queues, one queue for Spanish customers and the other one for English customers. The Contact Center may have agents that only speak Spanish, others that only speak English and others that could speak both languages. On top of that, some of the bilingual agents may be stronger in one of the languages. These capacities are known as skills and skills are assigned to agent depending on their capacity and/or training with specific priority levels. Skills are one of the parameters ACD uses to distribute calls.

IVR: IVR stands for Interactive Voice Response. An IVR is a system which interacts with callers. The system gathers information about the call and routes the call to the appropriate destination. An IVR could provide service to a customer, without the need of Contact Center agents, searching for information about the customer within the company's database. It could accept as valid inputs voice recognition, touch pad dial or both [28]. One of the main goals of an IVR is to reduce the amount of calls that are handled by live agents trying to provide self-service to customers. Databases and prerecorded messages are key elements for an IVR.

Reporting: Reports are important for inbound campaigns since metrics such as agent login and logout, distributed calls, abandon calls, average handling time and, especially, the service level need to be known to provide a service with quality.

Direct agent calls: Agents can receive direct calls to their extensions. In this case, the ACD functionality is not used and these types of calls are defined as Direct Agent calls.

CTI – Important in Outbound and Inbound world

CTI stands for Computer Telephony Integrations. This means that CTI is in charge of integrated telephony systems with the computer world. Most people know CTI as “screen pops”.

Screen pops works by displaying a screen pop-up to inbound or outbound agent that would provide information about the incoming or placed call. The displayed data could include information such as incoming/outgoing phone number, customer name, address, customer account number, etc.

According to “WhatIs.com” some of the features of CTI are: authentication of callers (or person that is being call) using information already on a database, voice recognition which can be used for authentication or for message forwarding, voice and video managing, fax handling and also it can start a

specific application on the agents computer depending of the type of functionality that is needed [29] for the campaign.

A Note about Voice Circuits

Since the main target of most Dominican Contact Centers is the United States, this section provides information about the type of voice circuits that can be purchased in the United States for incoming and outgoing calls from/to the PSTN (Public Switched Telephone Network). Voice circuits can be Local Voice Circuits or Long Distance Voice circuits and there are important differences between them:

- **Local Voice Circuits** belongs to a specific city within the United States. This means that for inbound calls the circuit will have assigned one or several local phone numbers (DIDs) from the city it belongs to. For example, a Local Voice Circuit in Miami will have assigned DIDs with area codes that are allocated to the city of Miami. Interstate or intrastate calls will have specific rates (normally higher than for long distance circuits). The advantages of these circuits are that inbound calls do not have a cost per minute for the owner of the voice circuit. Outbound calls to toll free numbers within the United States do not have a cost either. These circuits are recommended for receiving inbound calls (knowing the caller will have to pay for long distance he/she does not call from the same city) and placing outbound calls to toll- free numbers.
- **Long Distance Voice Circuits** are not allocated to a specific city. Instead of DIDs, these circuits have assigned toll free numbers. The incoming calls do have a cost for the owner of the circuit, but it is a free service for the caller placing the call from any state within the United States. In regards to outbound calls, the rate per talked minute (regardless of the state) tends to be lower than for local voice circuits. These circuits are mostly used to place outbound calls to non-toll free numbers (toll-free numbers are blocked on these circuits) and to provide an incoming phone number to customer that is free of charges.

Most Contact Centers, which provide services to the United States, will have a combination between local and long distance voice circuits.

Back Office Operations

Back Office Operations do not handle incoming nor outgoing calls.

There are different types of back office operations, since any type of function that involves some form of data processing - without placing or receiving phone calls - could be considered as a back office job.

Some of the most common types of back office work are:

Email handling: Contact Center's operations could involve answering e-mails on behalf of their clients. E-mail distribution between agents can be achieved in several ways and, nowadays, many Contact Center solutions include options for e-mail processing. Options for e-mail distributions could be as simple as manually assigning the e-mails to each agent (Have seen a Microsoft Exchange server receiving the e-mails from the customers and storing these emails in public folder. Contact Center Agents would pick the e-mails to be answered from the public folders.) Or e-mail assigning could be accomplished by systems that will handle e-mail in queues and perform the distribution among the different employees.

Chat with customers: The use of chat, especially web chat, has become popular among corporations that wish to provide better service to their customers. There are systems that handle incoming chat sessions and distribute them among the Contact Center agents. Chat sessions might be distributed to agents based on their skills and training. There are Contact Center solutions that integrate ACDs with chat handling by the use of CTI.

Web self-service: Web based self-service attempts to provide self-service to customers who prefers the use of the World Wide Web instead of the phone. Common examples of web self-service are web forms, applications for online booking, applications to perform online transactions, work instructions and online help [30].

Others back office services may include:

- **Digitization of printed information.**
- **Scanning printed information.**
- **Document reviewing.**
- **Image approval.**
- **Order processing.**

Each one of these functions may require special systems or software. The good news is that Contact Centers dedicated to outsourcing might find out that their client already has the special systems and the only requirement might be a connection to them.

Business Process Outsourcing Operations

Business process outsourcing operations may use a mix of previous mentioned devices, since these operations may require a combination of inbound, outbound and back office technology. Common tasks performed by agents within this kind of service include a combination of manual outbound calls, receiving ACD calls and Direct Agent calls, handling e-mails and processing customer orders.

Quality Assurance Operations

The Quality Assurance department is in charge of ensuring that agents will reach their productivity goal while maintaining the quality requirements. They provide feedback to the Contact Center Agents and generate quality reports for the Operation managers, Account managers and clients. Some of the features that might be required by the Quality Assurance department are:

- **Call monitoring:** for inbound and outbound calls.
- **Screen monitoring:** for inbound, outbound and back office operations.
- **Call recording:** inbound and outbound calls.
- **Screen recording:** inbound, outbound and back office.
- **Quality reports and calibrations:** Calls and agents' screens are evaluated by the QA team. Tools used for evaluation includes excel spreadsheets or customized forms. Nowadays, there exist QA systems that will record the screens and calls and provide customized forms and reports to keep track of the scores. Scoring assignment usually relies on the perception and training of the QA Agent, this is the reason why calibration sessions may be required. Calibrations are special meetings or conferences between the client and the QA department (or between different QA

Agents), where the involved parties compare and discuss evaluation results of the same calls and screens until they reach an agreement.

Workforce Management Operations

Work Force Management will execute different type of functions at the Contact Center. Some of these functions are:

- **Contact Center forecasting and agent scheduling.**
- **Contact Center reporting.**
- **Dialer and/or ACD management.**

In previous sections it has been empathized the importance of reporting as a medium to keep track about campaign performance. The collected data should be analyzed for making decisions in regards to agent staffing, agent training, operations strategies, agent scheduling and volume forecasting. There are several applications in the market that are in charge of processing Contact Center information to ease the job of the workforce management team.

Setting up a Contact Center might represent a high inversion for companies in regards to technology and human resources. Not every business can afford the maintenance and support of this infrastructure, thus opting for outsourcing these processes. The next topic will explain some of the reasons why clients decide to hire a Contact Center.

Reasons to outsource processes to a Contact Center

Before developing a set of standards and best practices for Contact Centers in the Dominican Republic, it is important to understand the reasons behind companies deciding to outsource some of their processes to Contact Center's. According to a publication by The Call Center Café [31] some of the reasons for outsourcing contact center's related business to an external company are: money savings, lack of contact center expertise, test of new programs without having to invest on new technology, learning how to actually run a Contact Center, growth within their business, their call volume is variable, Contact Center Services are not considered a core function for the company, changes within the company's business model that require new processes, different types of calls should be handled and/or they have a straightforward sales and support requirements.

Companies that decide to outsource will hire a service for a period of time with the objective of getting the work done while maintaining a low cost. The first challenge of a Contact Center is to provide a service with quality while maintaining a decent price. A technological platform would support Contact Center's services and it should guarantee these services are being offered under acceptable parameters. Before a new campaign is launched, it is important to perform an ORT (Operation Readiness Test) to ensure that the systems are ready to handle the services demanded by the client. After the

technological platform has been tested, it is important to remember that clients and the operations department will expect the technology to be available. Downtimes could represent a high cost for Contact Centers and they should be kept to a minimum, so it is job of the IT department to maintain and support the systems.

Up to this point it has been proved the importance of the technological platform for the Contact Center business. Having a stable and secure systems ensure that, at least from an IT perspective, the Contact Center will offer quality services. The downside of this history is that the Dominican Republic has several technological challenges that need to be solved or worked around. The next session will enumerate some of the IT related challenges, the Dominican Republic faces in the present.

Information Technology Challenges faced by Contact Centers in the Dominican Republic

Dominican Contact Center faces some specific challenges that are related to Dominican laws, costs and geographical position. Some of these challenges are:

Telecommunication cost in the Dominican Republic is high

Challenge

Cost of telecommunications in Dominican Republic is considered high while being compared with other American countries [32]. One of reason for this cost being so high is that not many optical fiber links are terminating or passing through the Dominican Republic. This limitation raises the price of bandwidth usage and reservation for Dominican voice and data providers. Another reason is the high taxes applied to telecommunications, but this reason will be addressed in the next section.

HM Consulting [33], an applied technology Dominican consulting firm, declared that broadband Internet services are not as fast as in other countries and are considerably expensive. The average price of 1MB of Internet for other Latin American Countries is US\$19.00, while the average price for Dominican Republic is US\$66.00 [32].

Fiber optical links that pass over the Dominican Republic are the ARCOS-1 network and the Antilles Crossing cable or ANTILLAS-1 [34].

ARCOS-1 is a redundant fiber optical network cable that connects the United States with 18 countries from the Caribbean and Central America. Dominican Republic has access to this network through at two geographical points, one located in Punta Cana and the other in Puerto Plata [35]. The ARCOS-1 fiber link spans a distance of 8,201 Km and its bandwidth is of 15 Gbps [36].

ANTILLAS-1 or the ANTILLAS-1 Cable System is a fiber optical link which serves the Caribbean area. It interconnects Dominican Republic and Puerto Rico with the state of Florida (USA) [37]. This link is located at the Cacique Cable Station in Santo Domingo, in the Dominican Republic. It spans a distance of 470 Km of cable with a bandwidth of 2.5 Gbps [36].

Previously, the country had others optical fiber links like the TCS-1 or Transcaribbean System 1 and the Saint Thomas-DR link which are currently out of service [36].

As it can be seen, there are not many options in regards of optical fiber links arriving in the territory. On top of that, even if the technology is available in the country, carriers are still not offering circuits such as MPLS links to end users. All this is translated into higher costs for Contact Centers' telecommunications.

It is expected that Terremark's NAP del Caribe in Santo Domingo will be attractive enough for other optical fiber links to be installed in the Dominican Republic. The purpose of the NAP is to provide the Caribbean region's Carrier a Neutral Connectivity and to have International Carriers extending their fiber cables to the Dominican Republic, increasing the amount of connectivity to the country and reducing the prices of telecommunications [38]. This will depend on the interest generated by NAP among the different carriers.

