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How can Atos GDC improve the service desk performance
regarding customer Boehringer Ingelheim?



UNIVERSITY OF ALGARVE

FACULTY OF ECONOMICS

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How can Atos GDC improve the service desk performance regarding
customer Boehringer Ingelheim?

Master's in Management

Project report
made under the supervision of:
Professor Luis Soromenho Gomes



UNIVERSITY OF ALGARVE
FACULTY OF ECONOMICS

2019 - 2020

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Tobias Woudt



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II. Abstract in English

Resumo em inglês

Atos is a French multinational and a global leader in digital transformation with over 120.000 employees in 73 countries and an annual revenue of around € 11 billion. It specializes in hi-tech transactional services, unified communications, cloud, big data and cybersecurity.

Atos Canarias is one of the 8 Atos Global Delivery Centers (GDC) of Atos and based in Santa Cruz de Tenerife, Canary Islands, Spain. Atos GDC Canarias provides computer related services and consulting. The company grew from 20 employees in 2007 to more than 800 employees in 2019. Additionally, Atos GDC Canarias is an international service desk and supports more than 120 clients in 14 languages.

The Atos Global Delivery Center is providing the IT (Information Technology) services for the German multinational Boehringer Ingelheim with 125 agents from 4 different GDC's in respectively Manila (Philippines), Chengdu (China), Bydgoszcz (Poland) and Tenerife (Spain). The service desk performance of Atos GDC regarding customer Boehringer Ingelheim is degrading and the goal is to improve the service desk performance.

A qualitative research method together with a descriptive design is used to analyze the service desk performance of Atos GDC concerning one of their most important customers; Boehringer Ingelheim. Boehringer Ingelheim is a German pharmaceutical company.

After using the key performance indicators and identifying all possible causes in the Ishikawa diagram the shortage of staff members is identified as the main cause of the problem. The staffing problem concerns the German and English-speaking agents spread over the locations Atos GDC Canarias, Atos GDC Poland and Atos GDC Philippines. The knowledge, quality and efficiency of the agents turn out to be proficient.

Possible solutions for Atos GDC are focusing on online presence through social media to be more attractive for potential employees. Besides this, Atos GDC has several options to recruit potential employees (online) through expat communities, tourists, mobility programs and career sites.

Key words:

Atos Global Delivery Center Canarias

Service desk performance

Key performance indicators

Boehringer Ingelheim

Staffing shortage

Online presence

III. Summary in Portuguese

Resumo em português

A Atos é líder global em transformação digital, com mais de 120.000 funcionários em 73 países e uma faturação anual de mais de 11 bilhões de euros. A Atos é líder europeia em Cloud, Cybersecurity, High Performance Computing e fornece soluções de serviços de Cloud Híbrida Orquestrada de extremo a extremo, Big Data, aplicações de negócios e Workplace Digital. A Atos tem sido uma parceira tecnologia dos sistemas de informação utilizados ao longo dos Jogos Olímpicos e Paralímpicos e opera através das marcas Atos, Atos Syntel e Unify. A Atos é uma SE (Societas Europeia) listada no índice CAC40 de Paris (Atos).

Atos Global Delivery Center (GDC) Canarias é um dos 8 Centros de Entrega Global da Atos e está sediada em Santa Cruz de Tenerife, Ilhas Canárias, Espanha. Esta fornece serviços e consultoria na área da computação. Iniciou a sua atividade com funcionários em 2007 e cresceu para mais de 800 funcionários em 2019. A Atos tinha várias razões para localizar atividade nas Ilhas Canárias. Tais razões deveram-se ao sistema tributário aplicável à Zona Especial das Ilhas Canárias (ZEC), que é muito atraente para as empresas e à qualidade de vida, que é outro incentivo para os profissionais europeus trabalharem com a Atos.

A Atos GDC Canarias é uma central de atendimento internacional e suporta mais de 120 clientes em 14 idiomas diferentes. O número de solicitações de serviços é de aproximadamente de 4 milhões por ano. A Atos GDC Canarias está dividida em cinco departamentos diferentes: o departamento de Operações, o departamento de Qualidade, o departamento de Transições e Transformações (T&T), o departamento de Finanças e o departamento de Recursos Humanos.

A empresa apoia os serviços da Boehringer Ingelheim há mais de 6 anos e Boehringer Ingelheim é uma cliente importante. Um total de 125 agentes trabalha em quatro GDC diferentes em Manila (Filipinas), Chengdu (China), Bydgoszcz (Polónia) e Tenerife (Espanha). O Gerente de Operações Globais está baseado em Tenerife e é responsável pelas operações dos quatro Centros de Entrega Globais em direção à Boehringer Ingelheim. Desde meio de agosto, o desempenho dos serviços de TI da Atos GDC fica aquém do esperado e não atinge as metas desejadas. A pergunta de pesquisa 'Como a Atos GDC pode melhorar o desempenho comercial da Boehringer Ingelheim?' usada para analisar o desempenho comercial do Atos Global Delivery Center.

Para analisar o desempenho comercial do centro Atos Global Delivery, foi realizada uma análise qualitativa juntos com um design descritivo. Diversa informação numérica acerca do desempenho comercial da Atos GDC são utilizados para analisar o desempenho da Atos GDC em relação ao cliente Boehringer Ingelheim. Outras fontes da empresa também são usadas para ampliar a pesquisa.

Após analisar os principais indicadores de desempenho da Atos GDC em relação à *Boehringer Ingelheim*, algumas conclusões foram feitas: o índice de satisfação do usuário, a resolução da primeira chamada e a duração da chamada sugerem um resultado satisfatório. A causa desse resultado advém da qualidade de serviço, do conhecimento, da qualidade e a eficiência dos agentes. A taxa de abandono das chamadas, a velocidade e o tempo de resposta excedem o admissível pois o resultado do tempo de espera em relação à ordem de cada chamada é 2/3 o que retrata um índice negativo.

Para analisar o desempenho comercial da Atos GDC em relação ao cliente *Boehringer Ingelheim*, foi utilizado o diagrama de Ishikawa. O diagrama de Ishikawa ilustra a causa do problema em um grupo específico de causas. As principais categorias da Atos GDC em relação ao desempenho comercial do cliente *Boehringer Ingelheim* foram adicionadas ao diagrama. As possíveis causas mostram as linhas do diagrama de Ishikawa, também conhecido como análise de causa e efeito.

No diagrama de Ishikawa, as causas são agrupadas nas principais categorias, que incluem:

- Medição: dados gerados a partir do processo que são usados para avaliar sua qualidade;
- Pessoas: qualquer pessoa envolvida no processo;
- Ambiente: as condições, como: localização, tempo, temperatura e cultura em que o processo opera;
- Máquinas: qualquer equipamento, computador, ferramenta etc., necessário para realizar o trabalho;
- Métodos: como o processo é executado e os requisitos específicos para fazê-lo, como políticas, procedimentos, regras, regulamentos e leis;
- Materiais: materiais utilizados para produzir o produto final

Após a revisão de todas as principais categorias na análise de causa e efeito, a causa identificada do problema é a falta de agentes alemães e ingleses. Esta escassez está espalhada por 3 locais: Atos GDC Tenerife, Atos GDC Bydgoszcz, Poland e Atos GDC Manila, Philippines. Após identificar a causa do problema, foram propostas soluções para o Atos GDC.

No que diz respeito ao recrutamento, a Internet se tornou uma das fontes mais populares de informação para quem procura emprego. Também, especialmente, a geração do milênio costuma avaliar as empresas pela Internet antes de se candidatarem a um emprego para terem certeza onde vincular suas vidas profissionais. Isso indica que a presença on-line é importante para se atrair novos funcionários para a Atos GDC.

A maioria dos candidatos a emprego (ativos e passivos) usa a mídia social, as páginas de mídia social podem ser dispositivos promissores para o recrutamento. A Atos GDC deve investir nas plataformas de mídia social para mudar a percepção dos possíveis candidatos sobre a organização.

Além disso, milhões de turistas visitam Tenerife, Polônia e Filipinas anualmente. Apesar da minoria desses turistas se interessarem em trabalhar e morar nesses países ainda

representa um número considerável de pessoas. Assim, surge uma oportunidade para a Atos promover ofertas de emprego para esse grupo.

Outra opção para o Atos GDC é um programa de mobilidade, chamado Eures, que dão suporte financeiro para jovens que visam trabalhar no exterior. O programa é uma ajuda construtiva para quem procura emprego e a Atos deve aproveitar o programa para atrair novos funcionários. Além disso a Atos GDC Canarias e Atos GDC Polónia precisam de funcionários especificamente alemães e por isso a empresa deve se concentrar nos locais de carreira alemães. A empresa pode encontrar funcionários em potencial através de comunidades de expat e sites de carreira on-line com foco em falantes de inglês e alemão. Melhorar a presença on-line de Atos é o mais importante.

Finalmente, a Atos abriu um centro de competência Local no Algarve que terá como principal objetivo trazer ao mercado nacional uma nova oferta de serviços que suportam e aceleram a transformação digital com profissionais especializados no desenvolvimento, implementação e gestão de soluções digitais. O novo centro estará localizado em Loulé, com excelentes acessos rodoviários e com fácil acesso ao aeroporto de Faro. O Município de Loulé demonstrou grande interesse em acolher o LDC tendo sido envolvidos desde logo outros agentes locais, tais como o IFP, a Câmara Municipal e a Universidade do Algarve (Ualg), de forma a criar as condições necessárias. Já estão definidos e em andamento protocolos de parceria com a Ualg, que irão possibilitar a criação de sinergias para a investigação e participação de recursos universitários com base tecnológica. Para o primeiro ano (2020) está previsto um crescimento de negócio de 25% a nível nacional, tendo por base um crescimento gradual da equipa ao longo do ano, com o objetivo de alcançar cerca de 80 novos colaboradores até ao final do ano de 2020.

