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# Final Report

# Quality Assessment and Analysis of a Courier Company in Panama

Capstone Project - Masters in Supply Chain  
Engineering

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This document is a general summary of the Project “*Quality assessment and analysis of a Courier Company in Panama*”, presented as a capstone project for the classes of Capstone Project I and Capstone Project II of the career of MSc in Supply Chain Engineering UTP-GATECH 2015-2016. It has been modified to be published as an open document.

Aiming that this document could portrait the essence of the project, we choose to edit it, taking into account the sensitivity of the information given by the sponsor. In a fact considered as with little precedence in our country, a courier company agreed in providing every single piece of information available in their databases.

As we were developing this summary, we were very careful in giving it a flow that could help the reader understand the analysis, solutions and recommendations without the use of numerical values.

This project allowed us to make use of every single tool acquired from our professors and the high-level knowledge shared with us.

Additionally, with the help of our faculty advisors also involved in a Non-disclosure agreement with the sponsor, we provided with a product that gives values to the supply chain procedures the client has, reason why we were graded with the maximum grade (“A”) for both classes.

# Acknowledgment

Our dearest appreciation to our capstone advisors, Dr. John Bartholdi, Dr. Rita Takakuwa and Peter Viehweg for their time, dedication and availability to address our questions and guide us through this important project.

To SENACYT for trusting in our willingness to improve our capabilities through this world class program presented by UTP and Georgia Tech, aiming to create an important impact in the Panama logistics platform.

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## Executive Summary

In order to remain competitive in the market of Courier service. The client must provide an outstanding quality of service to its customers. In a service-oriented business such as Courier, it is imperative for the client to maintain excellent relationships with its customers.

Customers of Courier services expect short delivery times, visibility of their packages throughout the delivery process, comfort and low prices. We have assigned quantitative values to each of these and carried out a courier competition between the client and 2 of its competitors. The client came out in second place, showing a lack of visibility in their packages but also competitive qualities such as high comfort and very low prices.

We created KPIs in delivery time, traceability and customer care so that the client could evaluate itself and continually improve in these respects. KPIs such as delivery time from destination arrival, total transit times, registry of crucial states, and % of complaints.

Current KPI evaluation showed gaps in overall traceability and delivery time in some cities, as well as a huge difference in the delivery of packages and delivery of documents.

We recommend the client to make it easier for customers to complaint, and manage the complaints in a way that customer voices are heard. To improve the visibility and to register at least crucial states, give customers an estimate of how much time is left for the package to be delivered. The re-evaluation of contracts and incentives of 3<sup>rd</sup> party providers where the service is faulty. But most importantly, the difference between packages and documents must be reduced significantly. We propose the client to let senders assume the cost of the customs taxes so packages can arrive expedite, similar to document arrival time.

# 1. Problem Statement

The client believes there are areas of opportunities in improving their quality of service through an analysis and evaluation of their current supply chain. Based in a database analysis of the complaint records, the better management of the complaints and incidents information is required. The client will like to have clearly defined metrics and identify which are those of highly important to quality of service and ways to improve upon them in order to acquire a larger market share in the region through better quality of service.

## 2. Objectives

### 2.1 Main Objective

Provide the client with an analysis and evaluation of their supply chain and also provide them with a set of recommendations based in data findings. This is to provide an additional value to their operation so they can improve their level of service.

### 2.2 Specific Objectives

- Provide with a root cause analysis and give recommendations based in the findings, considering irregular patterns and the reasons behind them.
- Create a rough roadmap with precise pointers that could guide the customer to improve their service.
- Evaluate the client's performance, analyzing provided data during different time periods.
- Provide feedback of a new customer, based in our experience of sending packages and documents to Lima, Atlanta and Bogota.
- Create a list of KPIs based on our experience as customers of courier services and the client's customer complaints.
- Compare with some criteria the the client service against some competitors in the

courier business.

### 3. Deliverables

- Data base analysis and spreadsheets with analysis findings
- List with default complaints and ways to classify the complaints into defaults.
- KPI list
- Procedure for quantifying selected KPIs in a future
- Overall evaluation of the client service based in our own criteria

### 4. Methodology

This project was done with the data base of the deliveries in a one-year period, together with the description of complaints and the identification number that was used as a primary key to connect the **delivery table** with the **complaints table**. The connection and filtering of the databases was done by using SQL queries in SQLite.

The client has their own customized code to identify an airport, so with the help of a table that describes the code connected to the IATA<sup>1</sup> code the airport is related. We identified and connected the airports and their respective countries. The creation of these columns was of great use to identify the number of deliveries sent from each origin and

delivered to each destination, so as the combination of origin/destinations.