Alternatives

The NAP del Caribe is working on its first phase and it is expected to become the best alternative. Meanwhile Contact Centers could apply some of the following ideas to reduce their costs:

- **When possible, use Internet instead of leased lines for data or voice transmission:** It has been said that the Internet links are also expensive, but they are not as expensive as point to point links to locations outside the country. For data transmission, the Internet could be a useful medium. The Contact Center should leverage if the quality provided by the Internet is acceptable for the operations of its clients. Also, the Internet could be considered as a redundancy path for voice and data transmission (each client must agree to the use of the Internet as primary or backup transmission path).
- **Use voice compression:** If a leased line has to be used for voice transmission, the use of some method to compress voice should be considered. This can be accomplished by configuring the leased lines as a clear channel and implementing technologies like VoIP, VoATM or any other standard that may help to make a better use of the leased line's bandwidth.
- **Limit the telecommunications capacity to current operation's needs:** Dominican Contact Centers should consider the idea of not acquiring more leased lines than the amount of circuits required by the Contact Center's operations at a particular moment. It should be clarified that this is not the way Contact Centers normally work, since they usually have extra capacity in regards to their data and voice connections so they can quickly satisfy new request from clients. But in some occasions this may translate into leased circuits that are not used for several months and even years. It is important to be aware of the amount of time that it takes to install and configure a new circuit (based on experience it may take from 60 to 90 days, plus the amount of time dedicated to tests and extra configuration) and consider this information for company forecast and plans. This will ensure circuits would be ordered on time before they are going to be used.
- **Ask for better prices to the service providers:** Some people say that Dominican carriers and ISP obtain high earnings on their services [32]. When a carrier provides a quotation for a service it is good practice to ask for better prices and different connectivity options. It may happen that there is an available solution through the NAP del Caribe.

Telecommunication Taxes means a high installation and monthly recurring cost

Challenge

This challenge will continue with the high cost of telecommunications in the Dominican Republic addressing the high taxes applied to telecommunications services. In the Dominican Republic, the following taxes are assigned to Telecommunications services:

- **ITBIS:** “The ITBIS is a value-added tax applicable to the transfer and importation of most goods, and to most services (Art. 335). The rate of the ITBIS is 16% (Art. 341).” [39]
- **CDT:** CDT stands for “Contribución al Desarrollo de las Telecomunicaciones” (Telecommunication Development Contribution). The service providers charge a 2% rate of the provided service to the final users (Art 45.1 in Telecommunications General Law 153-98). The objective of this tax is to help the development of the telecommunications in the Dominican Republic. [40]
- **ISC:** ISC stands for “Impuesto Selectivo al Consumo” (Selective Consumption Tax): This tax is applied to some products that have been selected by the government like alcohol, tobacco, telecommunications, electronic bank transactions, insurances, etc. This percentage varies depending on the product. For telecommunication services it is a 10% of the value of the service [41].

This means that a 28% rate of taxes is applied to telecommunication services in the country. This increases in a significant way the telecommunication’s installation and monthly recurring cost for Contact Centers.

Alternative

Free Zones are a geographical area established by the Dominican government for the purpose of being an incentive for foreign investment. Free zones have low or non-import/export tariff duties, low or reduced taxes paid to the hosting government and lighter regulations and restrictions [42]. Traditional free zones are located in industrial parks, surrounded by high walls - to limit the incoming and outgoing access - and have one or more customs stations. There is another type of free zone which is called “Special Free Zone”. Special Free Zones are not located inside an industrial park, neither have they required to be surrounded by high walls nor have a dedicated customs office. The Dominican government has provided the option to Contact Centers to become special free zones.

This means that Contact Centers has two options to reduce taxes:

- **Having their physical facilities in a free zone industrial park.**
- **Becoming a special free zone.**

If the Contact Center opts for any of the two previous options, it will not pay ITBIS or the ISC, but the CDT will be charged for any service provided physically located in Dominican territory.

Cost of electricity is high

Challenge

There are two important factors that contribute the high cost of electricity in the Dominican Republic. One is the high cost per watt and the second is the cost of maintaining backup electricity to mitigate the effects of the bad quality of the service.

Electrical blackouts are an old problem in the country that still has not found a definitive solution. On top of that, in some zones of the country the distribution loss factors obligate companies to operate with backup power generators even when there are no blackouts. During the second week of October 2009, the company I work for had to operate with backup generators during several hours, since the quality of commercial electricity was poor. This translates in expending money in combustible and extra maintenance.

Contact Centers must take into consideration the electrical limitations, since electricity is a key player in this business.

Alternatives

There are no alternative options in regards to paying the electricity bill for the current cost and having backup power generators to minimize the effects of the poor electrical quality. Contact Centers, and any other business that depends on electricity, must have an alternative way of generating extra power. Basically the Contact Center must ensure electricity is being used in an adequate way. Some ideas to maintain electricity as low as possible are:

- **Electrical infrastructure should be wisely designed:** The different areas of the center should be divided into small electrical regions. This will permit that different zones could be powered up without providing electricity to the whole center. Unused areas will be powered down when they are not being used.
- **Whenever it is possible, use low-consumption devices:** these devices consume fewer watts than similar non-low-consumption devices and helps keeping the electricity bill as low as possible.
- **Remove unnecessary electrical plugs:** Extra plugs may be used by the Contact Center personnel to connect devices such as personal cell phones or laptops.
- **Write and implement policies and educate the personnel:** the Contact Center personnel should be aware of the company's practices in regards to electricity, thus contributing to energy savings.

The support escalation matrix for service providers and vendors does not always adapt to Contact Center needs

Challenge

There are Contact Centers that works a 24/7 shifts. This means that Contact Centers must have support from their vendors and service providers. Most device vendors will offer a 24/7 support, but the situation may not be the same with telephone carriers and Internet providers. One of the main carriers

of the country (and the oldest) did not have 24/7 help desk support until December 2009. Still, this carrier does not include an acceptable formal escalation procedure that adapts to Dominican Contact Centers' reality. Meaning that after a ticket is opened with their Help Desk, the minimum response time is six hours, and it is not an acceptable time for a Contact Center. The process could be accelerated, by calling the right people and especially the business consultant. There are no legal actions that could be taken against the Carrier, while they respond under their stipulated time. One curiosity about that carrier is that for outage happening due to a cut on an optical fiber link, the time they spend repairing it does not count for SLA's calculations for availability of service.

Most Contact Centers charge money to their clients by hour worked per agent. If there are five agents working eight-hour shifts, it means that 40 hours (five agents by eight hours) are charged for a normal day of work. If it is taken into consideration that Contact Centers might have hundreds of employees, a 10 minute outage would result in several thousand being lost (the center cannot charge that money to the client and has to pay agents that idle time).

Alternative

The alternatives to this challenge are:

- **Have more than one Carrier and/or service provider:** This is a good practice for all business (in or outside the Dominican Republic) that depends on data or voice circuits. Redundancy of carrier and ISP should be mandatory to ensure the operations of the Contact Center will be maintained in the event of a failure. Also, it serves as a workaround when carriers do not respond in a timely fashion to outages. One "horror" story I feel the need to share in this document happened on a Sunday eve at 12:30 AM. There was an Internet outage. When the help desk was contacted, their response was that the report was taken and that as soon as a technician arrived after 8:00 AM, somebody would pay attention to the problem. That night, 24 employees did not work since 12:30 AM until 9:00 AM. That night I became a famous client in that company.
- **Negotiate hours for support:** If the service provider or vendor does not formally provide support during non-business hours. There must be a list of vital people to be contacted during non-business hours in case there is an outage.
- **Service providers and vendors must be aware of the working hours of the Contact Center:** The communication between the Contact Center and the service provider or vendor is important. They should know the hours of operations of the Contact Center. Any maintenance that may affect any of the Contact Center's services or devices must be informed and planned ahead.

Different ISPs or Carriers sharing the same lines

Challenge

It has been recommended that every company that depends on telecommunication services must have at least two service providers to offer redundancy of the service. This suggestion assumes that different carriers and ISPs will provide different communication routes that will not interconnect at all. In the Dominican Republic, this is not always the case. Most of the data service lines in the country are owned by one service provider. This means that other carriers usually use some of the physical channels from the major provider to transport their own data and, in most of the occasions, the connections that goes

to the ARCOS-1 or ANTILLAS-I links need to be performed through that carrier. This is not the ideal scenario for redundancy strategies, since if an outage occurs with that main carrier there is the risk for that outage to be affecting the secondary carrier as well.

Alternatives

This problem affects contingency planning for Contact Centers and has to be taken into consideration when creating disaster recovery/business continuity plans. Before selecting a secondary Carrier or Internet provider it is important to have the following ideas into consideration:

- **The secondary provider should know it is a secondary provider and who the primary provider of the service is:** The tentative provider should be informed about the reason for hiring its services. The carrier or vendor should know who the primary provider is, so they could offer a solution that meets the requirements of the company. Questions such as if they own their own service lines, should be asked.
- **Do not assume that the provider uses the same setup for each of their services:** Ask the same question about each service and about each component of the service.
- **Differentiate national traffic from international traffic:** National traffic within the Dominican Republic needs to be differentiated from international traffic or access to international links. For example, there is one service provider that has its own connection to the ARCOS-1 fiber optical ring (meaning it does not depend from the major carrier), but for routing traffic within the country, they use links of another service providers.
- **Request graphical diagrams of the service configuration:** The provider should supply graphical diagrams about their routes and how these routes will guarantee the redundancy of the services for the Contact Center.
- **The provider should explain if they offer a real alternative for contingency:** In case that the possible provider uses links from the main vendor, it will have to explain their strategy to guarantee the service of the Contact Center will not be affected if there is an outage on the main provider. If there are no options available and the second chosen provider has some dependency on the main vendor, the Contact Center must understand which outages will affect them and how. For example, if the second provider uses the main vendor's link to access the international networks, this means that a national outage at the main provider will not harm the Contact Center's operations. There are providers that use an alternate vendor for load balancing of their traffic, meaning that an outage on that vendor will mean slowness or denial of service due to the high amount of traffic.
- **The proposal should be written:** If a provider is chosen, the final agreement should be written on paper and signed by the appropriated parts.
- **Change of service providers should be considered:** If the contingency solution with the second provider is not being effective, changing vendors should become an option.

International Line Services setup takes a long time.

Challenge

Even if this challenge does not exclusively belong to the Dominican Republic; it is a general situation that has to be included since it affects Call Center operations planning. The process of ordering and configuring international voice and/or data circuits from Dominican Republic to a location outside of the territory may last several months. The reason for this long setup time is because international facilities are not necessarily pre-configured, meaning the carrier might have to extend new wires and perform several physical interconnections. The vendor must provide the amount of time for delivering the circuit to the desired destination. And to the specified time it is safe to add one or two weeks for extra configuration, troubleshooting and managing any unexpected situation.

Alternative

Planning ahead; this is the wiser alternative to handle this challenge. The different departments of the Contact Center (sales, operations, upper management) needs to be clear in regards of the amount of time that it may take to setup a new international circuit, so they could take this information into consideration when negotiating with clients. From my personal experience, I still do not know a carrier (Dominican or from USA) that has installed and configured a circuit in less than the agreed time, but know several vendors that have completed the installation after one or two weeks from the original predetermined time.

Not enough IT trained professionals in the Contact Center area.