GENERAL INDEX

Chapter 1. Introduction

1.1 Introduction of the topic.....	14
1.1.1 The presentation of the theme.....	14
1.1.2 The explanation of its importance.....	14
1.1.3 The issues of the research.....	14
1.1.4 Boundaries of the research.....	14
1.1.5 Brief summary following chapters.....	15

Chapter 2. Company review Atos GDC Canarias

2.1 Atos.....	16
2.1.1 General overview.....	16
2.1.2 Divisions.....	16
2.1.3 Financial facts.....	16
2.1.4 Mission.....	16
2.2 Atos Global Delivery Centre Canarias.....	16
2.2.1 General overview.....	16
2.2.2 Canary islands.....	17
2.3 The departments.....	17
2.3.1 Operations department.....	17
2.3.2 Quality department.....	17
2.3.3 Transitions & Transformations.....	17
2.3.4 Finance.....	17
2.3.5 Human Resources.....	17
2.4 The organization.....	18
2.4.1 Organizational chart Atos GDC.....	18
2.4.2 Organizational chart Operations Management.....	18
2.5 Operations department.....	19
2.5.1 Tasks.....	19
2.5.2 Tools.....	19
2.6 The services of Atos GDC Canarias.....	20
2.6.1 Levels of support.....	20
2.6.2 Channels.....	20
2.6.3 Lean Management System.....	20

Chapter 3. Methodology

3.1 Qualitative research method.....	22
3.2 Key Performance Indicators (KPI).....	22
3.3 Ishikawa Diagram.....	23
3.4 Data Collection Techniques.....	23

Chapter 4. Literature Review

4.1. Case study.....	24
4.2 Information technology.....	24
4.2.1 Definition.....	24
4.2.2 Types of IT services.....	24
4.2.3 IT services companies.....	24
4.3 Key performance indicators.....	24
4.4 Ishikawa Diagram.....	25
4.5 Recruitment.....	25

Chapter 5. Diagnosis of the problem

5.1 The situation Boehringer.....	26
5.1.1 Introduction to the theme.....	26
5.1.2 Boehringer Ingelheim.....	26
5.1.3 Locations.....	26
5.1.4 Languages.....	26
5.2 Key Performance indicators.....	27
5.2.1 The call abandon rate.....	27
5.2.2 The speed to answer rate.....	27
5.2.3 Non-call contacts response time.....	28
5.2.4 First Call Resolution (FCR).....	28
5.2.5 Response time on incoming tickets from L2/L3.....	29
5.2.6 Customer Satisfaction Rate (CSAT).....	29
5.2.7 The call duration.....	30
5.2.8 Summary of the KPI.....	30
5.3 Ishikawa diagram.....	31
5.3.1 People.....	32
5.3.2 Methods.....	33
5.3.3 Machines.....	34
5.3.4 Materials.....	35
5.3.5 Measurement.....	35
5.3.6 Environment.....	38
5.4 Possible causes.....	39

Chapter 6. Results and discussion

6.1 Proposed solutions	42
6.2 Conclusion	44
6.3 Atos in the Algarve.....	44
Bibliography.....	45
Appendix: Logbook.....	48

FIGURES INDEX

Figure 1	Organizational chart Atos GDC Canarias.....	18
Figure 2	Organizational chart Operations Management.....	18
Figure 3	Ishikawa diagram.....	31
Figure 4	The recorded call volume of the inbound calls.....	36
Figure 5	Speed to answer rate vs. staff shortage per language.....	37
Figure 6	Call abandon rate vs. staff shortage per language.....	38
Figure 7	Call duration rate vs. staff shortage per language.....	38

TABLES INDEX

Table 1	Language distribution Atos Canarias.....	26
Table 2	The call abandon rate Atos GDC.....	27
Table 3	Speed to answer rate Atos GDC.....	27
Table 4	Non-call contacts response time Atos GDC.....	28
Table 5	First call resolution rate Atos GDC.....	29
Table 6	Response time on incoming tickets from L2/L3 Atos GDC.....	29
Table 7	User Satisfaction Rating (global) Atos GDC.....	29
Table 8	User Satisfaction Rating (per country) Atos GDC.....	29
Table 9	The call duration Atos GDC.....	30
Table 10	Staff situation per location Atos GDC.....	32
Table 11	Languages with the highest call volume.....	36
Table 12	Shortage of staff number per location.....	36
Table 13	Possible causes identified.....	39

ABBREVIATIONS LIST

ASA	-	Average Speed to Answer
BAU	-	Business As Usual
BOS	-	Business Operations Support
CRM	-	Customer Relationship Management
CSAT	-	Customer Satisfaction Rate
FCR	-	First Call Resolution
GBU	-	General Business Unit
GDC	-	Global Delivery Center
GSD	-	Global Service Desk
IGIC	-	Impuesto General Indirecto Canario (Canary Islands Taxes)
IOC	-	International Olympic Committee
IT	-	Information Technology
KPI	-	Key Performance Indicators
L1	-	Level one
L2	-	Level two
L3	-	Level three
MTD	-	Month-to-date
PAAS	-	Platform-as-a-Service
POS	-	Point Of Sale
SE	-	Societas Europaea (Public company European Union)
SME	-	Subject Matter Expert
USP	-	Unique Selling Point
VAT	-	Value Added Tax
ZEC	-	Zona Especial Canaria (Canary Islands special tax zone)

Chapter 1 Introduction

1.1 Introduction of the topic

In the introduction of the topic the theme to be investigated is presented, the importance is explained, the problems are scaled, the boundaries of the research are mentioned, and a brief summary is given.

1.1.1 The presentation of the theme

The Atos Global Delivery Center (GDC) is providing the IT (Information Technology) services for the German multinational Boehringer Ingelheim. The services are related to calls, mails and chats only. The problem is that since the middle of August 2019 the service desk performance of Atos GDC is degrading and not reaching the expected targets. The key performance indicators are showing this. The research question '*How can Atos GDC improve the service desk performance regarding Boehringer Ingelheim?*' is used to analyze the service desk performance of Atos Global Delivery Center.

1.1.2 The explanation of its importance

Boehringer Ingelheim is one of the world's 20 leading pharmaceutical companies (Boehringer) and an important client of Atos GDC. Atos GDC has been supporting services for Boehringer Ingelheim for more than 6 years. A total of 125 agents are working from 4 different GDC's in Manila (Philippines), Chengdu (China), Bydgoszcz (Poland) and Tenerife (Spain). The Global Operations Manager is based in Tenerife and responsible for the operations of all four Global Delivery Centers towards Boehringer Ingelheim.

1.1.3 The issues of the research

The service desk performance of Atos GDC regarding Boehringer Ingelheim is lacking. Since August 2019 the performance is degrading. The mentioned issues of the research are explained by the data and information that scale the problem. In addition, the key performance indicators (KPI) of the services of Atos GDC scale the problem.

1.1.4 Boundaries of research

To set the boundaries of the research, three elements are used: limitations, delimitations and assumptions. The elements are essential in explaining and framing the study. The meaning of the elements regarding the research are given below.

A limitation of a study design or instrument is the systematic bias that the researcher did not or could not control and which could inappropriately affect the results (Price & Murnan, 2004)

The limitations in this research:

- Atos GDC cannot share all the information since specific documents are for internal use only.
- The researcher is limited to an amount of 320 hours at the company to do the demanded tasks and get all the needed information of the company.

A delimitation is a systematic bias intentionally introduced into the study design or instrument by the researcher (Price & Murnan, 2004). The delimitations set for this research:

- The research only concerns the services of Atos GDC provided to customer Boehringer Ingelheim. Uniquely the performance to this specific customer is researched.
- The research only concerns the four Global Delivery Centers supporting Boehringer Ingelheim given the Global Operations Manager of Atos GDC is responsible for the performance of the four GDC's: Manila (Philippines), Chengdu (China), Bydgoszcz (Poland) and Canarias (Tenerife, Spain).

Assumptions are a necessary element in proposals, because they are required to enable and conduct the study (Simon & Goes, 2013). The assumptions made for the research:

- Assuming Boehringer will continue to do business with Atos

1.1.5 A brief summary of the following chapters

In the first chapter the topic is introduced, and the issues and boundaries of the research are given.

In the second chapter a short description of the Atos company is given. After this Atos Global Delivery Center Canarias is explicated. The different departments are explained, and the organization is illustrated. Besides this the services of Atos GDC Canarias are outlined, and the operations department is described more detailed.

In the third chapter the methodology is described, the qualitative research method is explained, and the key performers indicators and the data collection techniques are clarified.

In the fourth chapter the literature review is listed with several topics.

In the fifth chapter the situation Boehringer is pointed out firstly. Afterwards the performance of the GDC is analyzed by using the key performance indicators. The Ishikawa diagram is used to map the possible causes of the problem. Eventually, the real cause of the problem is identified.

In the sixth chapter the proposed solutions are given, the conclusion is made and information about Atos in the Algarve is added.

Chapter 2 Company review Atos GDC Canarias

2.1 Atos

2.1.1 General overview

Atos is a French multinational information technology (IT) service and consulting company headquartered in Bezons, France and offices worldwide. It specializes in hi-tech transactional services, unified communications, cloud, big data and cybersecurity services. Atos operates worldwide under the brands Atos, Atos-Syntel, Atos Consulting, Atos Healthcare, Atos Worldgrid, Bull, Canopy, Unify and Worldline. Atos is a global leader in digital transformation with over 120.000 employees in 73 countries and an annual revenue of around € 11 billion. Besides this Atos is a SE (Societas Europaea) and listed on the CAC40 Paris stock index. (Atos International, 2019).

2.1.2 Divisions Atos' activities are organized in four divisions:

- *Infrastructure & Data Management*: Datacenter management, service desk and unified communications
- *Business Applications & Platform Solutions*: consulting & systems integration
- *Big Data & Cybersecurity*: production of high-performance computers & servers and cybersecurity
- *Worldline*: e-commerce payment services and POS (Point Of Sale) terminal solutions (Atos international, 2019)

2.1.3 Financial facts

The revenue of Atos was nearly €12.3 billion in 2018 with large growth in the Business & Platform Solutions, Big Data & Cybersecurity and the Infrastructure & Data Management (Atos International, 2019).

2.1.4 Mission

The mission of Atos is described as follows: *“Atos’s mission is to help design the future of the information technology space. Its services and competences are underpinned by excellence in the advance of scientific and technological knowledge and research and in its commitment to learning and education. Across the world Atos enables its customers and all who live and work in the industry, to grow and prosper in a safe, secure and sustainable environment.”* (Atos, 2019)

2.2 Atos Global Delivery Center Canarias

2.2.1 General Overview

Atos Global Delivery Center (GDC) Canarias is one of the 8 Global Delivery Centers of Atos and is based in Santa Cruz de Tenerife, Canary Islands, Spain. Atos GDC Canarias is a service desk and part of the division ‘*Infrastructure and Data Management*’ described in section 2.1.

Atos GDC Canarias provides computer related services on different levels. The levels are explained in section 2.5. Atos Canarias grew from 20 employees in 2007 to more than 800

employees in 2019.

2.1.2 Canary Islands

Atos had several reasons to start with an establishment in the Canary Islands. For example, the tax system applicable to the Canary Islands Special Zone (ZEC Zone), which is very attractive for companies, and of course the quality of life, which is another incentive for European professionals to come and work with Atos. There are two universities in Tenerife with a high percentage of the students registered in technical degree programs of a high academic level. In addition, there are also several Vocational Training ICT modules on offer. All of this, together with the professionals already existing in the Islands, provides a supply of skilled human capital. Furthermore, the Canary Islands are an important bridge to Africa, where major consulting and system integration projects are coming up. (Proexca, 2019).

2.3 The departments

Atos GDC Canarias is divided in five different departments. The five departments including the main tasks and responsibilities are briefly described below.

2.3.1 Operations Department

The Operations Department is responsible for managing the process of the services of Atos GDC. The department arranges a buddy system, agent coaching, award and recognition awards for employees and floor support.

2.3.2 Quality Department

The Quality Department is responsible for the quality checks and the training of the agents. The department coordinates the coaching, training, monitoring and complaint management to increase customer satisfaction.

2.3.3 Transitions and Transformations (T&T)

The T&T department takes over services and establishes business control. Then it changes services towards the future mode of operations to achieve agreed business benefits. Besides this T&T provides the service desk transition of the local project team.

2.3.4 Finance

The Finance department is responsible for the financial reporting and control. The department is acquiring, managing, analyzing and planning the funds of Atos GDC.

2.3.5 Human Resources

The Human Resource department is responsible for the recruitment of (new) employees. This includes the staffing plan budget, the search for personnel, the selection and the onboarding & probation period. The internal moves are relatively high at Atos GDC since the internal mobility has priority (Atos, 2019).