The use of queries was paramount for handling databases of 200,000 entries in a faster way.

The availability of a table with the expected delivery times gave us the opportunity to identify how well is the client doing compared to their promised time. Together with a python code created for this specific evaluation we created values that helped us identify areas of conflict.

Considering that every time in the record was entered in local time, we had to create a new column with all times in UTC, ready to be compared in the same base line.



For using the complaint table, we had to trim the deliveries table a bit, considering that the time for the complaint and deliveries tables were not 100 % compatible.

<sup>1</sup>IATA, International Air Transport Association

One of the biggest challenges was to create default entries for the complaint tables. We found almost 18 types of complaints where some of them meant the same in relation with other types and from those just a few of them match each other. In the end we settled for 7 types of complaints.

The feedback of the client's specialists that are deeply involved in the operations of the client such as the organized visit we had to the Tocumen Hub, where of great help to give shape to what we were looking at the database.

## 5. Background

The courier service is an industry that has evolved following customers' needs and has changed depending on the trends they mark. From the vision Jim Casey had in 1907 of creating a private messenger and delivery service to the creation of UPS in 1919 and the evolution DHL has had from their creation in 1969 together with the first door to door service in the world, marked important timestamps in the courier service history. It is also important to mention time stamps such as the DHL opening of the Caribbean service, being the first company to offer air express services to Latin-American in 1978. This is of great importance considering that our customer biggest area of development is precisely in Latin-America. With the immersion in the Panamanian market, DHL was the very first company offering this type of service from 1981, aiming to access a market not yet marked as an air hub. The importance FedEx has had over the industry is marked by the introduction of the overnight package delivery in 1973 that together with their customized fleet, changed once and forever the way packages are managed.

### 5.1 Client Overview

The client is a company with 20 years of expertise in the market of courier. With the utilization they have of the passengers' airplanes for delivering courier, the cost of operations of the client is significantly reduced.

As a member of the Star Alliance, the possibility of transporting a package to any destination increases substantially. Important liaisons with companies as Iberia has offered them the direct entrance to the European market and beyond.

Their product is divided in a Door to Door, Airport to Door and Door to Airport service which are locally served by subcontractors at the destinations. With very strong presence in Colombia, Costa Rica, Guatemala, Dominican Republic and Panama, the client is aiming to consolidate their presence in these locations and improve their services in locations where there exists the opportunity to grow.

## 6. The Courier Business

In a race against time, courier companies offer a reliable, fast and dedicated service of parcel and documents deliveries around the globe. An increased need of sending packages for express delivery caused this market to develop until what we recognize as courier service nowadays. Products such as urgent spare parts, perishables, business documents and e-commerce packages has set the minimum level of service and package delivery time of the market, however big stakeholders have not remained still and are deeply involved in research and development looking to raise their market share through even faster times and greater interaction with their customers through higher package visibility.

This industry is preparing for the challenge caused by the increasing market of ecommerce, however the race to shorten delivery times promised by e-commerce companies represent a big challenge for the courier services and even a threat considering the incursion of these traditional partners in the delivery business.

### 6.1 Hub selection

The business is not just about packages from an origin to a destination, it also needs to consider that for transporting those packages in the shortest time the optimal position and connections this position could have are paramount for the proper flow of packages. Places like Memphis, TN or Louisville, KY were not chosen just by chance. Things like position, labor cost, land cost and connections change the way we recognize these cities. Memphis, TN FEDEX “Super Hub”, Cincinnati, OH DHL “Super Hub”, DHL Hub Leipzig, Louisville, KY UPS “World Port” has changed the local and regional industry and the way business are done and will be done in the future.

It is a fact that position is important, if not, ask UPS and the opportunity they saw in Louisville, KY where 70% of the air connections in the USA are by 2hrs. It is also important the opportunity of developing R&D locally in benefit of the courier service. The horizontal land capacity for the establishment of huge facilities and the development of international airports are important lures for courier companies to establish their facilities.

Having said this, now we will identify the opportunities Panama has to be considered as a courier regional hub. First the location of Panama Pacífico and Tocumen International Airport provides with the opportunity to connect to 6% of the Americas including the important airport of Miami by 2 hrs, 55% within 4 hrs including the big markets of Brazil and most of the East Coast of the United States and 72% including east of Canada, almost 80% of United States territory and Chile and their perishable products market within 5hrs.



Fig.6. Air connections range calculated considering a Boeing 757-200PF with a cruise speed of 0.8M.