Challenge

Contact Center technology is specific for that kind of business. Technologies such as ACD, IVRs or Predictive Dialers are not necessarily known by IT professionals. This means that, unless the hired IT staff has previously worked in the Contact Center industry, the personnel will have to receive additional training. Depending on the type of systems that are being used, it may take several months. Most vendors will include basic training about their products in the installation of the new platform; but for advance system management, additional training must be purchased.

Alternative

If enough qualified IT personnel is not found to work with Contact Center-specific technology, the company must evaluate the idea of either hiring external advisors to perform the job or to provide the necessary training and classes to their IT employees. Another option is to outsource Contact Center-related equipment (IVRs, predictive dialers, ACDs, etc.) to a third party company which will have its own technical personnel. Educational centers and institutes should consider this challenge and explore if there exists the option of incorporating Contact Center-related courses within their technical curriculum.

On-site and off-site storage limitations

Challenge

Calls performed by Contact Center Agents need to be recorded and stored. CRM data and backups also need to be kept and maintained for a specific period of time. Clients might define the retention time for storage of the information that is related to their operations. Other elements that need to be considered for retention time selection are the type of services that are being offered and the Contact Center policies. The stored information needs to be protected and maintained for disaster recovery purposes. This means that Contact Centers should have enough storage capacity to handle their needs and must ensure the protection of the information.

Contingency planning is important from a security perspective, but not every Contact Center has a second site or off-site place to store the data. There are not many options for Dominican business that wants to outsource their storage needs with a Dominican company; most of the options seem to be outside the country.

Alternative

If the center does not have space or a physical location to provide safe storage, outsourcing the backup and storage service should be considered as an option. There are several companies that offer online backups of data for a decent price. This solves the problem of not having an off-site and secure place to store this information. For on-site storage, there are several solutions such as NAS or external hard drives with more than 1TB at reasonable prices.

VoIP through the Internet is not a good idea

Challenge

The Internet traffic is not stable. It is difficult to predict its behavior and almost impossible to be controlled by one particular company. VoIP have permitted business to handle voice through the same physical connections used for handling data via the TCP/IP suite of protocols within their own Local Area Networks.

From a wider perspective, applications such as Skype and similar work fine for home users and would do the job for companies that desires to lower their long distance business calls. The sound is relatively decent over the Internet and if a call is cutting or with delays, the users can try the call again or continue the call at another moment.

For Contact Centers the circumstances are not the same. Contact Center Agents are providing a service to customers. For operations such as customer service, the customers may not be in a good mood and having a line that cuts or is hard to hear may make the situation worst.

Using VoIP through the Internet for Contact Center's operations as the primary telephony medium is not a good idea for most of the cases. On the other hand, VoIP may serve as a backup medium, used for contingency purposes.

Alternative

The following are some recommendations about using VoIP within a Contact Center:

- Use of VoIP through a clear channel, not the Internet.
- Use VoIP through the Internet as a contingency medium. Not as a primary line. Clients should know about this option and must agree with it.
- Evaluate which operations are suitable for using VoIP through the Internet. There are operations that may not require agents to talk with final customers, but will use the phone to call agents or another type of personnel at other centers. These calls could be set using VoIP over the Internet.

Human Resources and Payroll systems needs to be adapted to Contact Center Needs

Challenge

Dominican Human Resources and Payroll systems are not necessarily customized for the Dominican Contact Center reality. This is because most companies in the country either do not work 24/7 shifts or do not pay employees by hour. Contact Centers tends to pay their agents by hour and not by a fixed salary and payroll systems may not be prepared for this payment style.

There are very good recruitment systems, but sometimes these systems are not very friendly when 60 or 70 agents need to be recruited at once. The usual complaint is that it takes too many steps to add new candidates. This complaint may be valid or not (probably the center needs to have a better organization of its workflow), but the important idea to be extracted is that human resources system may need adjustment to work within Contact Center's fast activities of the day to day.

In regards to Payroll, the situation is more complex. Systems should take into considerations circumstances such as having agents working rotating shifts, having different days off on different weeks, working extra hours in a particular week, working some nocturnal hours, and being assigned to different projects with different payments per hour. Most Dominican payroll systems are not prepared for such amount of flexibility, causing problems to the payroll and operations department.

Alternatives

In the Dominican market, there are Human Resources and Payroll systems that comply with Dominican laws. The companies which developed these systems are usually willing to create customize modules for the Contact Center. The most important ingredient is a good communication between the Contact Center and the developing company. The Contact Center has to be clear and specific explaining their needs. Payroll and Human Resources personnel should be involved in defining the requirements joined by the Information Technology department. Topics to be considered include: how the application will obtain the hours worked by the agents, salary per hour for the different positions, activities of the agents that are paid and which ones are not (for example, if breaks or lunch hours are going to be paid), how often payment will be performed, will agents work for more than one specific client, will agents have different shifts, etc.

Proposed Standards and Best Practices for Technological Infrastructures at Contact Centers in the Dominican Republic

Standards

The following set of proposed standards has been developed with the purpose of ensuring that Dominican Contact Centers will provide outsourcing service to foreign customers with the appropriated level of quality and to ensure customer satisfaction and willingness to outsource more work to Dominican Centers.

These standards have been created considering the needs identified within the Contact Center domain model, the technological requirements for the operations, the reasons why clients outsource their Contact Center services and the technological challenges faced by Dominican Contact Centers.

The standards have been divided in different sections for its better understanding:

1. Contact Center Operations

- 1.1. Contact Center's operations should not violate Dominican laws, laws of the client's country and laws of the customer's country. Each Contact Center must understand the implications of their operations and make sure they are legal under Dominican laws and the target country or countries. The violation of the law could result in criminal prosecution for the Contact Center and its owners and it also causes damages to the image of the Contact Center industry in the Dominican Republic.
- 1.2. The Contact Center must understand any regulations that apply to the provided services in the target country or countries.
 - 1.2.1. For outbound operations such as telemarketing or any other similar activity, the Contact Center should be aware if there are any laws in regards to scrubbing dialing list against "do not call" lists. Also, it should be checked if there is a maximum abandon rate limit for the places being dialed.
 - 1.2.2. There may be special laws regarding offering services to people with disabilities, aged-up people and underage.
- 1.3. Contact Centers must not send unsolicited e-mail either to clients or to customer's clients. This may be illegal in some countries and also will result in the banning of Dominican IP addresses and email servers.
- 1.4. For inbound operations, there must be a defined service level for each project or functionality. The industry standard is 80% of the calls must be answered before 20 seconds waiting in a queue, but service levels must be decided depending on the type of industry. In most of the cases this will be a client's decision.
- 1.5. A technological profile of each Contact Center Operation must be maintained by the Technology Department. This profile must include the types of operations that are performed

on behalf of the client, required technology and any special configuration needed for day to day production and training sessions.

- 1.6. Daily tasks within the operations environment must use technological aids to keep to a minimum the human errors and provide quick results. Human errors may affect the Contact Center operations, thus affecting the quality of the service that is being provided.

2. Customers' Information

- 2.1. Contact Centers will be responsible for handling the information of the customers and have to take measures to avoid unauthorized disclosure of this information. Information security breach could result in lawsuits for the Contact Center and/or its clients and bad image.
 - 2.1.1. Contact Centers must develop a set of policies and procedures to prevent unauthorized disclosure of customers' information.
 - 2.1.2. Contact Center's employees must be trained to understand and practice the security policies and procedures established by the company.
 - 2.1.3. Contact Center Employees, contractors, vendors, assessors and clients must sign confidentiality agreements customized for each one of them.
 - 2.1.4. Supervisor, Team Leads, Account Managers and Operation Managers must be aware about any sensitive information that is being handled either formally or informally by the Contact Center's agents. The Account Manager/Operation is responsible for ensuring that adequate security measures are placed to protect the disclosure or bad usage of this information.
 - 2.1.5. Contact Center operations that handle high levels of sensitive information must be physically isolated.
- 2.2. Contact Centers that handle business on behalf of companies that compete among each other must maintain those operations away from each other. If it is possible, these operations must be located in different rooms or floor levels. The idea is to isolate each of these companies' operations from their competitors.
- 2.3. Contact Center's equipment must be protected against viruses and spyware, to prevent attacks from malware and/or any type of malicious code. Malware could cause security breaches, information loss and system problems.
- 2.4. Usage of software like instant messaging, email and internet browsers must be regulated. Measures needs to be taken to avoid the unauthorized disclosure of sensitive information through this medium.
- 2.5. Change management policies and procedures must be implemented to protect any technological change that may affect production. These procedures must include testing

documentation. Unplanned changes to the operations environment might cause disruption within the service that is being provided.

- 2.6. The Contact Center must provide a Business Continuity plan that will guarantee their clients the continuity of their operations in the event of a failure or disaster.

3. Contact Center Software

- 3.1. Copyrighted Software must be properly licensed. Managements of software licenses must be performed. The use of illegal software could result in criminal prosecution for the Contact Center and its owners and it also causes damages to the image of the Contact Center industry in the Dominican Republic.
- 3.2. Contact Center software purchases within the Operations environment must be justified from a work perspective.
- 3.3. Contact Center must have an inventory of software used for operations (either developed in-house or purchased from a vendor). The inventory must have the specifications in regards to software purpose, requirements and positions/projects that are using them.
- 3.4. Application developed in-house must follow a software development policy that must include procedures for gathering application requirements, a development work plan, data validation methods, guidelines for testing the application before it is deployed within the production environment, process for applying application updates, process of rolling back application changes.
- 3.5. Human Resources/Recruitment department must have a database to keep track of the potential candidates. The database must permit the ability of searching for shift availability, languages spoken, abilities, age, education, etc.

4. Contact Center's equipment

- 4.1. Contact Center's equipment must be bought or leased according to the Contact Center's business objectives and chosen services.
- 4.2. The sales and operations department must understand the main features and capabilities of the Contact Center. This will ensure that adequate services are being offered to current and potential clients.
- 4.3. For equipment that is physically located in the Contact Center, it must be installed in a dedicated area that is physically protected from unauthorized access. This area must have the necessary characteristics in regards to air conditioning, space, electricity, energy backup systems and electrical ground. Equipment that is not located in an isolated area could be manipulated by unauthorized personnel, causing equipment damage and/or disruption for the Contact Center operations. Environmental conditions of systems must be implemented to guarantee the equipment performance and life.

- 4.4. Devices must be identified by their name to allow an easy way to recognizing them. Easy recognition will improve outage management and maintenance procedures.
- 4.5. Peak hours of operations must be identified and critical equipment must not be modified during critical hours, unless there is an emergency situation.
- 4.6. Preventative maintenance must be scheduled and applied to Contact Center's equipment, to ensure the good functionality of the devices.
- 4.7. Contact Center's equipment must be administered by trained personnel. The Human Resources department must have proof of claimed competency.

5. Contact Center Services

- 5.1. The Contact Center must ensure that the service offered to the client complies with the Statement of Work signed between the Contact Center and the client.
- 5.2. The Contact Center must design a contingency plan to ensure operations will continue in the event of an outage or disaster.
- 5.3. Before using a service that cannot guarantee the quality of the operations, the clients must understand the meaning of using the chosen service and must agree to its use.