2.4 The organization

2.4.1 Organizational Chart Atos GDC

The organizational chart of Atos Global Delivery Center Tenerife is shown in figure 1 below. The head of GDC Tenerife is responsible for the entire organization. The Head of Operations, Quality Management, Transitions & Transformations and Finance all have their specific part of the organization. Since this research focuses on the Operations Department, this department is described more detailed below.

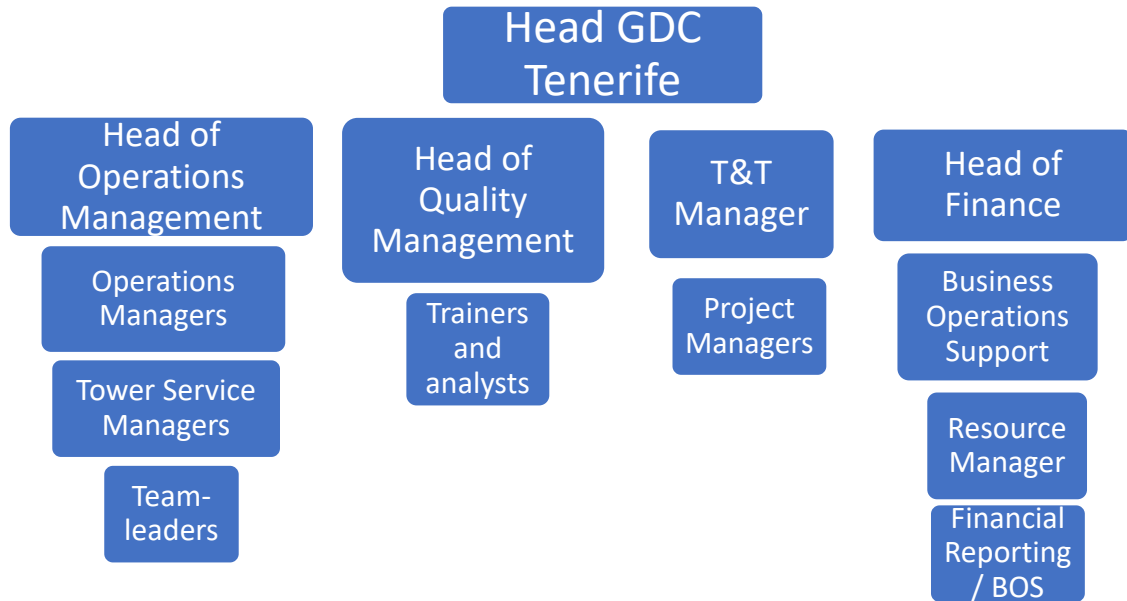


Figure 1: Organizational chart Atos GDC Canarias

2.4.2 Organizational chart Operations Management

The Global Operations Manager is accountable for all the Operations of Atos GDC Canarias and is responsible for all the 6 Operations Managers. The 6 Operations Managers are responsible for the 10 Tower Service Managers, 22 Team leaders and approximately 700 agents working for Atos GDC Canarias. The organizational chart is shown in figure 2 below.

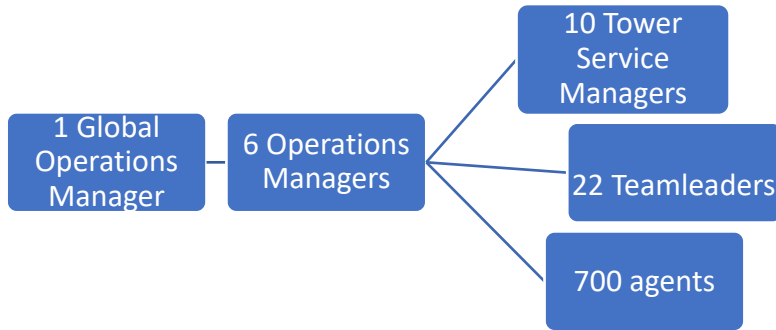


Figure 2: The organizational chart of the Operations Management

2.5 The Operations Department

2.5.1 Tasks

The Operations Department has several tasks and responsibilities to ensure an excellent operations management. The tasks and the tools of the department are explained below

The operations department organizes team meetings to update the agents and to maintain the communication between the team leaders and the agents. The buddy system creates engagement between existing and new employees and gives the opportunity to share practices. Trainers are coaching agents to increase the quality and achieve goals and solutions.

In addition, the operations department gives awards for excellent performance to contribute to the wellbeing at work, the agent productivity and recognition of the employee. With the floor support instant assistance is provided for a shorter handling time and a faster process of gaining knowledge. Lastly, the whiteboard gives easy access to updates and can be used to solve team problems.

2.5.2 Tools

Atos GDC Canarias and particularly the Operations department is using multiple tools to provide the agents in the service tasks. The different tools will be mentioned shortly to have an idea of the provided systems.

The *call management system* is used to give an overview about the time, status and contacts for the agent. The system includes the time reporting, agent status, call wait and handling time, login data and contacts reviews.

The *ticket management system* allows the agent to log in via a Self-Service Portal and check the process of the incidents. The tickets can be approved, and knowledge articles can be found in the system.

The *reporting management system* reports all the calls, emails and chats received through Genesys (Telecommunications system). The average handling time, the call handling information and agent status time is noted as well.

The *capacity management system* is used for the forecasting and resource planning such as information of the employees, schedules, holidays and language skills.

The *customer satisfaction tool* is used for fast feedback and a proactive follow up. The tool is transparent because of the large displays on customer sites.

2.6 The services of Atos GDC Canarias

2.6.1 Levels of support

Atos GDC Canarias is providing Information Technology support to its customers. The levels of support are classified to 3 different levels. The levels are level 0, level 1 and level 2 and are explained below.

Level 0 – Self-support

The basic type of support, level 0 is self-support is tool based. Examples of this support are self-help, knowledge base, password management and online feedback loop.

Level 1 – Service Desk

The level 1 service is based on information service generalists and customer business focus. Examples are calls, emails, functional support, routing & tracking and account administration.

Level 2 – Competency centers

Level 2 support is done by Subject Matters Experts (SME). Support related to F&P servers, LAN, image scripting, application servers are part of the service.

2.6.2 Channels

Atos GDC Canarias is supporting multiple channels to provide services to the end user. Atos GDC provides support through phone, e-mail, web chat and portal.

Phone: The end user is calling the service desk and dials the local country number. The number routes to the nearest entry point in the Atos network. The call travels across the Atos network and to the appropriate service desk based on the time and selected language. At the end the call is received by the appropriate service desk.

E-mail: The end user sends an e-mail to the service desk. The key word is searched to determine the language of the e-mail. The e-mail delivers to appropriate service desk for language support.

Web chat: When the end user sends a chat to the service desk the end user accesses the portal to initiate a chat. The end user selects a language in the portal and the chat delivers to the appropriate service desk for language support.

Portal: In case the end user accesses the portal to initiate an incident or request, the end user completes an appropriate form for incidents or requests. The ticket routes to the appropriate queue for support.

2.6.3 Lean Management System

Atos GDC Canarias is using a lean management system. Lean management is an approach to managing an organization that supports the concept of continuous improvement, a long-term approach to work that systematically seeks to achieve small, incremental changes in processes in order to improve efficiency and quality (Salah, S., Rahom, A. & Carretero, J.A., 2010)

The daily operations of Atos GDC including the recruitment, training and tower service management are focused on continuous improvement. The agents, tools, knowledge & processes, clients, forecasting, shift schedules and the performance management together are striving for service desk success.

Chapter 3 Methodology

3.1 Qualitative research method

The analysis of the service desk performance of Atos Global Delivery center regarding customer Boehringer Ingelheim is done in one company for one client. The research method is a case study together with a descriptive design. A case study is defined as an intensive study of a single unit for the purpose of understanding a larger class of units (Gerring, 2004). In addition, a case study is an ideal methodology when a holistic, in-depth investigation is needed (Feagin, Orum & Sjoeborg, 1991).

There are three specific types of case studies: Exploratory, Explanatory, and Descriptive (Yin, 1993). Descriptive cases require a descriptive theory to be developed before starting the project (Tellis, 1997).

The descriptive methodology has four stages:

1. Design the case study
2. Conduct the case study
3. Analyze the case study evidence
4. Develop the conclusions, recommendations and implications. (Yin, 1994)

The descriptive design method is used to describe and analyze the service desk performance of Atos Global Delivery Center by using the key performance indicators. The key performance indicators are explained more detailed below.

3.2 Key Performance Indicators

The service desk performance provided by Atos GDC to customer Boehringer Ingelheim relate exclusively to calls and emails. To analyze the service desk performance of Atos Global Delivery Center regarding customer Boehringer Ingelheim the key performance indicators (KPI) are used. KPIs represent a set of measures focusing on those aspects of organizational performance that are the most critical for the current and future success of the organization (Parmenter, 2007). The KPIs are explained below.

Call abandon rate

The call abandon rate is the percentage of calls that are abandoned before completing the intended call. Basically, it is the total number of abandoned calls divided by the total number of inbounds calls.

Speed to answer/waiting time

The speed to answer/waiting time is the percentage of calls answered within 30 seconds. The minimum expected percentage is 80%.

Non-call contacts response time

The response time of non-call contacts is the response time of contacts through chat or e-mail within 30 minutes. The target is 93% with a minimum expected percentage of 90%.

First Call Resolution (FCR)

The First Call Resolution (FCR) is the ability to resolve customer problems, questions or needs in just one time. The target is 77% with an expected minimum of 74%.

Response time on incoming tickets from L2/L3

The response time on incoming tickets from Level 2 and Level 3 agents within 30 minutes. The target is 95% with an expected minimum of 92%

CSAT: Customer Satisfaction Rating

The Customer Satisfaction Score (CSAT) is the measurement of a customer's satisfaction concerning a product or service. The expected minimum is 85% with a target of 87%.

Call duration

The call duration is the length of the call with the customer. The target is 450 seconds with an expected minimum of 600 seconds.

3.3 Ishikawa diagram

Ishikawa diagram illustrates the cause of the problem in a particular group of causes. Several studies have used Ishikawa diagrams in problem-solving procedures where the branches of the causes include some components of the information system (Cahyana). The Ishikawa diagram is used to analyze the service desk performance of Atos GDC regarding customer Boehringer Ingelheim and to find to cause of the issue.

3.4 Data collection techniques

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer queries, stated research questions, test hypotheses, and evaluate outcomes (Vuong, T.-T., Nguyen, H., Ho, T., Ho, T., & Vuong Q.-H).

It is important that investigators use instruments that are reliable and valid for the population and purpose for which they will be used (Harmon, R. J., Morgan, G. A). The used instruments are documents, presentations and the website of Atos. The revision of company documents, presentations and the website of Atos are used to get a thorough understanding of the company. In addition, the utilization of the documents reinforces both quality and quantity of the company description and review.

Chapter 4. Literature review

4.1 Case study

In *What is a case study and what is it good for?* Gerring (2004) explains a case study is defined as an intensive study of a single unit for the purpose of understanding a larger class of units (Gerring, 2004). In *A case for the case study* (Feagin et al., 1991) a case study is described as an ideal methodology when a holistic, in-depth investigation is needed. The specific types of case studies are explained by Yin in *Applications of case study research*. In addition, the stages of a descriptive methodology are explicated in *Case study research: Design and methods* by Yin as well.