The proximity international airports have with the special economic zones, Panama Pacífico Airport is even within the facilities of one of the SEZ, represents the opportunity of big stakeholders to have their bulk products stored, served and deployed in few hours to their place of destination. Added to the fact that bulk products can easily access these SEZ's through two of the major maritime ports in Latin America (Manzanillo and Balboa) positioned in the North and South entrances of the Panama Canal.

Panama has a lot of opportunities to improve upon their logistics services and the country needs to act fast to adapt to the needs of the market. The chances of improvement in the courier services in Panama is very connected with how good Panama adapts to offer value added services in processes that have continuous flows. The important part of this is in recognizing that Panama is still not there yet, the courier companies needs to adapt themselves in order to serve a whole region, instead of a local market of almost 4 million people. Besides, this market will only continue to grow in

augmented flows with the revolution of ecommerce that will require systems in place for the delivery of goods.

## 6.2 Drivers of change in the Courier Business

It is important to recognize what are the drivers moving the world economy and in what areas Panama's courier companies and specifically the client could do to seize the momentum created by these trends.

### 6.2.1 E-commerce replacing traditional retail business

E-Commerce is already a reality in markets such as the United States where up to March 2016 e-commerce sales as percent of retail charts as per the Census Bureau has grown to 7.80% and has progressively grown from the previous years, as an example the percent in the third quarter of 2011 was of 4.90%.

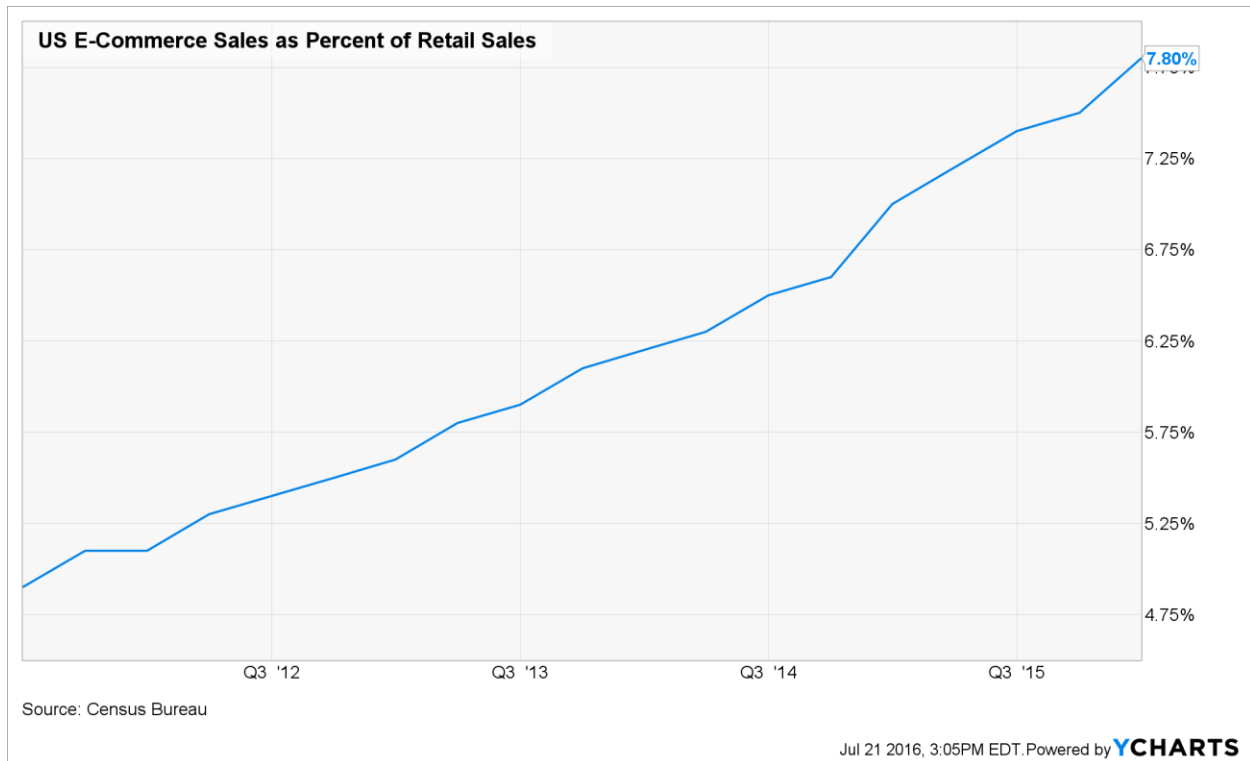


Fig 7.US Ecommerce Sales as Percent of Retail Sales. Retrieved from ycharts.com. URL: [https://ycharts.com/indicators/ecommerce\\_sales\\_as\\_percent\\_retail\\_sales](https://ycharts.com/indicators/ecommerce_sales_as_percent_retail_sales)

The increase of global internet users as per World Bank value had an increase of 7.10% from last year only and is counted as 40.69 users for every 100 people, this is expected

to keep growing in the coming years and has a strong correlation with the potential e-commerce could have in the world. If connected to our local market, there is not much difference considering that 2016 values show that in Panama 42.9 of every 100 people has access to internet connection. Latin America and the Caribbean, the clients biggest market, shows that 50.15 of every 100 people have access to internet.