6. Service providers and vendors for the Contact Center

- 6.1. Carriers and Internet Service Providers must provide clear SLAs and support options for the hours of operations of the Contact Center.
- 6.2. Carriers and Internet Service Providers that are being used as backup vendors must provide clear SLAs and support options for the hours of operations of the Contact Center. They must provide proof about how an outage in the main provider will not affect their capability of serving as a backup vendor.
- 6.3. A list of services providers must be available listing the vendor's services and SLAs for service installations. This list must be used to plan new service installations.
- 6.4. For each service, an SLA for service availability must be provided by the vendor along with a list of support contacts and an escalation matrix. There must be a solution for obtaining support during the working hours of the Contact Center.
- 6.5. For all critical equipment in the Contact Center, there must be a designed contingency plan in the event of a failure. There must be a solution for obtaining support during the working hours of the Contact Center.
- 6.6. Service outages must be registered. The record must include: date and time of the outage, service, root cause and the resolution. This data will be used to calculate the monthly downtime due to service provider outages.

7. Quality Assurance and Workforce Management

- 7.1. Quality assurance and workforce management functionalities must be included when designing the Contact Center. Quality assurance will be in charge of monitoring and providing feedback to the Contact Center's agents to ensure the quality of the service provided. Workforce Management will be in charge of generating production reports and performing agent scheduling.
- 7.2. For each service provided by the Contact Center, it must be determined a set of quality parameters that must be measured to develop a quality program. The software/equipment used by the Contact Center must be able to provide reports and data that will permit QA and WFM to perform their jobs.

8. Electricity

- 8.1. Contact Centers must have a redundant power source to ensure that electricity is maintained while electrical blackouts occur.
- 8.2. Contact Centers must have a UPS or similar technology to support network and computer systems while power generators initiates in the event of a blackout.
- 8.3. Equipment and racks must be appropriated grounded. The ground of equipment will prolong the life of the equipment, provide protection to small electrical discharges and reduce the static which may cause damage to the equipment.

9. Information Technology Department and Personnel

- 9.1. Information Technology personnel's task, roles and responsibilities must be clearly defined and identified.
- 9.2. There must be available helpdesk support personnel either on site or on call during the operation hours of the Contact Center.
- 9.3. Help Desk services must be defined and known by the Contact Center employees.
- 9.4. Help Desk SLAs must be defined and known by the Contact Center employees.
- 9.5. The Information Technology Department must maintain a list of operational procedures and make them available to the appropriated personnel.

Best Practices

The following is a list of good practices that Contact Centers may take into consideration. These good practices enforce some of the proposed standards, while others make easier the day to day operations.

These best practices have been created considering the needs identified within the Contact Center Domain Model, the technological requirements for the operations, the reasons why clients outsource their Contact Center services and the technological challenges faced by Dominican Contact Centers.

1. General

- 1.1. The center should comply (or better, get certified) with one or more security and services standards such as ISO 27001 or COPC-2000.
- 1.2. If the Contact Center is not located in an industrial free zone, it should consider applying for Special Free Zone treatment. This will reduce the monthly recurring and installation costs, allowing the offering of better prices to clients.

2. Operations and Training

- 2.1. Training Rooms should have the same capabilities that operation has. This brings two benefits for the center: trainings will be delivered in an environment similar to operations environment and the training room could be used as a contingency site, in case there is a problem with the production area.

3. Contact Center's equipment

- 3.1. Contact Centers should buy modular technological equipment, meaning that as the operations are evolving different functionality could be added.
- 3.2. Contact Centers should have some electronic media or an intranet, to deliver information to employees in a quick and effective way. This information may include news, events, policies, procedures and operational changes.

4. Useful subscriptions

- 4.1. Contact Center Disaster Recovery and/or Business Continuity Planning teams should be subscribed to informational sites such as the National Hurricane Center [43], which provides useful information related to natural treats such as hurricanes and tropical storms.
- 4.2. Contact Center Information Security teams should be subscribed to informational bulletins such as the one provided by US-CERT [44], which provides information regarding new vulnerabilities in software and technology.

5. Information Technology

- 5.1. The IT department should have a way to track, administer and document the request and problems from the different Contact Center's departments. A ticketing system would be a good solution (there are open source options on the market), that will permit the assigning of ticket to different resources and to generate reports about the IT department's efficiency.
- 5.2. The IT department should maintain a knowledge base with information about commonly known problems and their solution. This database will help to speed the resolution of problems within the Contact Center environment.

6. Software

- 6.1. Human Resources and Payroll systems should be customized to comply with Dominican laws. If the Contact Centers pays per hour, it should ensure there is a way to track employees' worked time.

7. Electricity

- 7.1. Contact Center's electrical design should be wisely planned from an energy savings point of view. An idea would be to divide the center into different electrical areas that could be independently powered up, to reduce the energy used when not all the seats are being used.
- 7.2. Power consumption of devices and equipment should be evaluated before purchasing. Energy savings could be achieved by selecting low-consumption lights and PC Monitors that comply with energy savings standards.

Conclusion

The Proposed Standards and Best Practices for Technological Infrastructure at Contact Centers in the Dominican Republic that have been presented in this document, provides a set of guidelines for new and current investors within the Contact Center industry in the Dominican Republic.

To provide a service with quality, Contact Centers must understand why companies decide to outsource their work to countries like the Dominican Republic and their expectations in regards to the job that is going to be completed.

This paper has been developed by creating a domain model of Contact Centers. The objective is to explain in a generic and simple way how Contact Center's operation works and their general requirements. The domain model exhibits the importance of technological platforms and systems within the Contact Center environment.

Upon completing the modeling it was identified a set of technological challenges that Dominican Contact Centers need to face, workaround and solve. The reasons for listing these challenges are to show which technological limitations the country has, and to provide a base for the development of the proposed standards and best practices.

I understand this research could bring a lot of benefit for the Contact Center industry in the Dominican Republic and could contribute, in the future, to the development of the country.

Appendix A: Interviews (or Contact Center questionnaire)

Interviewing people that works in Contact Centers during business hours is a difficult task. The Pontificia Universidad Católica Madre y Maestra (PUCMM) signed letters, in our behalf, requesting for interviews in different Contact Centers. The reactions were different in each center, some of the answers we got include: “upper management should approve the interview” (and the approval or disapproval never arrived), others asked for the written interview and- after reviewing it - they declined explained that some of the questions were confidential information, others never responded.

Of the seven Contact Centers that received letters, two responded to the interview request. Only Human Resources employees actually answered some of the questions they had some knowledge on.

We obtained some informal interviews with people who worked for Operations, Training, Human Resources and Technology. These people were interviewed outside their working environment; since upper management did not allow us to visit the centers and none of their names can be mentioned in this paper.

Other information was obtained thanks to the CEI-RD (Centro de Exportación e Inversión de la República Dominicana - Center for Export and Investment of the Dominican Republic). They provided information such as the list of current formal Contact Centers registered in the Dominican Republic for 2009 [3] and their 2007 report about offshoring attractiveness strategy for the Dominican Republic [15].

Instead of publishing each individual interview, the decided methodology is to post the interview questions with the obtained answers from either the CEI-RD or interviewed people.

Interviewee's Profiles

Since most of these people should remain in an anonymous condition, no names will be shown. The following profile descriptions will provide an idea of the kind of work and experience they have in the Contact Center Business.

The following people were informally interviewed:

Anonymous Operation's Manager at a Contact Center in Santiago [45]: This person has more than 10 years of Contact Center experience. Have worked in four of the biggest Contact Centers in Santiago and has worked in different areas such as being a Contact Center agent, Quality Assurance agent, Lead Manager, Account Manager, Human Resources Manager and Operations Manager. Operation experiences involve telemarketing, customer service, back office and BPO services.

Anonymous Human Resources Manager at a Contact Center in Santiago [46]: With two years of Contact Center experience. This person previously worked as a Human Resource employee at a hardware store.

Anonymous Account Manager at a Contact Center in Santiago [47]: With two years of experience in Contact Centers. This person manages operations that works 24/7 shift. Has experience with customer service and back office operations. It is a former employee of a textile Dominican free zone.

Anonymous Information Technology Manager at a Contact Center in Santiago [48]: This person has 10 years of Contact Center experience and has worked in three of the biggest Contact Centers of Santiago and in a medium sized one. It has up to six years and a half working with Contact Center's technology and has experience as a Contact Center and Quality Assurance agent.

Anonymous Senior Information Technology Manager at a Contact Center in Santiago [49]: With seven years of Contact Center experience, this person has worked at three of the biggest Contact Centers in Santiago in the Information Technology Department. This person has experience with telemarketing and other outbound services, customer service, back office and BPO.

Anonymous Agent at a Contact Center in Santiago [50]: Has three years of Contact Center experience, having worked in two of the biggest Contact Centers of Santiago.

Anonymous Information Technology Technician at a Contact Center in Santiago [51]: Has three and a half years working at Contact Centers. It is working at one of the biggest Contact Centers in Santiago and performed internship in a small sized Contact Center.

Anonymous Former Human Resources Employee at a Contact Center in Santiago [52]: One year experience in Contact Centers. Worked in the Human Resources department of a medium sized Contact Center located in Santiago.

Questionnaire

Following is the list of question with the answers provide by the interviewees and/or the information provided by the CEI-RD.

1. How many Contact Centers does the Dominican Republic currently have?

In the present (2009), the Dominican Republic has 63 formal Contact Centers [3].

Note: In regards to this question, we had added the word "formal" to the amount of Contact Centers that the CEI-RD has registered, because after reviewing the list we were able to identify some small Contact Centers that are providing services but are not listed in their document.)

2. What kinds of services are being offered by Contact Centers in the Dominican Republic?

According to the list of Call Centers 2009 [3] sent by the CEI-RD, the following types of services are being offered in the Dominican Republic:

- Outbound:
 - Telemarketing/Sales
 - Lead generation
 - Debt collection
 - Surveys
 - Market research
 - Customer reminders
- Inbound:

- Customer Service
- Customer acquisition and retention
- Tech Support
- Sales
- Appointment Settings
- Third-party Verification
- Reservations
- BPO:
 - Software Development
 - Fulfillment
 - Order processing
 - Online education support
 - Monitoring
 - Translation services
- Back Office:
 - Data Entry
 - Email response
 - Fax response
 - Data integrity check
 - Document transcription
 - Web chat

3. What languages are being supported by Dominican Contact Centers?

Spanish, English, French and Italian [3]

4. What shifts are being covered?

There are currently Contact Centers working 24/7 shift [3]

5. What are the main elements (in regards to human resources and technology) of a Contact Center?

“Contact Centers should document all their processes and policies. [46]” – Human Resource Manager, Santiago

“There should be technological tools that make easier the communication within all the employees.” [46] – Human Resource Manager, Santiago

“Employees should be aware of the main Contact Center Policies.” [48]– IT Manager, Santiago

“There should be redundancy for telecommunication and data services.” [48] – IT Manager, Santiago

“Vendor’s and service providers support is critical.” [49]– Senior IT Manager, Santiago

“In terms of Human Resources, the basics resources are: agents, supervisor and quality assurance. In terms of management, the basic resources are: Human Resources, Information Technology and Operations” [53]- HR, Santo Domingo

“Confidentially is a basic element for Contact Centers. It’s important for our clients” [53] - HR, Santo Domingo

6. What elements should a Contact Center take into consideration to offer a service of quality to their clients?

“There should be trained IT personnel for administering Contact Center’s technology.” [48]– IT Manager, Santiago