4.2 Information Technology (IT)

4.2.1 Definition

To understand and have a comprehensive overview of the IT services and consulting section, where Atos is operating, the principals of information technology (IT) are explained. In *introduction to Information Technology* Rajamaran (2018) explains Information Technology (IT) may be defined as the technology that is used to acquire, store, organize, process, and disseminate processed data which can be used in specific applications. Information is processed data that improves our knowledge, enabling us to take decisions and initiate actions (Rajamaran, 2018).

4.2.2 Types of IT services

IT services build, maintain, update, and service the software, hardware, and systems. The services help companies to operate efficiently, stay competitive and reduce costs. Since there are many different types of IT services, some examples are data infrastructure, software applications, platforms, data storage, communications, artificial intelligence, cybersecurity services, cloud, hi-tech transactional services and unified communications.

4.2.3 IT Services companies

Many companies prefer outsourcing IT services because of growth, a lack of employee resources or security concerns. The largest IT Services companies in Europe are currently: Accenture, Capgemini, Deloitte, KPMG, PWC, Ernst & Young and Atos. In the United States the largest IT Services companies are IBM Global Business Services and Cognizant Technology Solutions.

4.3 Key Performance indicators

In *Key Performance Indicators: Developing, implementing and using winning KPIs*, Parmenter explicates the definition of key performance indicators and how to use them in the right way. In *how to build manual for key performance indicators* the characteristics of the KPIs and the universal KPIs are outlined by Nagyoya and Pacaiova. In *Contracting outsourced services with collaborative key performance indicators* Henk Akkermans, Willem van Oppen, Finn Wynstra and Chris Voss explain how collaborative KPIs evaluate

and reward not only the supplier contribution to customer performance but also the customer's behavior to enable this.

4.4 Ishikawa diagram

In *A new model of Ishikawa diagram for quality assessment*, Luca (2016) clarifies the origin of the Ishikawa diagram. Dr. Kaoru Ishikawa (1915 – 1989) was a Japanese professor, advisor and motivator with respect to the innovative developments within the field of quality management. Kaoru Ishikawa is best known for the development of the concept of the fishbone diagram, which is also known as the Ishikawa diagram. The diagram is still used in many organizations for making diagnosis or taking concrete actions in which, the root cause of the problem is identified.

In *A preliminary investigation of information system using Ishikawa diagram and sectoral statistic* Cahyana (2018) describes the Ishikawa diagram as follows: Ishikawa diagram illustrates the cause of the problem in a particular group of causes. Several studies have used Ishikawa diagrams in problem-solving procedures where the branches of the causes include some components of the information system.

Additionally, Hermens (1997) explicates in *A new use for Ishikawa Diagrams* how service firms easily can adopt Ishikawa diagrams to diagnose process weaknesses and uncover sources of customer value. The Ishikawa diagram will be used to diagnose this process for Atos GDC Canarias.

4.5 Recruitment

In *Employer brand Building: Using social Media and career websites to attract generation Y*, Micik & Micudova (2018) explain the importance of social media to attract new employees, especially generation Y and millennials. Backhaus admits internet is important for job seekers in *An exploration of corporate recruitment descriptions on Monster.com*. Soulez & Soulez (2011) explain more detailed about the generation Y and recruitment marketing in *Recruitment marketing and generational segmentation: a critical analysis based on a sub-segment of Generation Y*.

Eger, Egerova & Micik (2015) show in *Is the Generation Y looking for the employer with higher purpose? In Corporate social responsibility and human resource management in V4 countries* how Generation Y is approaching the job market online. A research of Deloitte explicates how often millennials evaluate and search companies on the internet before applying for a job (Deloitte, 2016).

Carpentier, Hoye & Weng (2019) explain in *Social media recruitment: communication characteristics and sought gratifications* that exposure to information about an employer on social media can positively affect potential applicants' perceptions of the organization.

Chapter 5 Diagnosis of the problem

‘Critical analysis of the service desk performance of Atos Global Delivery Center regarding customer Boehringer Ingelheim’

5.1 The situation Boehringer

5.1.1 Introduction to the theme

Atos Global Delivery Center is providing IT services (Level-1 support) for Boehringer Ingelheim. The IT services are exclusively related to calls, emails and chats. Since the middle of August 2019 the performance of Atos GDC regarding Boehringer Ingelheim is degrading. The support provided by Atos GDC to Boehringer Ingelheim is lacking. This critical analysis examines the service desk performance of Atos GDC to encounter results and improvements eventually. At first, the situation Boehringer is explained. Afterwards the performance is measured, and the operations are analyzed.

5.1.2 Boehringer Ingelheim

Boehringer Ingelheim was founded in 1885 by Albert Boehringer in Ingelheim am Rhein. Boehringer is one of the largest pharmaceutical companies, and the largest private one with 146 affiliates and around 50.000 employees in all continents. Boehringer works in human pharmaceuticals, animal health and biopharmaceuticals (Boehringer, 2019). Atos Global Delivery Center is supporting Boehringer Ingelheim for more than 6 years. Boehringer is an important customer since currently more than 125 agents are providing support for Boehringer Ingelheim.

5.1.3 Locations

The Atos Global Delivery Centers (Figure 3) provide services 24 hours a day and 7 days a week from four different locations to customer Boehringer Ingelheim:

- GDC Canarias, Tenerife, Spain
- GDC Bydgoszcz, Poland
- GDC Chengdu, China
- GDC Manila, Philippines

5.1.4 Languages

From each Global Delivery Center, Atos is providing services in specific languages towards Boehringer Ingelheim. The language distribution per GDC is listed in table 1 below.

Global Delivery Center	Languages
Manila, Philippines	English (L1,5)
Tenerife, Spain	English, German, French, Spanish, Portuguese, Italian, Mandarin
Bydgoszcz, Poland	German (1,5), Polish, Russian, Turkish
Chengdu, China	Japanese, Mandarin

Table 1: Language distribution GDC regarding Boehringer (Atos, 2019)

5.2 The key performance indicators

The key performance indicators (KPI) are used to measure the service desk performance of Atos GDC regarding customer Boehringer Ingelheim. Every indicator gives information of the current situation concerning the performance of Atos. The key performance indicators (KPI) are calculated with the use of the numbers of the operations department for the month October and the first week of November. November MTD refers to November month-to-date, from the beginning of November to the current day.

5.2.1 Call abandon rate

The call abandon rate of Atos GDC regarding Boehringer Ingelheim is listed in table 2 below. The target is 3% while the expected minimum is 4%. The global call abandon rate started with 11% in week 41 to 9,55% in the first week of November.

Call Abandon Rate	Global	English	French	German	Italian	Japanese	Mandarin	Polish	Portuguese	Russian	Spanish	Turkish
Expected Minimum	< 4,00%	< 4,00%	< 4,00%	< 4,00%	< 4,00%	< 4,00%	< 4,00%	< 4,00%	< 4,00%	< 4,00%	< 4,00%	< 4,00%
Target	< 3,00%	< 3,00%	< 3,00%	< 3,00%	< 3,00%	< 3,00%	< 3,00%	< 3,00%	< 3,00%	< 3,00%	< 3,00%	< 3,00%
Trend												
Week 41	11.09%	5.94%	5.74%	26.25%	6.74%	1.03%	5.43%	7.69%	11.00%	3.31%	7.39%	0.00%
Week 42	10.40%	7.37%	8.88%	19.84%	12.93%	2.05%	3.75%	3.12%	5.88%	12.45%	6.54%	10.20%
Week 43	9.94%	12.81%	3.79%	16.87%	5.01%	2.06%	7.27%	4.30%	4.00%	10.00%	0.76%	31.11%
Week 44	10.39%	18.55%	9.09%	10.81%	14.57%	1.86%	6.07%	3.70%	6.53%	3.93%	3.44%	5.00%
Nov MTD	9.55%	17.48%	14.29%	10.45%	19.05%	3.26%	4.20%	1.92%	0.00%	1.77%	0.00%	14.60%

Table 2: The call abandon rate (Atos, 2019)

Important notes to mention:

- The English call abandon rate increased from nearly 6% in week 41 to 17,5% in the first week of November
- The German call abandon rate decreased from 26,25% in week 41 to 10,45% in the first week of November

Analysis:

Despite some of the rates decreased, the call abandon rates are still too high in the first week of November. The English and the German rate do not reach the expected minimum and the rates have the most impact on the global rate of 9,55%. There is improvement needed in these sections.

5.2.2 Speed to answer/waiting time

The speed to answer rate of Atos GDC regarding Boehringer Ingelheim is listed in table 3 below. The minimum expected speed to answer rate is 80% and the expected target 84%.

Speed to Answer	Global	English	French	German	Italian	Japanese	Mandarin	Polish	Portuguese	Russian	Spanish	Turkish
Expected Minimum	> 80,00%	> 80,00%	> 80,00%	> 80,00%	> 80,00%	> 80,00%	> 80,00%	> 80,00%	> 80,00%	> 80,00%	> 80,00%	> 80,00%
Target	> 84,00%	> 84,00%	> 84,00%	> 84,00%	> 84,00%	> 84,00%	> 84,00%	> 84,00%	> 84,00%	> 84,00%	> 84,00%	> 84,00%
Trend												
Week 41	64.80%	72.09%	78.55%	35.88%	71.55%	94.07%	76.96%	69.23%	71.84%	85.64%	66.63%	92.00%
Week 42	63.70%	63.53%	76.33%	41.25%	66.49%	89.55%	87.82%	75.00%	73.68%	69.96%	63.83%	75.51%
Week 43	65.71%	49.89%	85.42%	49.35%	79.65%	88.79%	77.51%	70.97%	91.00%	75.50%	83.94%	68.89%
Week 44	62.22%	36.07%	77.12%	57.75%	53.85%	92.56%	78.70%	92.59%	77.15%	80.35%	75.51%	95.00%
Nov MTD	66.75%	37.76%	79.37%	83.58%	57.14%	93.48%	84.49%	80.77%	96.88%	75.22%	100.00%	78.83%

Table 3: Speed to answer rate (Atos, 2019)

Important notes to mention:

- The global speed to answer rate increased from 64,8% to 66,8%.
- The English speed to answer rate decreased from 72% in week 41 down to 37,8% in the first week of november
- The German speed to answer rate increased from 35,9% in week 41 to 83,6% in the first week of november
- The Spanish, Portuguese, Polish, Mandarin, Japanese and German rates are reaching the expected minimum

Analysis:

The English and the Italian rates are too low with a great extent of degree. This impacts the global rate unless most of the rates are at an adequate level.

5.2.3 Non-call contacts response time

The non-call contacts response time of Atos GDS regarding Boehringer Ingelheim is listed in table 4 below. The target is 93% and the expected minimum 90%.


Non-Call Contacts Response Time	Global
Expected Minimum	> 90,00%
Target	> 93,00%
Trend	
Week 41	79.98%
Week 42	85.37%
Week 43	85.92%
Week 44	86.44%
Nov MTD	87.71%

Table 4: Non-call contacts response time (Atos, 2019)

Analysis:

The global rate increased from nearly 80% to 87,7%. There is still improvement needed to reach the target of 93% but the development is clearly visible.

5.2.4 First Call Resolution (FCR)

The First Call Resolution (FCR) of Atos GDC regarding Boehringer Ingelheim is listed in table 5 below. The Global FCR rate is displayed on the left side and the FCR per country on the right side. The yellow line is the expected minimum and the green line is the target. The expected minimum is 74% and the target is 77%.

Analysis

The FCR for the countries Colombia, France, Germany, Saudi Arabia, the Netherlands and Ireland on the right side of the graphic do not reach the expected minimum. There has been a reasonable improvement of the global rate from 77,4% in week 41 to 85,3% in the first week of November.

First Call Resolution Rate	Global
Expected Minimum	74%
Target	77%
Trend	↘
Week 41	77.37%
Week 42	73.70%
Week 43	76.05%
Week 44	78.03%
Nov MTD	85.28%

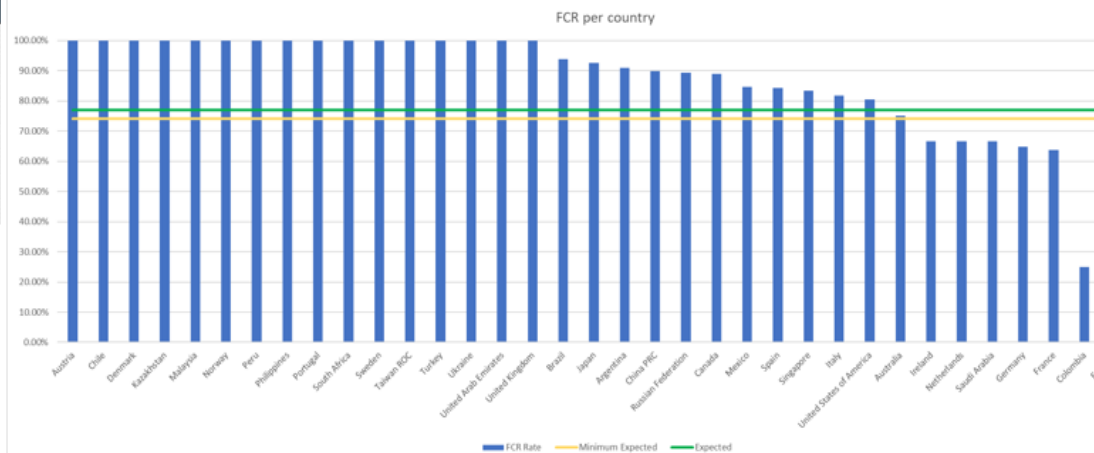


Table 5: First call resolution rate (Atos, 2019)

5.2.5 Response time on incoming tickets from L2/L3

The response time on incoming tickets from L2/L3 of Atos GDC regarding Boehringer Ingelheim is listed in table 6 below. As mentioned earlier, tickets from L2 and L3 are tickets from level 2 and 3 agents. The expected minimum is 92% and the target 95%.

Response Time on Incoming Tickets From L2/L3	Global
Expected Minimum	> 92,00%
Target	> 95,00%
Trend	↘
Week 41	59.31%
Week 42	62.50%
Week 43	62.62%
Week 44	58.87%
Nov MTD	57.14%

Table 6: Response time on incoming tickets from L2/L3 (Atos, 2019)

Analysis

The global rate decreased from 59,3% in week 41 to 57% in the first week of November. There is a huge improvement needed to reach the target of 95%.

5.2.6 User Satisfaction Rating (CSAT)

The global user satisfaction rating of the tickets of Atos GDC regarding Boehringer Ingelheim is listed in table 7 and the rating per country in table 8. The expected minimum is 85% and the target 87%.

User Satisfaction Rating	Global
Expected Minimum	85%
Target	87%
Trend	↗
Week 41	90.04%
Week 42	93.03%
Week 43	93.23%
Week 44	93.23%
Nov MTD	87.14%
MTD Feedbacks Received	61

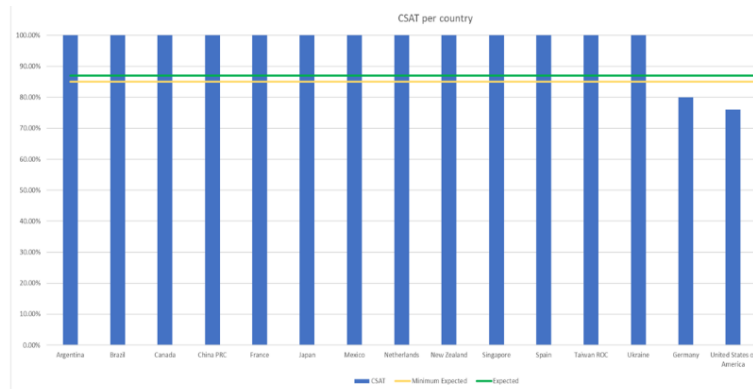


Table 7 & 8: User Satisfaction Rating Global & per country (Atos, 2019)

Analysis

The rate increased during October but decreased in the first week of November. Perceiving the trend, the CSAT is considered as stable. Both the expected minimum and the target are reached. The failing countries on the right side of figure 11 are respectively Germany and the United States of America. Both countries are practically attaining 80% but the performance is still insufficient. In general, the CSAT of Atos GDC regarding Boehringer Ingelheim is abundant.

5.2.7 The call duration

The call duration of Atos GDC regarding Boehringer Ingelheim is listed in table 9 below. The expected minimum is 600 seconds and the target 450 seconds. The percentage indicates the exceedance of the target.

Call duration	English	French	German	Italian	Japan.	Mandar.	Polish	Portug	Russian	Spanish	Turk
Target	<450	<450	<450	<450	<450	<450	<450	<450	<450	<450	<450
Average	785	556	529	718	619	363	446	647	692	637	410
%	+74%	+23,6%	+17,6%	+59,6%	+37,6%	-19,4%	-0,9%	+43,8%	+53,8%	+41,6%	-8,9%
+100%	174%	123,6%	117,6%	159,6%	137,6%	80,6%	99,1%	143,8%	153,8%	141,6%	91,1%

Table 9: The call duration (Atos, 2020)

Analysis

The Mandarin, Polish and Turkish call duration are marked in green and reaching the targets. The call duration of the other languages is not reaching the targets. The English call duration is the highest and exceeds the target with 74%. After this the Italian and the Russian call duration are the highest with respectively an exceedance of 59,6% and 53,8%.

5.2.8 Summary of the key performance indicators

After analyzing all the key performance indicators of Atos GDC regarding Boehringer Ingelheim some statements can be made. The call abandon rates, including the German and English rate, are still too high. The global speed to answer rate is, despite some rates do reach the target, too low and there is improvement needed. The non-call contacts response rate is nearly reaching the target. The global first call resolution rate is reaching the target abundantly despite some countries are failing. The response rate on incoming tickets from L2/L3 agents is too low and the performance is weak. The user satisfaction rating is of high standard. The outcomes of several KPI's will be discussed more detailed in the Ishikawa diagram.

5.3 Ishikawa diagram

To analyze the service desk performance of Atos GDC regarding customer Boehringer Ingelheim the Ishikawa diagram is used. The Ishikawa diagram illustrates the cause of the problem in a particular group of causes. Several studies have used Ishikawa diagrams in problem-solving procedures where the branches of the causes include some components of the information system (Cahyana, 2018).

Within the Ishikawa diagram the causes are grouped into the major categories which include:

- Measurement: Data generated from the process that are used to evaluate its quality
- People: Anyone involved with the process
- Environment: The conditions, such as location, time, temperature, and culture in which the process operates
- Machines: Any equipment, computers, tools, etc. required to accomplish the job
- Methods: How the process is performed and the specific requirements for doing it, such as policies, procedures, rules, regulations and laws
- Materials: Raw materials, parts, pens, paper, etc. used to produce the final product (Bradley)

Figure 3 below shows all the possible causes of the problem of Atos GDC regarding customer Boehringer Ingelheim. The possible causes are checked per category.

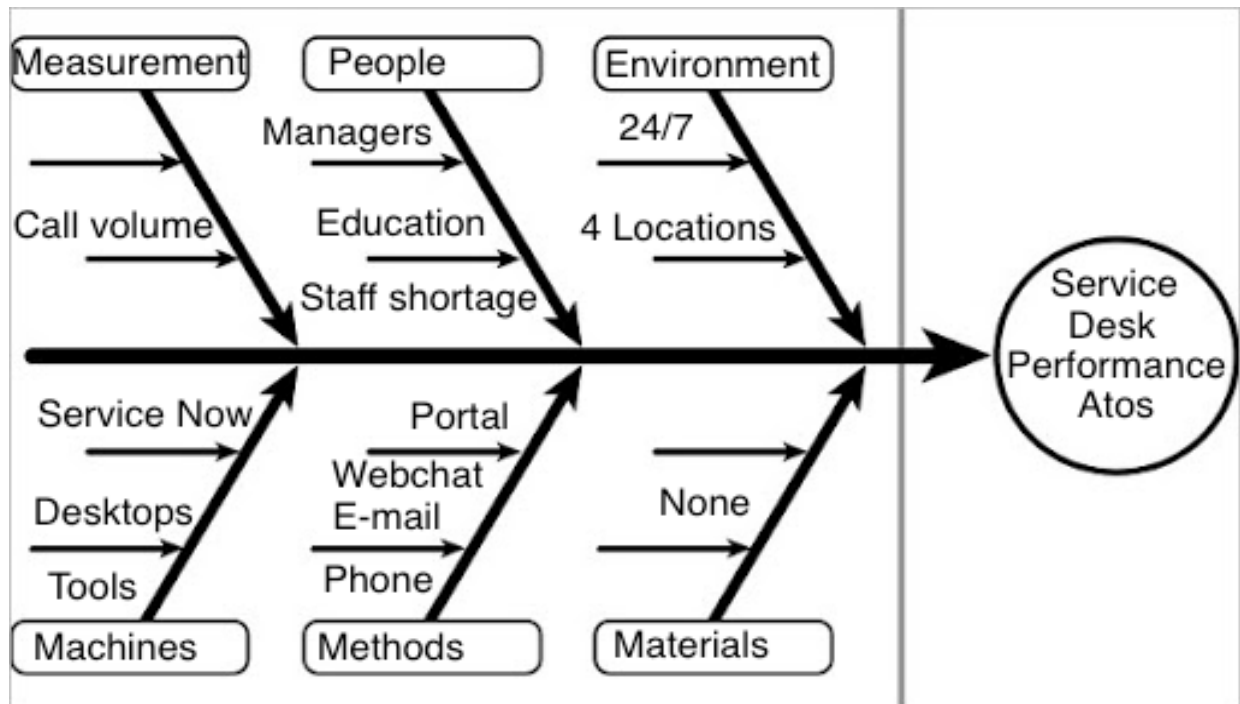


Figure 3: Ishikawa diagram (Woudt, 2019)

To analyze the service desk performance of Atos GDC concerning customer Boehringer Ingelheim all the major categories are measured to identify all the possible causes of the problem.

5.3.1 People

The people involved in the process is the Boehringer Ingelheim team. From four different locations more than 125 employees are working to provide services for customer Boehringer Ingelheim in eleven languages. This is shown in table 1.

Manila	Planned number of agents	Total current agents	Agents to be hire	Agents in BAU	Agents on training	BAU Date for agents in training	Agents trained but waiting credentials	Agents on long sick leave	Agents on short sick leave
English	37	25	8	24	0	04-Nov	4	1	0
L 1,5	8	8	0	8	0	N/A	0	0	0
TFE									
English	5	5	0	5	0		0	0	0
German	10	5	5	5	0		0	0	0
Spanish	0	0	0	0	0		0	0	0
French	8	8	0	8	0		0	0	0
Italian	6	5	1	4	0		0	0	1
Portuguese	10	9	1	9	0		0	0	0
Mandarin	1	1	0	1	0		0	0	0
Poland									
German	24	19	5	15	1		3	0	0
Turkish	4	4	0	4	0		0	0	0
Russian	10	8	2	8	0		0	1	0
Polish									
L 1,5	4	3	1	3	0		0	0	0
Chengedu									
Japanese	13	13	0	12	1		0	0	0
Mandarin	12	12	0	12	0		0	1	0

Table 10: Staff situation per location Atos GDC, 1-11-2019 (Atos, 2019)

The Tower Service Manager Shayda Pamies is responsible for the Boehringer Ingelheim team at Atos GDC Canarias while the Global Operations Manager Alexei Szeplaki is responsible for all four different locations.