“Good communication with the clients.” [47] – Account Manager, Santiago

“Operation processes should be clear and should be controlled.” [45]– Operations Manager, Santiago

“Personnel should be prepared to handle client relationships.” [45]– Operations Manager, Santiago

“Good language skills in whichever language the service is delivered. Also a healthy work environment is very important to ensure quality is achieved.” [46] - HR, Santo Domingo

“To continuously request for feedback from our clients, is a technique that has turned into good results in our relations with clients.” [53] - HR, Santo Domingo

“Be careful with investments in equipment and technology, quality tools can help to achieve goals while the quality is maintained.” [53]- HR, Santo Domingo

“A well trained Quality Assurance team can help the on-time detection of any flaws in the process.” [53]- HR, Santo Domingo

7. Based on your experience, what are the ideal circumstances you would like to see in your Contact Center:

○ General:

“Well defined budgets for each department.” [48] – IT Manager, Santiago

“Better education in the country and the enforcement of English taught in high school so we have a higher bilingual population. The methodology of teaching English in the country [high school] does not prepare someone with the minimal English levels needed for Contact Centers. ” [53] - HR, Santo Domingo

○ Human Resources:

“To find adequate resources for the work that is going to be performed.” [47] – Account Manager, Santiago

- Operations:

“High capacitated QA (Quality Assurance) and WFM (Workforce Management) departments.” [45] – Operations Manager, Santiago

“Continuous training for the personnel.” [47] – Account Manager, Santiago

- Technology:

“Redundant equipment and services, enough personnel to provide assistance to each working shift eliminating or reducing the “on call IT Agent” job. A significant reduction in telecommunication costs.” [48] – IT Manager, Santiago

“To have adequate systems for Work Force Management tasks.” [45] – Operations Manager, Santiago

“Payment of extra hours for the Information Technology personnel.” [51] - IT technician, Santiago

8. Which would be the minimum functions for each department at a Contact Center?

- Human Resources:

“Recruitment and Personnel Management.” [53]– Human Resources Manager, Santiago

- Operations:

“Agent Supervision, QA and WFM functions.” [45]– Operations Manager, Santiago

“Continuous training.” [47]– Account Manager, Santiago

“Client management functions.” [45]– Operations Manager, Santiago

- Technology:

“End user support, the rest can be subcontracted. But it would be better to have network administration, user administration and Contact Center technology administration on-site” [49]– Senior IT Manager, Santiago

9. Have you ever worked in a different business aside from the Contact Centers? Which is the most notable difference you have noticed?

“Yes, I worked in a free zone dedicated to the textile area. The biggest difference I had noticed is that the first-line personnel for a Contact Center are different from the personnel required in

a Free Zone. The Contact Center employees are “technically” better prepared and more educated. The downside is that employees do not see the Contact Center job as a career, but a temporary job while they either finish their studies or find something better.” [47]– Account Manager, Santiago

“The stress levels are high, there is a continuous change all the time.” [46]– Human Resources Manager, Santiago

“Yes, there exist various differences, but I believe this is because of the particularities of each industry type. One of the major differences is the recruitment process. In the Contact Center it is a constant job, always evaluating people to fill the demands of the different projects.” [53] - HR, Santo Domingo

10. Are there any limitations for Contact Centers in the Dominican Republic?

“It is hard to obtain the adequate personnel to perform the operational jobs and it is also hard to find the appropriated personnel to deliver the training.” [45]– Operations Manager, Santiago

“Not many connectivity options (optical fiber) arriving to the Dominican Republic. Also the cost of electricity is too high.” [48] – IT Manager, Santiago

“Usually you cannot offer good benefits and incentives package, at least for agents.” [53]- HR, Santo Domingo

11. Does the Dominican Government have any special requirements for the constitution or operations of a Contact Center?

“No, that I am aware of.” [45]- Operations Manager, Santiago

“If you are applying for the condition as a Special Free Zone, your Contact Center must meet certain requirements but these are in terms of investment conditions and building properties. Nothing is specified in regards of the operations.” [53]- HR, Santo Domingo

12. Do you know if there is any Contact Center association or any entity that regulates Contact Centers in the Dominican Republic?

“Yes, I do know one Contact Center association; but it seems they have not being able to fulfill their purpose. The administrative personnel have changed on several occasions. To become a member you need to fill an admission form and pay a subscription fee. Members receive the list of activities and get discount prices for those activities. Their idea was to coordinate all activities related to the Contact Center industry, instead of the CEI-RD. It looks it has not worked the way they thought.” [45]– Operations Manager, Santiago

“Yes, there is an association but we are not member of it.” [53]- HR, Santo Domingo

13. Are you aware of any type of documentation or research (statistic, reports, policies, etc.) about Dominican Contact Centers?

“Not for Operations in the Dominican Republic.” – Operations Manager, Santiago

“Cross Consulting conducted a study for Contact Center salaries in the Dominican Republic.” [46]– Human Resources Manager, Santiago

Another publication that was found was: Offshoring Attractiveness Strategy for the Dominican Republic for the IT – BPO/Call Center Sector Part 1 by Hewitt (March 2007) [15].

14. Does your Contact Center have performed risk evaluations?

“I have worked in several Contact Centers and this is the first one I have seen that has performed a risk evaluation.” [48] – IT Manager, Santiago

“Yes, there is a department in charge of Disaster Recovery planning for the physical installations. They are in charge of leading evacuation of the site in case of a disaster. They are part of the Physical Security team of the Free Zone Park we are located at. The Disaster Recovery plan for IT is elaborate by the Information Technology department.” [54] - Physical Security, Santo Domingo

15. Do you currently have a written contingency plan?

“Yes, we do have a contingency plan. We just reached got certified in ISO 27001(second company in the country and first call center in the territory) which is related to Information Security and having a written contingency plan is part of the requirements.” [48] – IT Manager, Santiago

“Our Disaster Recovery plan for the physical installations and people evacuation is written and modified each four months and distributed to the lead team members of the plan.” [54] - Physical Security, Santo Domingo

16. Do you perform tests of your contingency plans?

“Yes, once a year.” [48]– IT Manager, Santiago

17. Are the Contact Center employees trained in regards to the contingency plan?

“Yes they are.” [48]– IT Manager, Santiago

18. Does the scope of your contingency plan cover technological disasters or and human resources security?

“The ISO 27001 asks for technological disasters, but this is the Dominican Republic and we can be hit by hurricanes, floods, earth shakes and national strikes. This means we should be prepared to maintain operations or to continue operations in the event of any of these disasters. We are including human resources security as part of our contingency and disaster planning.” [49]– Senior IT Manager, Santiago

“Usually these plans are designed and maintained apart by its related department.” [53] -HR, Santo Domingo

19. Which are the technological resources/tools that are being used in your area?

“Aside from Contact Center specific technology, we have several network monitoring tools and a help desk ticketing system. We are also developing a change management system to keep track of changes, since this is an important task within any business and Contact Centers are constantly changing.” [48] – IT Manager, Santiago

“In Human Resources we basically need computers, telephones, Internet access and custom Human Resources software for administering the personnel and perform the recruitment process. We may not have huge demands opposed to the production area and Information Technology departments of the company. Their needs are high and exclusive.” [53]- HR, Santo Domingo

20. Do you have a written process for equipment or device disposal?

“Yes we do. Equipment’s hard drives or memory have to be wiped out and an inventory of disposed equipment is maintained.” [48] – IT Manager, Santiago

“We have a green policy towards disposals.” [53]- HR, Santo Domingo

21. Main challenges –technological speaking – that your operations has faced?

“Lack of effective support from vendors and service providers” [48]– IT Manager, Santiago

22. Have your center experienced any security incident?

“Yes. In fact almost every Contact Center I know has had one.” [48] – IT Manager, Santiago

23. Do you currently have an incident response plan?

“Yes, we do.” [48]– IT Manager, Santiago

24. Do your employees/third-party/service providers/clients sign any kind of confidentiality agreement?

“Yes all of them need to sign a customized confidentiality agreement.” [46]– Human Resources, Santiago

25. Do you have any written policy to control remote connections?

“Yes, we do.” [51]– IT Manager, Santiago

26. Do any of your security policies have been a limitation for acquiring new clients?

“No, because we have explained our policies to the clients and the risks of not accepting them. If they do not agree with any of our policies we make them sign a risk acceptance document.” [48] – IT Manager, Santiago

“Never a limitation, as a matter a fact, it’s a plus for our clients. Sometimes we must include some of their policies.” [53] -HR, Santo Domingo

27. Are you in compliance with any technological or operational standard?

“We are in compliance with the ISO27001.” [48]– IT Manager, Santiago

“We are basing our operations in COPC-2000.” [45]– Operations Manager, Santiago

“We are ISO27001 certified.” [53]- HR, Santo Domingo

28. Do you have any policy against employees working in more than one Contact Center?

“Yes we do have policies.” [45]– Operation Manager, Santiago

“Our company does have policies, but there are always cases of employees working in more than one Contact Center. Sometimes this is not easy to track.” [48]– IT Manager, Santiago

“No, we’re not against employees working on different Contact Centers while they manage their time efficiently and do not affect the hours we paid them to work in our operations.” [53] - HR, Santo Domingo

29. Do you monitor the work performed by your employees? How?

“Call and screen monitoring is a requirement for many of our clients. In fact for telemarketing this is a must. We use designed equipment to perform these tasks. Employees are aware of this monitoring and they receive constant feedback from Quality Assurance Agents.” [45]– Operations Manager, Santiago

30. How would you compare Dominican Contact Centers with other Contact Centers in Latin America?

“Contact Centers Operations in the Dominican Republic are not as developed like in other countries like Mexico. I don’t think there is a Contact Center that has more than 2000 seats in the country. In Mexico you will find Centers with 10,000 seats” [48]– IT Manager, Santiago

“We are an efficient resource for external companies; you just have to see how many Contact Center the country has. We still have opportunities for improvement, to reach a more mature level. We are still under development.” [53]- HR, Santo Domingo

31. What are the advantages that we offer – as a country- to the Contact Center industry?

"Dominican republic offers the following advantages: proximity with United States, understanding of the culture of the United States, bilingual personnel, educated personnel, robust technological infrastructure (compared with other Latin American Countries)." [48]– IT Manager, Santiago

"I would say location and the quality of human resources." [53] - HR, Santo Domingo

32. What kind of incentives exists for the Contact Center industry?

"The Dominican government is proving the option to Contact Centers to become a special free zone. This reduces the cost of investing and maintaining the company." [48]– IT Manager, Santiago

"There aren't many incentives if you are a private institution and do not apply for the condition of Special Free Zone, taxes kill you." [53]– HR, Santo Domingo

33. With which countries is the Dominican Republic competing in regards to the Contact Center industry?

"Philippines, Mexico, Argentina, Costa Rica (probably)" [45] – Operations Manager, Santiago

"India, Philippines, Costa Rica and Panama" [53]– HR, Santo Domingo

Random Comments

The following are some comments from people who knew we were doing this research. We think that some of them may be interesting:

"Contact Centers receive a lot of resumes, but sometimes it looks like when a resume is not valid for a specific client they toss it away. I think they should be more organized and have a better database to maintain their pool of candidates and call later, if needed". [52]– Former Human Resource employee at a Contact Center, Santiago

"Changes in technological infrastructure can take your operations down. Sadly most of the Contact Centers do not follow change management procedures and you can lose a client because of that". [51]– IT Technician, Santiago

"ISP do not notify when they are making changes. They just do the changes and then pretend it was an outage if something goes wrong." [48]– IT Manager, Santiago

"At least one ISP lied to me when I wanted to have redundant Internet links at our center. We had a 10 MB service with one ISP and decided to hire an alternate ISP. The president of that company affirmed they were not sharing any link with our current ISP. On July 2009 we discovered that this statement was not true, when we lost both internet connections due to an outage on the main ISP facilities." [49]– Senior IT Manager, Santiago

"Clients change their mind a lot, our job is to complete their changes and make them work". [47] – Account Manager, Santiago

Appendix B: Technological Checklist for Contact Centers

Brief Checklist of equipment selection		
Action	Equipment/Capability	
Automatic outbound dialing will be performed	Predictive Dialing Capabilities	Required at least one of these will be needed, depending on the type of outbound dialing.
	Preview Dialing Capabilities	
	Progressive Dialing Capabilities	
	Smart Predictive Dialing Capabilities	
	Outbound messaging delivering	
	CTI	Required
	Soft Phones	At least one of the two
	Hard Phones	
	Reporting capabilities	Required
	CRM Integration	Preferred
	Scripting Integration	Preferred
	Outbound IVR	Optional
Manual outbound dialing will be performed	CTI	Preferred
	Soft Phones	At least one of the two
	Hard Phones	
	Reporting capabilities	Required
	PBX	Required
	ACD (Some ACDs can log outbound calls)	Optional
	CRM Integration	Preferred
	Scripting Integration	Preferred
Inbound calls will be received and automatically distributed to agents	CTI	Required
	Soft Phones	At least one of the two
	Hard Phones	
	Reporting capabilities	Required
	PBX	Required
	ACD	Required
	CRM Integration	Preferred
	Scripting Integration	Preferred
	IVR	Optional
Agents will receive calls directly	CTI	Preferred
	Soft Phones	At least one of the two
	Hard Phones	
	Reporting capabilities	Required
	PBX	Required

		CRM Integration	Preferred
		Scripting Integration	Preferred
		IVR	Optional
Agents will both receive and perform automatic dialing		Dialer with ACD functionalities	Required
		CTI	Required
		Soft Phones	At least one of the two
		Hard Phones	
		Reporting capabilities	Required
		CRM Integration	Preferred
		Scripting Integration	Preferred
		Outbound IVR	Optional
		IVR	Optional
Agents are going to handle emails		Email Server	Required
		CTI	Preferred, emails are handled like a call and distributed to agents
		ACD	
		Email Client	Required
Agents are going to handle web chat sessions		Web Server	Required
		Web Chat Client (for the website)	Required
		CTI	Preferred, chat sessions are handled like a call and distributed to agents
		ACD	
		Agent client	Required

Appendix C: New Campaigns Setup Formulary.

1. General Information			
Name of the client:			
Name of Project:			
Operation type(s) i.e., Inbound, Outbound, Back Office, Customer Service:			
Work Schedule:			
Number of Contact Center Agents:			
Numbers of Contact Center Supervisors:			
Number of Contact Center Team Leads:			
Number of Contact Center QA Agents:			
Max number of CC Agent positions to be allocated.			
Max number of CC Supervisor positions to be allocated:			
Max number of CC Team Lead positions to be allocated:			
Max number of QA Agent positions to be allocated:			
Contacts	Name	Email	Phone
Client Primary Contact:			
IT Client Contact:			
CC Project Manager:			
2- Sensitive Information			
<p>Please inform if the following customer information will be handled by the Contact Center personnel? Formally: Part of the CC Agent job is to work with this kind of information. Informally: This information is not part of the CC Agent's daily functions but it may be received by the CC Agent (example: an end client sends an e-mail for customer support a includes his/her social security number in the body, even if it does not have to)</p>			
Data	Who will handle it	Formally or Informally?	Comments
Name			
Address			
Phone Numbers			
E-mail addresses			
Date of Birth			
Credit Card Information			
Social Security Number			
Medical Information			
Beneficiaries			

Customer's user names			
Customer's passwords			
Property values/prices			
Bank Accounts			
Pictures			
Other sensitive information			
3. Telephony requirement			
Fill the following information if the project will be handling phone calls			
Is there any special technology requirement for the primary line (TDM/VoIP, etc.)?			
Is there any special technology requirement for the backup line (TDM/VoIP, etc.)?			
Customized Music On Hold required (For example clients announcements or music)			
3.1 Inbound Calls			
Direct agent dialing required?			
Do CC agents require a personal voicemail?			
Does the project require a generic voicemail?			
Do agents need to do internal/external/both call transfers?			
Are Supervised/Unsupervised/both transfer capabilities required?			
Line ration (number of lines per CC agent):			
3.1.1 Automatic Call Distribution requirements			
Number of required skills			
Skill Information: Please complete for each skill			
Skill Name	Service Level (%calls answered in less than x seconds)	After Call Work	Assigned DID/DINS
Please attach to this document the desired inbound call flow for each of the skills.			
3.2 Outbound Calls			
3.2.1 Predictive Dialer			
Is predictive/preview dialing required?			
Number of concurrent predictive dialing campaigns?			
Countries that will be dialed:			
Line ration (number of lines per CC agent):			
Time Zone(s):			
Campaign Information: Please complete for each skill			

Campaign name	Contacts/Hour	Abandon Rate	Caller ID
Please attach to this document the desired outbound call flow for each of the campaigns.			
3.2.2 Manual dialing			
Countries that will be dialed:			
Line ration (number of lines per CC agent):			
Manual dialing Information: Please complete for manual dialing function			
Function name		Caller ID	
4. QA Requirements			
Please fill the QA requirements for this project:			
4.1 Call Recording			
Selective/Total Recording required for this project:			
If Selective Recording is required please specify the percentage of amount of calls to be recorded:			
Call recorded should be stored for how long?			
Does the client need to listen to recorded calls remotely?			
4.2 Screen Recording			
Selective/Total Recording required for this project:			
If Selective Recording is required please specify the percentage of amount of calls to be recorded:			
Call recorded should be stored for how long?			
Does the client need to listen to recorded screens remotely?			
4.3 Live Monitoring			
Live monitoring of calls required:			
Live monitoring of screens required:			
Client needs access to live call monitoring:			
Client needs access to live screen monitoring:			
4.4 QA Formularies			
Special QA Form to be designed on Quality Systems:			
Client needs access to QA Forms:			
5. Internet Requirements			
Please specify any need/preference for Internet requirements for this project.			
Full/Restricted/None Internet access required for CC Agents:			
Full/Restricted/None Internet access required for CC Supervisors:			
Full/Restricted/None Internet access required for CC Team Leads:			

Full/Restricted/None Internet access required for CC QA Agents:			
Required URLs			
Describe any special URL link that has to be configured on CC Agents profiles:			
Website Name	URL	Reason	
5. Email Requirements			
Do CC Agents/Team Leads/Supervisors/QA will require e-mail addresses?			
Who will provide the e-mail address (client/Contact Center)?			
How will the e-mail be accessed (webmail, e-mail client, etc.)?			
Describe any special e-mail set up instructions (URL, SMTP/POP servers, exchange server, etc.)			
6. Instant Messenger Requirements			
Do CC Agents/Team Leads/Supervisors/QA will require instant messenger?			
Who will provide the instant messenger (client/Contact Center)?			
How will the instant messenger service be accessed (web chat, IM client, etc.)?			
Describe any special IM set up instructions (URL, IM servers, etc.)			
7. Desktop Applications Requirements			
Please describe any external application that has to be installed on CC Agent's desktops			
Application Name	Description	Developer	Licensed required?
8. Other external connections			
Please describe any external connection the agent has to perform (i.e. FTP, Telnet, VPN, SSL VPN, etc.)			
9. PC Requirements			
Please describe your minimum PC requirements			

Hard Disk	
Processor	
RAM	
Video Card	
Sound Card	
Monitor	
Mouse	
Keyboard	
CD ROM	
Network Adapter	
USB Ports	

Appendix D: Definitions

24/7 Operations: In a Contact Center, a 24/7 Operation is the one that works 24 hours, 7 days a week.

Abandon Rate: *“Percentage of the calls made by an automatic dialing device to prospective customers or by customers to a telemarketer that are not intercepted by a live operator before the prospect/customer disconnects.”* [55]

Abandoned Call: In outbound operations, an abandoned call is *“when a predictive dialer is used, it places more calls into the network than there are agents available to handle them. When there are too many connections and not enough agents, the dialer may hang up on some of those people it called.”* [56] For Inbound operations, this term refers to *“an incoming call answered by your ACD, which is terminated by the person originating the call before it is answered by an agent”* [56]

ACD: See Automatic Call Distributor.

Agent (Contact Center): *“A general term for someone who handles telephone calls in a call center.”* [56]

Algorithm: *“An algorithm (pronounced AL-go-rith-um) is a procedure or formula for solving a problem.”* [57]

ARCOS: is a redundant fiber optical network cable that connects United States with 18 countries from Caribbean and Central America. Dominican Republic has access to this network through two points, one located in Punta Cana and the other in Puerto Plata [35]

ASA: See Average Speed of Answer.

Authentication: *“Authentication is the process of determining whether someone or something is, in fact, who or what it is declared to be.”* [57]

Auto Dialer: *“Is an electronic device that can automatically dial telephone numbers to communicate between any two points in the telephone, mobile phone and pager networks.”* [55]

Automatic Call Distributor: *“A computerized phone system that responds to the caller with a voice menu and connects the call to the appropriate agent. It can also distribute calls equally to agents.”* [55]

Average Speed of Answer: *“An ACD statistic. How long the average caller waits on hold before his or her call is answered by an agent.”* [56]

Back Office Operations: *“The internal operations of an organization that is not accessible or visible to the general public.”* [55]

BCP: See Business Continuity Planning.

BPO: See Business Process Outsourcing.

Business Continuity Planning: *“is the creation and validation of a practiced logistical plan for how an organization will recover and restore partially or completely interrupted critical (urgent) functions within a predetermined time after a disaster or extended disruption. The logistical plan is called a **business continuity plan**.”* [55]

Business Process Outsourcing: *Business process outsourcing (BPO) is the contracting of a specific business task, such as payroll, to a third-party service provider. Usually, BPO is implemented as a cost-saving measure for tasks that a company requires but does not depend upon to maintain their position in the marketplace. BPO is often divided into two categories: back office outsourcing which includes internal business functions such as billing or purchasing, and front office outsourcing which includes customer-related services such as marketing or tech support.”* [57]

Calibrate (QA): *“To standardize the scoring of the quality of customer interactions.”* [56]

Calibration (QA): *“The process of standardizing call center quality. See Calibrate”* [56]

Call Center Agent: *“A call center agent is the person who handles incoming or outgoing customer calls for a business. A call center agent might handle account inquiries, customer complaints or support issues. Other names for a call center agent include customer service representative (CSR), telephone sales or service representative (TSR), attendant, associate, operator, account executive or team member.”* [57]

Call Center: *“Call center is a physical place where customer and other telephone calls are handled by an organization, usually with some amount of computer automation. Typically, a call center has the ability to handle a considerable volume of calls at the same time, to screen calls and forward those calls to someone qualified to handle them, and to log calls. Call centers are used by mail-order catalog organizations, telemarketing companies, computer product help desks, and any large organization that uses the telephone to sell or service products and services.”* [57]

Call Disposition: Refers to the code used by a Contact Center Agent to tag a call. For example calls could be marked as “sales”, “not interested”, “already has the product”, etc. This is useful for reporting.