The planned number of agents are calculated and based on historical data (KPIs). The total current agents are the number of agents under contract. The agents to be hired indicates Atos GDC is looking for candidates to fill up the vacancy. Agents in BAU (Business As Usual) signifies the agents who can effectively work. Agents on training are on a training program before joining the team. In addition, the agents waiting for credentials and the agents on long and short sick leave are listed in the figure.

Analysis per GDC:

Manila, Philippines

The planned number of agents for the English support is 37 while the current number of agents is 25. There is one agent on sick leave which means an amount of 24 agents in Business As Usual (BAU). In total there is a shortage of 13 agents concerning the English agents in Manila. 4 agents waiting credentials brings shortage back to 9. The number of level 1,5 agents is adequate.

Tenerife, Spain

The planned number of German speaking agents is 10 but the total agents in Business As Usual is just 5 which indicates a shortage of 5 German speaking agents. Regarding the Italian speaking agents, the shortage is 2 given there is one agent on short sick leave. The planned Portuguese speaking agents are 10 with 9 agents in BAU, a shortage of 1.

Bydgoszcz, Poland

With a planned number of 24 German speaking agents and a current BAU of 15 there is a shortage of 9 agents. Nevertheless, 3 agents waiting for credentials and one agent on training is bringing the shortage back to 5. The Russian shortage is 2 agents to exceed the 10 planned agents. Additionally, there is a shortage of one L1,5 German agent.

Chengdu, China

The planned number of Japanese agents is 13. When the agent on training finishes, the number of agents in BAU is 13 as well. The number of Mandarin agents is sufficient.

Summary

Atos GDC does not possess as much agents to provide services to Boehringer Ingelheim as the operations management is planning to have. A total shortage of at least 14 German speaking, 13 English speaking agents, 2 Russian speaking agents, 1 Portuguese speaking agent and 1 Italian speaking agent.

5.3.2 Methods

The methods include how the process is performed and the specific requirements for doing it, such as policies, procedures, rules, regulations and laws. The Boehringer team is providing IT services to customer Boehringer Ingelheim. The IT services are exclusively related to calls, emails, web chat and the portal.

Phone: The end user is calling the service desk and dials the local country number. The number routes to the nearest entry point in the Atos network. The call travels across the Atos network and to the appropriate service desk based on the time and selected language. At the end the call is received by the appropriate service desk.

E-mail: The end user sends an e-mail to the service desk. The key word is searched to determine the language of the e-mail. The e-mail delivers to appropriate service desk for language support.

Web chat: When the end user sends a chat to the service desk the end user accesses the portal to initiate a chat. The end user selects a language in the portal and the chat delivers to the appropriate service desk for language support.

Portal: In case the end user accesses the portal to initiate an incident or request, the end user completes an appropriate form for incidents or requests. The ticket routes to the appropriate queue for support.

The phone, e-mail, web chat and portal are available and working for all the Boehringer employees.

5.3.3. Machines

Machines include any equipment, computers, tools, etc. required to accomplish the job

Atos GDC provides desktops and screens for all the employees. The company even has an extra storage of desktops available. In addition, the Boehringer team is using several tools provided by Atos GDC to support customer Boehringer Ingelheim. The different tools will be mentioned shortly to have an idea of the provided systems.

The *call management system* is used to give an overview about the time, status and contacts for the agent. The system includes the time reporting, agent status, call wait and handling time, login data and contacts reviews.

The *ticket management system* allows the agent to log in via a Self-Service Portal and check the process of the incidents. The tickets can be approved, and knowledge articles can be found in the system.

The *reporting management system* reports all the calls, emails and chats received through Genesys (Telecommunications system). The average handling time, the call handling information and agent status time is noted as well.

The *capacity management system* is used for the forecasting and resource planning such as information of the employees, schedules, holidays and language skills.

The *customer satisfaction tool* is used for fast feedback and a proactive follow up. The tool is transparent because of the large displays on customer sites.

Service Now (Snow)

The agents supporting Boehringer Ingelheim start working in week 49 with a new system called Service Now. Service Now is a Cloud platform and a Platform-as-a-Service (PaaS). It is a set of tools and services designed to make coding and deploying applications much more efficient

Training has started in November to provide the agents with necessary knowledge about the new system. Since the agents attend training during working time the number of hours at the Boehringer service desk reduce. Less productive agents working during training hours can affect the call abandon rate and waiting time in a negative way. In addition, the agents need time to learn how to control the new system which can affect among others, the first call resolution and the call duration.

Summary:

Atos GDC is providing sufficient computers for the employees of Boehringer Ingelheim.

The call management system, ticket management system, reporting management system, capacity management system and the customer satisfaction tool are available for all the members of the Boehringer Ingelheim team. The new Service Now system can cause delay regarding the call abandon rate, waiting time, first call resolution and the call duration because of the scoop of system.

5.3.4 Materials

Since Atos GDC is providing a service to customer Boehringer there are no materials included in the process.

5.3.5 Measurement

Measurement includes data generated from the process that are used to evaluate its quality. Data from the call volume is evaluated to have a detailed look at the process.

Call volume

Atos GDC is providing services through the phone, e-mail, web chat and portal. The call volume of the inbound calls received from Boehringer Ingelheim is registered in the monthly track. The call volume is recorded from January to October and is listed in figure 4.

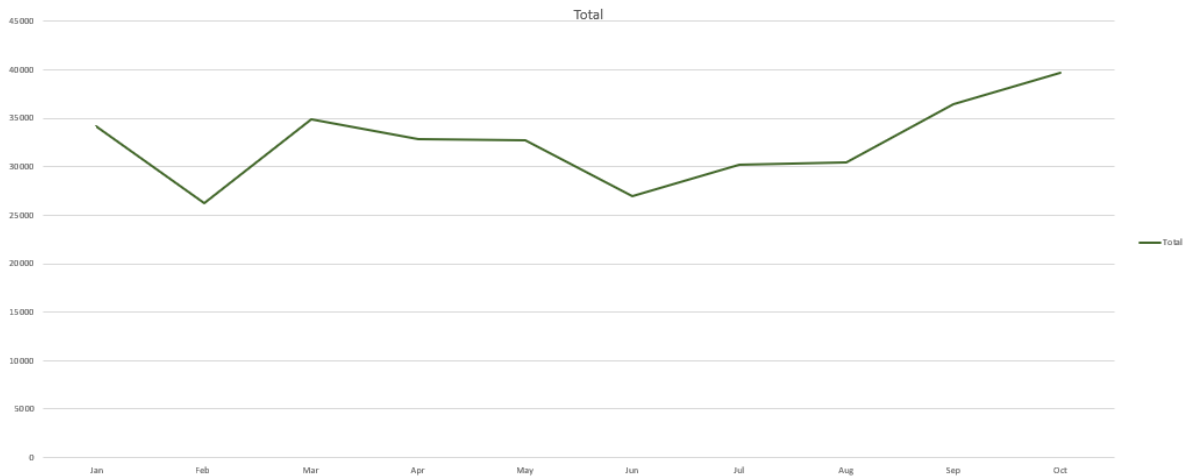


Figure 4: The recorded call volume of the inbound calls (Atos, 2019)

Analysis

The total call volume has been stable in general apart from two downfalls in respectively February and June. After the decrease in June the call volume has been growing till October.

The highest volumes are English (27,8%), German (24,6%), Mandarin (18,1%) and Spanish (9,4%). All the volumes increased compared to January except for the Turkish, German and French call volumes. The call volume is high for the English and German services. The call volume for the English services increased but for the German services

has not increased from January to October.

Results call volume analysis

The call volume is recorded in the monthly track from January to October and shows all the inbound calls regarding customer Boehringer Ingelheim. In the previous chapter the call volume is analyzed. The languages with the highest call volume are shown in table 11 below.

#	Language	Call volume October	% out of total volume
1	English	11.023	27,8%
2	German	9775	24,6%
3	Mandarin	7196	18,1%
4	Spanish	3745	9,4%

Table 11: Languages with the highest call volume (Atos, 2019)

The results show the great importance of the English, German, Mandarin and Spanish services of Atos GDC regarding Boehringer Ingelheim. The 4 major languages contain together 79,9% of the total call volume of Boehringer Ingelheim.

Shortage of Staff number per location

The shortage of staff member per location is represented in table 12 below. There is a shortage of 13 English agents and a shortage of 14 German agents. This shortage only concerns the Global Delivery Centers in Manila (English agents), Tenerife (German agents) and Bydgoszcz (German agents).

	Planned number of agents	Total agents in business as usual (BAU)	Shortage
Manila			
English	37	24	13
Chengdu	0	0	0
Tenerife			
German	10	5	5
Bydgoszcz			
German	24	15	9
Total			
English	37	24	13
German	34	20	14

Table 12: Shortage of staff number per location (Atos, 2019)

The correlation between the speed to answer rate and the staff shortage per language is

shown in figure 5 below. There is a strong correlation between a high staff shortage and a low speed to answer rate. The German and English language are showing this. In addition, there is a high correlation between a low staff shortage and a high speed to answer rate.

Speed to answer rate vs. staff shortage per language

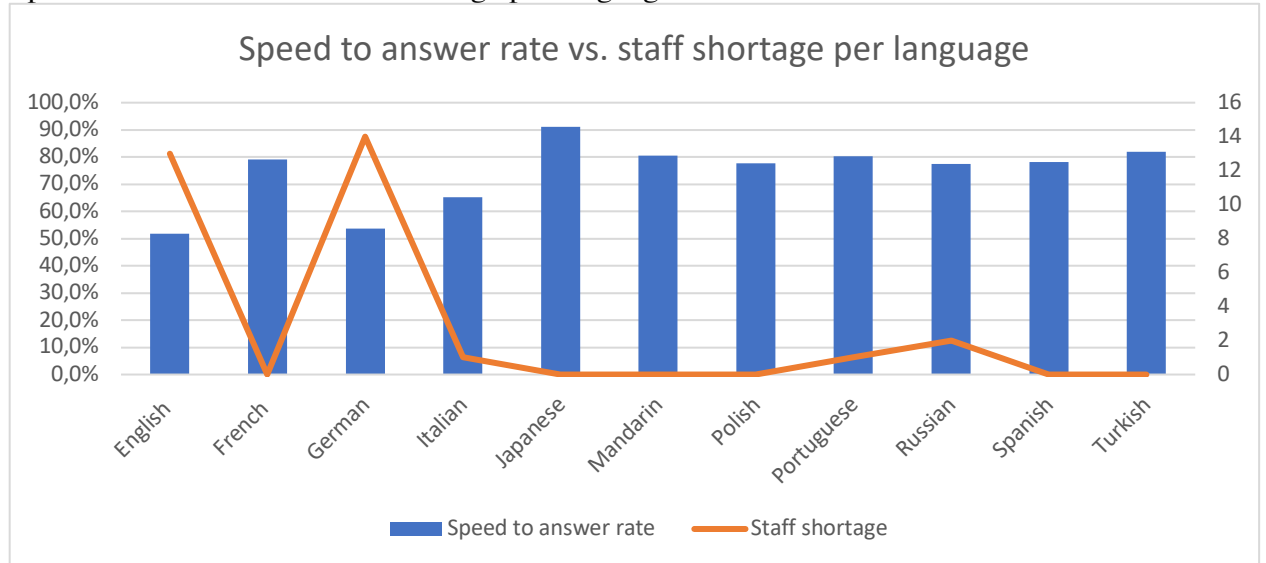


Figure 5: Speed to answer rate vs. staff shortage per language (Woudt, 2020)

In figure 6 below the correlation between the call abandon rate and the staff shortage per language is shown. There is a strong correlation between a high call abandon rate and a high staff shortage. The English and German language are showing this. The Italian and Turkish language are showing a relative high call abandon rate as well while there is no high staff shortage. The remaining languages show a correlation between a low staff shortage and a low call abandon rate.