Caller ID: *“A telephone service that provides for subscribers the name and telephone number of a caller, which appear on a display as the call is being received.”* [55]

Carrier: *“A company which provides communication circuits.”* [56]

CC: Acronym used for either Contact Center or Call Center.

CCC: Acronym used for Customer Contact Center.

CDT: Is a 2% tax that is applied to telecommunications in the Dominican Republic. It stands for “Contribucion al Desarrollo de las Telecomunicaciones” (Telecommunication Development Contribution). The objective of this tax is to help the development of the telecommunications in the Dominican Republic. [40]

CEI-RD: See Centro de Exportación e Inversión de la República Dominicana.

Central Processing Unit (CPU): *“The computing part of the computer. Also called the “processor,” it is made up of the control unit and ALU. Today, the CPUs on almost all computers are contained on a single chip.”* [55]

Centro de Exportación e Inversión de la República Dominicana: The Center for Export and Investment of the Dominican Republic *“is the official Agency responsible for the promotion of international trade and Foreign Direct Investment (FDI).”* [58]

Change Management: *“Change management is a systematic approach to dealing with change, both from the perspective of an organization and on the individual level. A somewhat ambiguous term, change management has at least three different aspects, including: adapting to change, controlling change, and effecting change. A proactive approach to dealing with change is at the core of all three aspects. For an organization, change management means defining and implementing procedures and/or technologies to deal with changes in the business environment and to profit from changing opportunities.”* [59]

Chat: *“A form of interactive online communication that permits typed conversations to occur in real time. Messages are instantaneously relayed from one participant in a chat discussion to all other members in the chat room.”* [55]

Computer Telephony Integration (CTI): *“is the use of computers to manage telephone calls. The term is used in describing the computerized services of call centers, such as those that direct your phone call to the right department at a business you're calling. It's also sometimes used to describe the ability to use your personal computer to initiate and manage phone calls (in which case you can think of your computer as your personal call center).”* [29]

Contact (Telemarketing): The term “contact” is used in telemarketing to refer to when a live person answers the phone.

Contact Center Campaign: *“Is a project or program running in your call center.”* [56]

Contact Center: *“A Contact Center (also referred to as a customer interaction center or e-Contact Center) is a central point in an enterprise from which all customer contacts are managed. The Contact Center typically includes one or more online call centers but may include other types of customer contact as well, including e-mail newsletters, postal mail catalogs, Web site inquiries and chats, and the collection of information from customers during in-store purchasing.”* [57]

Contacts per Hour: Is an outbound metric used basically for telemarketing campaigns. It refers to how many contacts within a specific hour have been obtained for a specific campaign using any kind of auto dialer.

COPC Inc: *“Customer Operations Performance Center Inc. (COPC Inc.) is the world's leading authority on operations management and performance improvement for customer contact center and Business Process Outsourcing (BPO) services.”* [14]

COPC-2000: *“The COPC-2000® CSP Standard is a Performance Management Framework designed to deliver results in Customer Service Provider (CSP) contact center environments including Call Centers, E–Commerce Centers and Transaction Processing Operations. It is relied on as the global standard for implementing contact center best practices that improve performance metrics in customer satisfaction and service, inbound and outbound sales, dispatch, collections, retention, remittance processing, fulfillment and other related service operations.”* [14]

CRM: See Customer Relationship Management.

CTI: See Computer Telephony Integration.

Customer Acquisition (Contact Center Service): Customer acquisition refers to the activity of Contact Center agents acquiring new clients for the Contact Center’s client.

Customer Contact Center: See Contact Center.

Customer Relationship Management: *“An integrated information system that is used to plan, schedule and control the pre-sales and post-sales activities in an organization. CRM embraces all aspects of dealing with prospects and customers, including the call center, sales force, marketing, technical support and field service. The primary goal of CRM is to improve long-term growth and profitability through a better understanding of customer behavior. CRM aims to provide more effective feedback and improved integration to better gauge the return on investment (ROI) in these areas.”* [55]

Customer Retention (Contact Center Service): Customer retention refers to the activity of Contact Center agents retaining or not letting current customers of the Contact Center’s client quit the service they are receiving.

Customer Service Call Center: *“A customer service call center is usually the place that answers your call when you dial the number on the back of a product that you just purchased when you need assistance with something. The people who answer these phones can often be very useful to the customer and provide them with the information that they need.”* [60]

Data Center: *“A data center (sometimes spelled *datacenter*) is a centralized repository, either physical or virtual, for the storage, management, and dissemination of data and information organized around a particular body of knowledge or pertaining to a particular business.”* [61]

Data Entry (Contact Center Service): *“Entering data into the computer, which includes keyboard entry, scanning and voice recognition. When transactions are entered after the fact (batch data entry), they are just stacks of source documents to the keyboard operator. Deciphering poor handwriting from a source document is a judgment call that is often error prone. In online data entry operations, in which the operator takes information in person or by phone, there is interaction and involvement with the transaction and less chance for error.”* [55]

Debt Collection (Contact Center Service): *“Debt collection is the practice of obtaining payment from customers for purchases that have been made on credit.”* [55]

DID: See Direct Inward Dialing.

Direct Inward Dialing (DID): *“A PBX feature that lets callers reach their party directly, without going through the system attendant.”* [56] Also it is frequent to use the term DID to refer to the phone number that is dedicated to perform this task.

Disaster Recovery: *“is the process, policies and procedures related to preparing for recovery or continuation of technology infrastructure critical to an organization after a natural or human-induced disaster.”* [62]

Distribution loss factors: *“(DLFs) represent the average electrical energy losses incurred when electricity is transmitted over a distribution network”* [63]

Domain Model: *“A domain model describes the application domain responsible for creating a shared language between business and Information Technology.”* [64]

Downtime: *“The term downtime is used to refer to periods when a system is unavailable. Downtime or outage duration refers to a period of time that a system fails to provide or perform its primary function.”* [62]

Email Handling (Contact Center Service): Is when Contact Center Agents handles e-mail in behalf of the Contact Center’s client.

Forecasting (Contact Center Activity): *“Taking historical data from your ACD and using that information to predict what may happen in the future.”* [56]

Free Zone: *“An area adjoining a port where goods that are intended for reshipment can be received and stored without payment of duties.”* [55]

Fulfillment (Contact Center Service): *“To carry out the processing of an order including picking, packing, and shipping of product.”* [65]

Hard Disk: *“A rigid magnetic disk fixed permanently within a drive unit and used for storing computer data. Hard disks generally offer more storage and quicker access to data than floppy disks do.”* [55]

Inbound Call Center: *“An inbound call center is one that exclusively or predominately handles inbound calls (calls initiated by the customer) rather than outbound calls. A call center may handle either only inbound or outbound calls or might deal with a combination of the two.”* [57]

Inbound Calls: *“An inbound call is one that a customer initiates to a call center or Contact Center.”* [57]

Interactive Voice Response: *“An automated telephone information system that speaks to the caller with a combination of fixed voice menus and data extracted from databases in real time. The caller responds by pressing digits on the telephone or speaking words or short phrases. Applications include bank-by-phone, flight-scheduling information and automated order entry and tracking.”* [55]

Internet Service Provider: *“Company that provides Internet connections and services to individuals and organizations.” [55]*

Interstate calls: calls from one geographical state to another geographical state.

Intrastate calls: calls performed within the same state. It is related to calls placed from one city to another on the same state.

ISC: (Impuesto Selectivo al Consumo) *“The Selective Consumption Tax is applied to the acquisition or import of certain goods and services. The ISC rate varies according to the good or service taxed.” [39]*

ISO 27001: *“Is an Information Security Management System (ISMS) standard published in October 2005 by the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). ISO/IEC 27001 formally specifies a management system that is intended to bring information security under explicit management control. Being a formal specification means that it mandates specific requirements.” [55]*

ISP: See Internet Service Provider.

IT: Acronym used for Information Technology.

ITBIS: *“The ITBIS is a value-added tax applicable to the transfer and importation of most goods, and to most services (Art. 335). The rate of the ITBIS is 16% (Art. 341).” [39]*

IVR: See Interactive Voice Response.

Lead Generation (Contact Center Service): *“Lead generation is the use of a computer program, a database, the Internet, or a specialized service to obtain or receive information for the purpose of expanding the scope of a business, increasing sales revenues, looking for a job or for new clients, or conducting specialized research. Leads can consist of the names and addresses (or e-mail addresses) of individuals, corporations, institutions, or agencies. Lists of leads can be gathered or filtered from targeted databases such as telephone and Internet directories.” [57]*

Lead Manager: Contact Center position that is in charge of buying and distributing the leads among the different outbound campaigns.

Lead: *“A sales lead is the identity of a human or entity potentially interested in purchasing a product or service, and represents the first stage of a sales process” [55]*

Line Usage: The percentage of time a voice lines is being occupied within a specific period of time.

Malware: *“Malicious computer software that interferes with normal computer functions or sends personal data about the user to unauthorized parties over the Internet.” [55]*

Microsoft Dynamic CRM: *“Is a multilingual Customer Relationship Management software package developed by Microsoft. Out of the box, the product focuses mainly on Sales, Marketing and Service (helpdesk) sectors but Microsoft has been marketing Dynamics CRM as an XRM platform and has been*

encouraging partners to use its proprietary framework to customize it to meet many different demands.” [62]

Microsoft Exchange Server: *“Is a messaging and collaborative software product developed by Microsoft. It is part of the Microsoft Servers line of server products and is widely used by enterprises using Microsoft infrastructure solutions. Exchange's major features consist of electronic mail, calendaring, contacts and tasks; support for mobile and web-based access to information; and support for data storage.” [62]*

NAP: see Network Access Point.

NAS: *“Network-attached storage (NAS) is file-level computer data storage connected to a computer network providing data access to heterogeneous network clients.” [62]*

Network Access Point: *“a network access point (NAP) is one of several major Internet interconnection points that serve to tie all the Internet access providers together so that, for example, an AT&T user in Portland, Oregon can reach the Web site of a Bell South customer in Miami, Florida. Originally, four NAPs - in New York, Washington, D.C., Chicago, and San Francisco - were created and supported by the National Science Foundation as part of the transition from the original U.S. government-financed Internet to a commercially operated Internet.” [66]*

Operational Readiness Test (ORT): *Is a test performed “to confirm that an organization is ready to perform its assigned operation tasks.” [62]*

Oracle Siebel CRM: *“Is a complete customer relationship management (CRM) solution that helps organizations to differentiate their businesses to achieve maximum top-and bottom-line growth. It delivers a combination of transactional, analytical, and engagement features to manage all customers facing operations. Siebel CRM delivers: Comprehensive on premise and on demand CRM solutions, Tailored industry solutions, Role-based customer intelligence and pre-built integration” [67]*

ORT: See Operational Readiness Test.

Outbound Call Center: *“An outbound call center is one in which call center agents make outbound calls to customers on behalf of a business or client. Calls made from the center can include telemarketing, sales or fund-raising calls, as well as calls for contact list updating, surveys or verification services.” [57]*

Outbound Calls: *“An outbound call is one initiated from a call center agent to a customer on behalf of the call center or a client. Typical outbound calls include telemarketing, sales or fund-raising calls, as well as calls for contact list updating, surveys or verification services.” [57]*

PBX: See Private Branch Exchange.

Policy: *“A plan or course of action, as of a government, political party, or business, intended to influence and determine decisions, actions, and other matters.” [55]*

Predictive Dialer: *“An automatic telephone dialing system that dials from a list of numbers and turns the call over to an agent when a human responds. It increases productivity in a call center, because the agents can spend their time talking rather than waiting for calls to go through as well as hanging up on busy signals and answering machines. The couple of seconds of pause you often hear when you*

answer a call from a telemarketer is the time it takes for the system to determine that you are a live person” [55]

Predictive Dialing: See predictive Dialer.

Preview Dialer: *“An automatic telephone dialing system that dials from a list of numbers. It presents the agent with the information about the prospect or customer to be called and requires a response either to make the call or not to make the call. It differs from a predictive dialer, which turns all calls over to the next available agent.” [55]*

Preview Dialing: See Preview Dialer.

Private Branch Exchange (PBX): *“A telephone exchange serving a single organization, having a switchboard and associated equipment, usually located on the customer’s premises; provides for switching calls between any two extensions served by the exchange or between any extension and the national telephone system via a trunk to a central office. ” [55]*

Problem Space: *“A mental representation of a problem that contains knowledge of the initial state and the goal state of the problem as well as possible intermediate states that must be searched in order to link up the beginning and the end of the task.” [55]*

Procedure: *“A series of steps taken to accomplish an end.” [55]*

Processor (Computers): See Central Processing Unit.

Progressive Dialer: Is a dialer that dials multiple numbers in a more automatic way than preview dialers by displaying customer records by certain amount of time before placing the call. [56]

Progressive Dialing: See Progressive Dialer.

PSTN: See Public Switched Telephone Network.

Public Folder (Microsoft Exchange): *“Public folders, introduced in the first version of Microsoft Exchange, are designed for shared access and provide an easy and effective way to collect, organize, and share information with other people in your workgroup or organization. Public folders are hierarchically organized, stored in dedicated databases, and can be replicated between Exchange servers.” [68]*

Public Switched Telephone Network: *“The worldwide voice telephone network.” [55]*

Queue (Contact Center Queue): *“A stream of tasks waiting to be executed. A series of calls waiting to be answered.” [56]*

RAM (Computer RAM): See Random Access Memory.

Random Access Memory: *“Computer main memory in which specific contents can be accessed (read or written) directly by the CPU in a very short time regardless of the sequence (and hence location) in which they were recorded.” [55]*

Reps: Representative. Other name for Contact Center Agents.

Risk Assessment: *“A report that shows assets, vulnerabilities, likelihood of damage, estimates of the costs of recovery, summaries of possible defensive measures and their costs and estimated probable savings from better protection.” [55]*

Screen Pops: *“For call centers that provide integration between a telephone system and an agent's PC, a screen pop is used to display information about a call that has just been sent to the call center agent.” [62]*

Scripting (Contact Center Scripting): Is the dialogue or words that a Contact Center Agent must say (or at least follow) when attending a customer or possible buyer of a product or service.

Selective Recording: Is a mode for recording calls or computer screens where not all the calls or screens are captured for a specific Contact Center Agent. Calls or screens to be recorded are determined by a recording plan. For example it can be pre-configured that only 25% of the calls should be recorded.

Self Service: *“Is the practice of serving oneself, usually when purchasing items. Common examples include many gas stations, where the customer pumps their own gas rather than have an attendant do it (self-service gas pumping is illegal in New Jersey & Oregon); Automatic Teller Machines (ATMs) in the banking world have also revolutionized how people withdraw and deposit funds; most American stores, where the customer uses a shopping cart in the store, placing the items they want to buy into the cart and then proceeding to the checkout counter/aisles; or at buffet-style restaurants, where the customer serves their own plate of food from a large, central selection.” [62]*

Service Level Agreement (SLA): *“is a part of a service contract where the level of service is formally defined. In practice, the term SLA is sometimes used to refer to the contracted delivery time (of the service) or performance.” [62]*

Service Level: *“Usually expressed as a percentage of statistical goal. For example, if your goal is an average speed of answer of 100 seconds or less, and 80% of your calls are answered in 100 seconds or less, then your service level is 80%.” [56]*

Skill (Contact Center Skill): Also called Skill Group is *“an agent group that’s made up of reps who are qualified to accept calls because of some ability defined in the system. This could be the ability to speak a second language, or a qualification to handle a particular type of customer.” [56]*

Skype: *“Is a software application that allows users to make voice calls over the Internet. Calls to other users of the service and, in some countries, to free-of-charge numbers, are free, while calls to other landlines and mobile phones can be made for a fee. Additional features include instant messaging, file transfer and video conferencing.” [62]*

SLA: See Service Level Agreement.

Smart Predictive Dialer: *“Smart predictive dialers combine auto dialing with voice messaging and phone agents who are prepared to handle calls initiated by the dialer. Answering machines, busy signals, and unanswered calls are processed in a manner similar to that of a normal predictive dialing system.”*

However, when a 'live' answer is detected, the dialer plays an introductory recorded message, giving the call recipient the option to talk with an agent to complete the transaction. This message is a consistent greeting that identifies the caller, the nature of the call, and the option to speak with an agent. This process requires a more sophisticated predictive algorithm to ensure that a phone agent is available when the call recipient asks to speak with an agent.” [62]

Smart Predictive Dialing: See Smart Predictive Dialer.

Soft Phone: *“is a software program for making telephone calls over the Internet using a general purpose computer, rather than using dedicated hardware. Often a soft phone is designed to behave like a traditional telephone, sometimes appearing as an image of a phone, with a display panel and buttons with which the user can interact. A soft phone is usually used with a headset connected to the sound card of the PC, or with a USB phone.” [62]* Soft phones can also be used inside private networks using IP Telephony.

Special Free Zone: In the Dominican Republic, a Special Free Zone is a Free Zone that is not located in an industrial Free Zone park and does not necessarily have customs or big walls surrounding it.

Spyware: *“Is a type of malware that is installed on computers and collects information about users without their knowledge.” [62]*

Standard: *“Something, such as a practice or a product, which is widely recognized or employed, especially because of its excellence.” [55]*

Statement of Work: *“A statement of work (SOW) is a formal document that captures and defines the work activities, deliverables and timeline a vendor will execute against in performance of specified work for a customer. Detailed requirements and pricing are usually included in the Statement Of Work, along with standard regulatory and governance terms and conditions.” [62]*

TDM: See Time Division Multiplexing.

Tech Support or Technical Support: *“Is a range of services providing assistance with technology products such as mobile phones, televisions, computers, or other electronic or mechanical goods. In general, technical support services attempt to help the user solve specific problems with a product—rather than providing training, customization, or other support services.” [62]*

Telemarketing Services: *“Telemarketing services make or receive large numbers of calls on a company's behalf. These services can be a cost-effective alternative to creating an in-house telemarketing group.” [60]*

Telemarketing: *“Is a method of direct in which a salesperson solicits to prospective customers to buy products or services, either over the phone or through a subsequent face to face or Web conferencing appointment scheduled during the call.” [62]*

Terremark: *“Terremark Worldwide (NASDAQ:TMRK) is a leading global provider of IT infrastructure services delivered on the industry's most robust and advanced operations platform. Leveraging purpose-built datacenters in the United States, Europe and Latin America and access to massive and diverse network connectivity from more than 160 global carriers, Terremark delivers government, enterprise and Web 2.0 customers a comprehensive suite of managed solutions including managed hosting, collocation, network and security services.”* [69]

Third-party Verification (Contact Center Service): *“TPV (Third-party verification) is a process of getting an independent party to confirm that the customer is actually requesting a change or ordering a new service or product. By putting the customer on the phone (usually via transfer or 3-way call) TPV provider asks a customer for his identity, that he is an authorized decision maker and to confirm his order.”* [62]

Time Division Multiplexing: *“A technology that transmits multiple signals simultaneously over a single transmission path. Each lower-speed signal is time sliced into one high-speed transmission. In the simplest example, three incoming 1,000 bps signals (A, B and C) can be interleaved into one outgoing 3,000 bps signal as ABCABCABCABC. The receiving end divides the single stream back into its original signals.”* [55]

Toll Free Number: *“is a special telephone number, in that the called party is charged the cost of the calls by the telephone carrier, instead of the calling party. The cost of the call to the called party is usually based on factors such as the amount of usage the number experiences, the cost of the trunk lines to the facility, and possibly a monthly flat rate service charge.”* [55]

Total Recording: Is a mode for recording calls or computer screens where all the calls or screens for a Contact Center Agent are recorded.

TPV: See Third-party Verification.

Uninterruptible Power Supply: *“A device that provides battery backup when the electrical power fails or drops to an unacceptable voltage level. Small UPS systems provide power for a few minutes; enough to power down the computer in an orderly manner, while larger systems have enough battery for several hours. In mission critical datacenters, UPS systems are used for just a few minutes until electrical generators take over.”* [55]

Universal Serial Bus: *“A serial interface that can transfer data at up to 480 million bits per second and connect up to 127 daisy-chained peripheral devices.”* [55]

UPS: See Uninterruptible Power Supply.

URL: *“An Internet address (for example, <http://www.hmco.com/trade/>), usually consisting of the access protocol (http), the domain name (www.hmco.com), and optionally the path to a file or resource residing on that server (trade).”* [55]

USB Ports: *“A USB socket on a computer or peripheral device into which a USB cable is plugged.”* [55]

USB: See Universal Serial Bus.

Virus: *“A computer program that is designed to replicate itself by copying itself into the other programs stored in a computer. It may be benign or have a negative effect, such as causing a program to operate incorrectly or corrupting a computer's memory.” [55]*

Voice Mail: *“Is an interactive computerized system for answering and routing telephone calls, for recording, saving, and relaying messages, and sometimes for paging the user.” [55]*

VoIP: *“A digital telephone service that uses the public Internet and private backbones for call transport. Support for the public switched telephone network (PSTN) is also provided so that VoIP calls can originate and terminate from regular telephones.” [62]*

Web Chat: *“A **web chat** is a system that allows users to communicate in real time using easily accessible web interfaces. It is a type of internet online chat distinguished by its simplicity and accessibility to users who do not wish to take the time to install and learn to use specialized chat software. This trait allows users instantaneous access and only a web browser is required to chat. Users will always get the latest version of a chat service because no software installation or updates are required.” [62]*

XRM: *“**eXtended Relationship Management** is a strategy that takes CRM (Customer Relationship Management) one step further, focusing on managing all relationships—not just those with customers. The “X” in XRM stands for “All.” XRM provides a comprehensive, unified system for all aspects of business. xRM is a strategic approach to understanding what makes a business thrive, what information needs to be tracked, by whom, and how it needs to be displayed and leveraged to facilitate better decisions.” [62]*

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