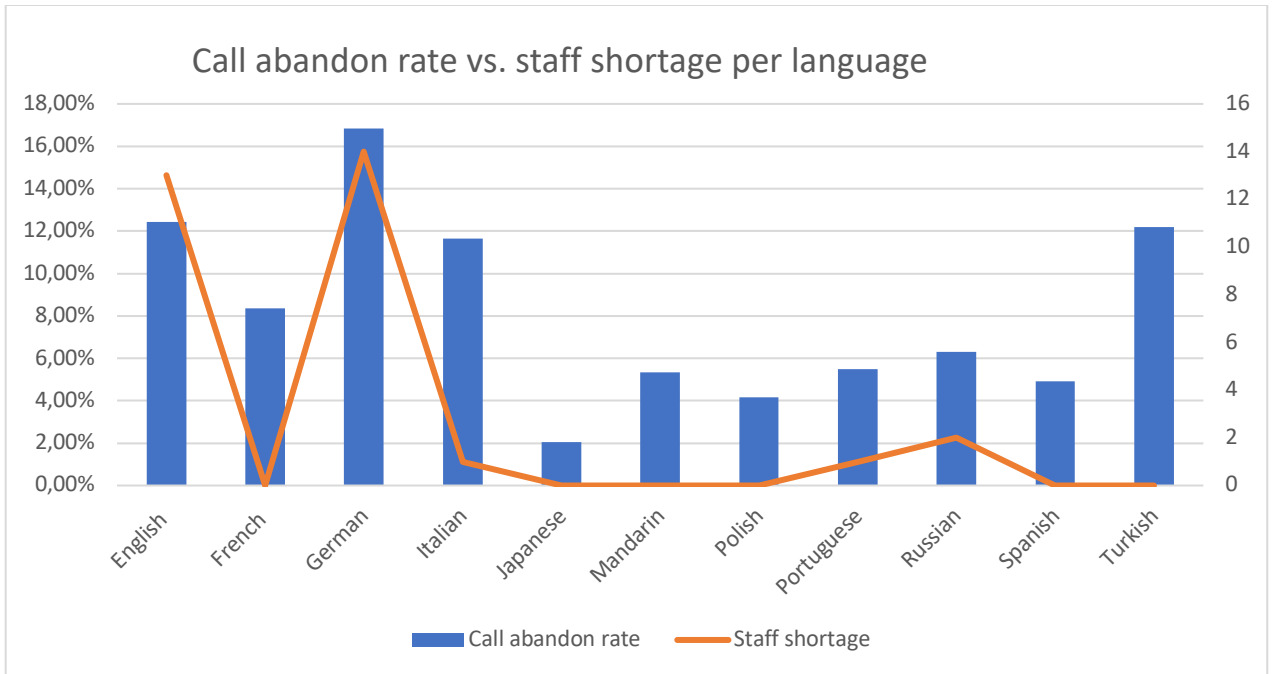


Figure 6: Call abandon rate vs. staff shortage per language (Woudt, 2020)

In figure 7 below the correlation between the call duration rate and the staff shortage per language is shown. As mentioned earlier, the rates above 100% are exceeding the targets. There is no correlation between a high staff shortage and a high call duration.

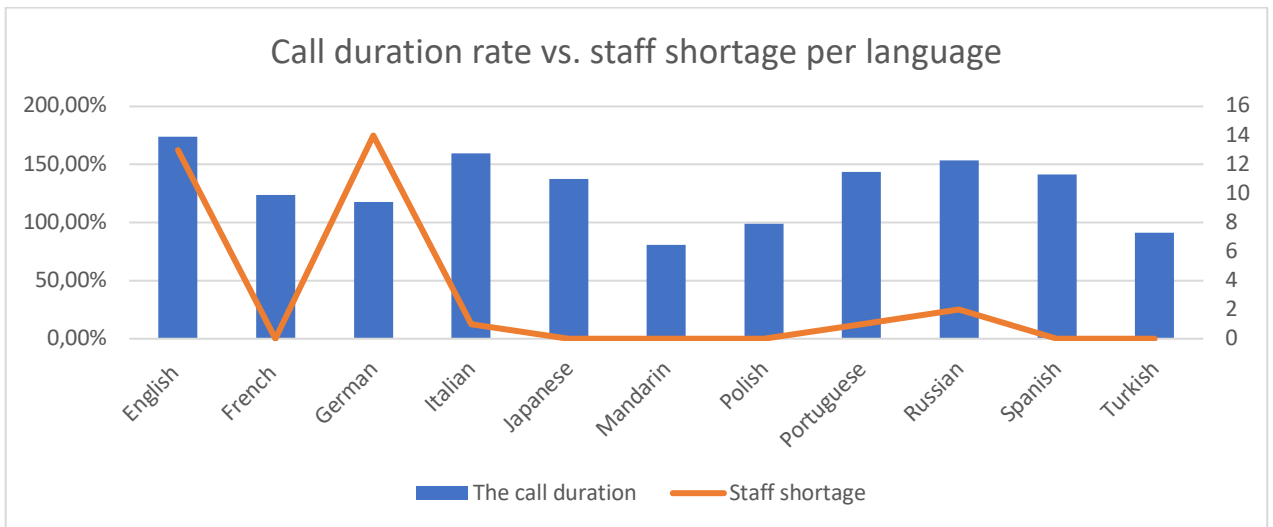


Figure 7: Call duration rate vs. staff shortage per language (Woudt, 2020)

5.3.6 Environment

The environment includes the conditions, such as location, time, temperature, and culture in which the process operates.

Atos GDC provides services 24 hours a day and 7 days a week from four different locations to customer Boehringer Ingelheim:

- GDC Tenerife/Canarias, Calle Subida al Mayorazgo, 24B, 38110 Santa Cruz de Tenerife, Spain

33 agents working for the Boehringer Ingelheim team

- GDC Bydgoszcz, Józefa Ignacego Kraszewskiego 1, 85-240 Bydgoszcz, Poland

34 agents working for the Boehringer Ingelheim team

- GDC Chengdu, China

25 agents

- GDC Manila, Philippines

33 agents

Atos GDC is experienced in offering services 24/7 from several locations. Only from the location Atos GDC Canarias, services are offered to more than 120 customers by more than 800 agents.

5.4 Possible causes

All the possible causes of the degraded service desk performance of Atos GDC regarding Boehringer Ingelheim are shown in table 13 below.

Problem	Degrading Service Desk Performance of Atos GDC regarding customer Boehringer Ingelheim since august 2019	Possibility	Reason
Possible cause 1	The call volume is high for the English and German services.	Low	The call volume for the English services increased but for the German services has not increased from January to October.
Possible cause 2	Global Operations Manager Alexei Szeplaki and Tower Services Manager Shayda Pamies	Low	Global Operations Manager Alexei Szeplaki and Tower Services Manager Shayda Pamies experienced managers are performing well regarding other clients.

Possible cause 3	The training/education of the Boehringer team	Low	All the employees making part of the Boehringer Ingelheim team are participating in training before starting. In addition, the CSAT and FCR are sufficient. Quality of the agents is good
Possible cause 4	The shortage of German and English agents spread over the locations Tenerife, Bydgoszcz and Manila	High	The shortage calculated on historical data German and English KPIs (speed to answer/call abandon rate) are the worst.
Possible cause 5	24/7 services from 4 different locations	Low	Atos is experienced in providing 24/7 services from different locations
Possible cause 6	The desktops	Low	Atos has sufficient desktops to provide services to customer Boehringer Ingelheim
Possible cause 7	Management tools	Low	The management tools are working and available to provide services to all customers, including Boehringer Ingelheim.
Possible Cause 8	New system Service Now	Low	Training has started in November and the new system will be implemented in December. This can cause delay. The degraded service desk performance started in august and the system in November/December. This is why it cannot have caused the degraded performance in august.
Possible cause 9	Methods: phone, web chat, E-mail and portal	Low	The several methods (phone, webchat, E-mail and portal) are working and available to provide services to all customers, including Boehringer Ingelheim

Table 13: Possible causes identified (Woudt, 2020)

Possible cause 4, the shortage of German and English agents spread over the locations Tenerife, Bydgoszcz and Manila is identified as the main cause of the problem.

Possible cause 4, The shortage of staff members

The shortage of German and English agents spread over the locations Tenerife, Bydgoszcz and Manila can be seen as a serious cause of the degraded service desk performance. The total shortage is 13 English agents and 14 German agents. This is identified as the cause of the problem.

The correlation between the staff shortage and the speed to answer rate/call abandon rate is shown in figure 4 and 5. Concerning the English and the German services the call volume is the highest from all languages so there are the most agents needed.

Chapter 6 Proposed solutions to the problem

In the previous chapter, the cause of the problem is identified as a shortage of German and English-speaking staff members for Atos GDC spread over the locations Tenerife, Bydgoszcz and Manila. In this chapter the possible solutions for the cause of the problem are given.

6.1 Proposed solutions

Online

Members of Generation Y have grown up in a world dominated by the media and they spend approx. 25 % of their time-consuming online content (Micik & Micudova, 2018). Concerning recruitment, it appears that the Internet has become one of the most popular sources of information for job seekers (Backhaus, 2004; Soulez & Soulez, 2011; Eger, Egerova & Micik 2015). It is also evident that especially Millennials often evaluate companies through the Internet before they apply for a job; they want to be sure before they link their professional lives with them (Deloitte, 2016). For Atos GDC this indicates the online presence is important to be attractive for new employees.

Social media

Studies about the use of social media as tools to attract potential applicants provide initial evidence that exposure to information about an employer on social media can positively affect potential applicants' perceptions of the organization (Carpentier, Hoye & Weng, 2019). Because the majority of job seekers (both active and passive) use social media, the social media pages seem to be promising devices for recruitment (Adecco, 2015).

Atos GDC Canarias has a Facebook page but is practically not using the account. In addition, the company does not possess an Instagram account and the activities on LinkedIn are limited.

Atos GDC Manila has no Facebook or Instagram page but has some activities on LinkedIn.

Atos GDC Bydgoszcz has an active Facebook page with more than 6.000 followers. Besides this, Atos Poland is present on Instagram and LinkedIn.

Social media platforms such as Facebook, Instagram, LinkedIn, YouTube, Ask.FM, Twitter, Pinterest, Tumblr and Meetup can help Atos GDC to attract new employees. Atos GDC should invest in these platforms to change the potential applicants' perceptions of the organization in a positive way.

Expat communities

Many of the foreign population (expats) gather on websites such as expat.com, internationals.com, expatica.com and expatnetwork.com. Atos can approach the communities through the websites and communicate job offerings to the foreign groups. For Atos GDC Canarias expatsspain.com can be an interesting network while for Atos GDC Bydgoszcz expatspoland.com can be helpful.

Tourists

Nearly 6 million tourists visited Tenerife in 2018 (Statista, 2020) with the German and the British nationalities as the largest contributors. More than 8 million tourists visited the Philippines in 2019 (Department of Tourism, Philippines, 2020). In addition, more than 18 million tourists visited Poland in 2017 (Polish Tourism Organisation, 2020). A minority out these millions of tourists interested in working and living in respectively Tenerife, the Philippines or Poland forms a considerable number of people. An opportunity rises for Atos to promote job offerings towards this group.

Mobility program

The European Union is offering a mobility program for young people aiming to work abroad called Eures. The financial support covers costs made by participants related to mobile work placement activities (Eures, 2019). Eures contributes financially with covering the costs for job interviews, relocation, language training and the recognition of the qualifications. The program is a constructive help for job seekers and Atos should take advantage of the program to attract new employees.

Germany

As mentioned earlier, Atos GDC Canarias and Atos GDC Bydgoszcz are especially in need of German employees to improve the service desk performance. Widely used career sites for German speakers are Monster Germany, Naukri, Stepstone Germany, Federal Employment Agency, Jobware and XING.com. Atos should promote job offerings through the named websites to reach potential candidates.

Anglophones

In addition to the needed German speaking staff, Atos GDC Tenerife and Atos GDC Manila are in need of English-speaking staff. Anglophones gather about jobs in Spain and Philippines on websites such as europelanguagejobs.com, thinkinspain.com, learn4good.com, spain.xpatjobs, jobstreet.com.ph, philippines.xpatjobs.com and jobs.laimoon.com. For Atos GDC there are opportunities to recruit potential employees through these websites.

Career sites

Global career sites such as Indeed, CareerBuilder.com, Dice.com, Glassdoor.com, Idealist.com, Google Jobs, LinkUp an Upwork are great platforms to post job offerings and meet job seekers. Some career sites are focusing on multilingual jobs like

europeanlanguagejobs.com and multilingualvacancies.com. Atos is already using a minority of the previous mentioned career sites but should take more advantage of the sites to attract potential candidates for all the Global Delivery Centers to a greater extent.

6.2 Conclusion

In this research the service desk performance of Atos GDC regarding customer Boehringer Ingelheim is measured since the service desk performance is degrading since august 2018. The key performance indicators and the Ishikawa diagram are used to criticize the service desk performance of Atos GDC.

The User Satisfaction Rating, the First Call Resolution and the Call Duration are showing a positive result. The causes of the positive result are pointing to the proficient service, knowledge, quality and efficiency of the agents. The call abandon rate, speed to answer rate, non-call contacts response time and response time on incoming tickets from L2/L3 are showing negative results.

After identifying all possible causes in the Ishikawa diagram, the shortage of staff members is identified as the main cause of the problem. The staffing problem concerns the German and English-speaking agents spread over the locations Atos GDC Canarias, Atos GDC Poland and Atos GDC Philippines. The shortage of staff members influences several KPIs such as the call abandon rate and the speed to answer rate.

Possible solutions for Atos GDC are focusing on online presence through social media to be more attractive for potential employees. Besides this, Atos GDC has several options to recruit potential employees (online) through expat communities, tourists, mobility programs and career sites.

6.3 Atos in the Algarve

Atos is opening a Local Delivery Center (LDC) in Loulé and plans to hire around 80 people by the end of next year to work there. The multinational, which presents itself as the “world leader in digital transformation”, in the Algarve will have as a main objective to bring a new service offering to the national market that supports and accelerates digital transformation with professionals who specialize in the development, implementation and management of digital solutions.

“For the first year (2020), business growth of 25% is expected at national level, based on the gradual growth of the team throughout the year, with the goal of reaching around 80 new employees by the end of the year. 2020,” summarized the company.

Atos added that "partnership protocols with the University of Algarve are already in place and are underway, which will enable the creation of synergies for research and participation of university-based technology resources."

«Atos will strengthen its presence in the Portuguese market, contributing to investment in the region and retention of skilled labor. We believe it will be a project of great social importance for the Algarve region, where we highlight the great support provided by the Chamber of Loulé, which has been invaluable since the first moments of this project,” said Octávio Oliveira, sales manager of Atos Portugal (Sul Informacao, 2019).

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Appendix Logbook

Tobias Woudt - Atos GDC Canarias - 14/10/2019 – 6/12/2019

Week	Date	Description activities	Collaborating Employees/Professors	Result
1	14-10-2019 – 18-10-2019	<ul style="list-style-type: none"> - Company tour and introduction - Watch along the Dutch service desk - Starting and working on the company description - Brainstorming about ideas for research; employee attractiveness, academic partnerships, recruitment and PR, operations - Develop research plans - Consultation with the university - Working on the company description part: Atos Canarias - Erasmus+ administration - Welcome info presentation - Revising Finance documents - Entering and revising My Atos - Risks Management test - Logbook documentation - Erasmus language assessment 	<p>Alicia Saura, Mohamed el Mahmdi, Wim Janze, Domingo Gonzalez, Luis Soromenho Gomes, Diego Fernandez, Lady Rodrigues, Jonatan Castanedo</p>	<ul style="list-style-type: none"> - Having an idea and registering of the company and its activities - Research ideas and plans - University contact - Business Operations Support overview, - Atos Canarias info - Erasmus scholarship - Welcome information - Finance overview - My Atos account/logbook
2	21-10-2019 - 25-10-2019	<ul style="list-style-type: none"> - Revising GDC Tenerife presentation - Working on the company description part: Atos Canarias - Revising clients of Atos - Organizational chart and SWOT-analysis Atos - Signing internal documents 	<p>Mohamed el Mahmdi, Diego Fernandez, Alicia Saura, Alexei Szeplaki, Liliya Arslanova, Luis Soromenho Gomes</p>	<ul style="list-style-type: none"> - Detailed Atos GDC Canarias info - HR overview - Client overview - Organizational overview - Planning with operations

		<ul style="list-style-type: none"> - Meeting with Operations Department - Discussion with the University - Revising guidelines final work - Consultation about the Finance to Operations transition - Working on the operations management part - Watch along the service desk - Formatting the report 		<ul style="list-style-type: none"> - Overview Guidelines for the Master's final work - Overview of the Operations department - Formatted report
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Week	Date	Description activities	Collaborating Employees/Professors	Result
3	28-10-2019 - 1-11-2019	<ul style="list-style-type: none"> - Moving to the Operations department - Creating a research topic ‘Business performance regarding Boehringer Ingelheim’ - Revising and analyzing the Operations Management concerning Boehringer Ingelheim - Consultation with Atos Coach - Starting the improvement plan for customer Boehringer Ingelheim - Attending meetings with Operations and the team leaders - Working on the Topic Introduction and Methodology - Briefing about the improvement plan for Boehringer Ingelheim 	Diego Fernandez, Alexei Szeplaki, Ander Goikoetxea, Yuremy Marrero Beck, Wil Visser, Felipe Diaz	<ul style="list-style-type: none"> - New working place - Research topic - Overview Operations Management Boehringer - Overview team leader meetings Atos - Topic Introduction - Methodology - Improvement plan Boehringer Ingelheim

4	4-11-2019 - 8-11-2019	<ul style="list-style-type: none"> - Analyzing the performance regarding Boehringer Ingelheim - Starting with the critical analysis - Helping with the ramp up plan for Boehringer - Working on the ‘Information Technology’ part - Critical analysis of the performance of Atos by using the KPI’s - Attending meetings with operations and the team leaders - Attending an interview with a future team leader - Consultation with the University supervisor 	Alexei Szeplaki, Ander Goikoetxea, Wim Janze, Felipe Diaz, Yuremy Marrero Beck, Luis Soromenho Gomes	<ul style="list-style-type: none"> - Overview of the business performance for Boehringer Ingelheim - Ramp up plan - Information technology part for the final report - Update about the operations management and the team leaders - Idea about the interview procedure
Week	Date	Description activities	Collaborating Employees/professors	Result
5	11-11-2019 - 15-11-2019	<ul style="list-style-type: none"> - Consultation with the Operations Manager - Doing the critical analysis of the situation Boehringer - Attending operations meetings - Attending a training about incident management - Helping with the ramp up plan for Boehringer - Editing chapter 2 - Training about Service Now 	Alexei Szeplaki, Boehringer team, Ander Goikoetxea, Andrea Dettori, Wim Janze, Luis Soromenho Gomes	<ul style="list-style-type: none"> - Clarification of the plan - Critical analysis of the situation - Knowledge about incident management - Ramp up plan - Knowledge about the Service Now tool - Operations check - Clarification with the supervisor

		<ul style="list-style-type: none"> - Operations check of the whiteboards, TV-screens and team leaders - Consultation with the University supervisor 		
6	18-11-2019 - 22-11-2019	<ul style="list-style-type: none"> - Moving to the Boehringer service team - Consultation with the Boehringer service team - Training about security incident - Attending operations meetings - Doing the critical analysis of the situation Boehringer - Operations check of the whiteboards, TV-screens and team leaders - Consultation with the Boehringer team - Working on the Boehringer improvement plan - Working on the results and discussion 	Alexei Szeplaki, Shayda Pamies, Wim Janze, Boehringer team, Andrea Dettori,	<ul style="list-style-type: none"> - New working place - Knowledge about security management - Critical analysis - Operations check - Improvement plan Boehringer - Results and discussion
Week	Date	Description activities	Collaborating Employees/professors	Result
7	25-11-2019 - 29-11-2019	<ul style="list-style-type: none"> - Consultation with employees about improvements - Working on the recommendations 	Alexei Szeplaki, Wim Janze, Shayda Pamies, Boehringer Team, Luis Soromenho Gomes,	<ul style="list-style-type: none"> - Recommendations for Atos GDC Canarias - Opinions of employees

		<ul style="list-style-type: none"> - Attending operations meetings - Improvement activities Boehringer Ingelheim - Operations check of the whiteboards, TV-screens and team leaders - Consultation with the University supervisor - Writing a motivation letter for the Erasmus internship - Soft skills communication training with Atos coach - Starting with the conclusion part 	Alexei Szeplaki, Wil Visser,	<ul style="list-style-type: none"> - Operations check - Deadlines and plan with the university - Motivation letter - Communication skills - Conclusion part
8	2-12-2019 - 6-12-2019	<ul style="list-style-type: none"> - Consultation with internship supervisor and Human Resources - Working on the recommendations - Attending operations meetings - Improvement activities Boehringer Ingelheim - Starting with the summary in Portuguese - Consultation with new employees - Operations check of the whiteboards, TV-screens and team leaders - Editing and formatting the report - Finishing administration and ending the internship 	Alicia Saura, Mohamed el Mahmdi, Shayda Pamies, Alexei Szeplaki Boehringer Team, Wim Janze, Luis Soromenho Gomes	<ul style="list-style-type: none"> - Details ending process of the internship - Improvement Boehringer - Summary of the report in Portuguese - Operations check - Formatted report - Finished administration and internship

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