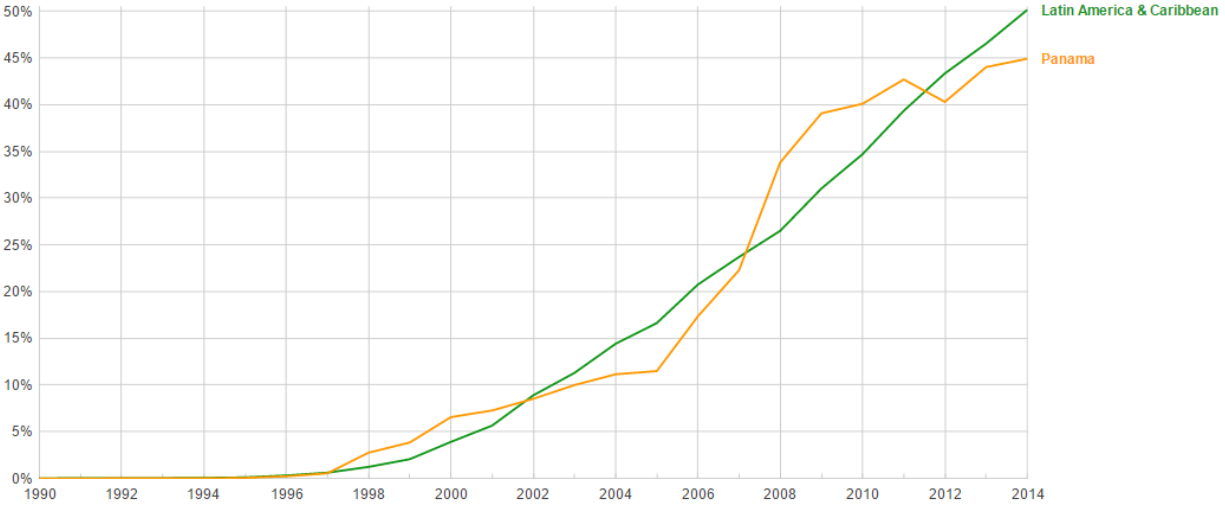


Fig.8. Internet Users as percentage of population. Source. World Bank. Retrieved from Google Public Data. URL: [https://www.google.com/publicdata/explore?ds=d5bncppjof8f9\\_&ctype=l&strail=false&bcs=d&nselm=h&met\\_y=it\\_net\\_user\\_p2&scale\\_y=lin&ind\\_y=false&rdim=region&idim=region:LCN&idim=country:PAN&ifdim=region&hl=en&dl=en&ind=false](https://www.google.com/publicdata/explore?ds=d5bncppjof8f9_&ctype=l&strail=false&bcs=d&nselm=h&met_y=it_net_user_p2&scale_y=lin&ind_y=false&rdim=region&idim=region:LCN&idim=country:PAN&ifdim=region&hl=en&dl=en&ind=false)

**6.2.2 Next day delivery**

Amazon, in liaison with the postal and courier services in the U.S, have raised the bar very high and still going for more. Amazon Prime and Amazon Now could have been unthinkable 10 years ago, however they are a reality and are improving the delivery time of goods and services even more.

Amazon has the proven strength to boost companies almost without chances of survival, like the case of United States Postal Services (USPS) that was destined to disappear due to the fierce competition of private courier companies and the capacity they had to offer better delivery times and handling. Taking this as an example and considering the expansion benefits Panama could offer to a world colossus such as Amazon, is time to consider the way to enhance our platform for offering 1 day deliveries to countries in the region in order to attract the mainstream of products acquired by ecommerce through our logistic platform. The benefit of this is the fact that

one of the main stakeholders are the local courier services such as the one of our client, the most important adjustments has to be made by them in order to be competitive in this imminent business opportunity.

### **6.2.3 Reverse logistics**

Attached to 1 day deliveries, customers nowadays are expecting to have the ability to return products that doesn't fulfill their expectations. It is not a secret that Amazon has a heavily customer guided policy and in the same way expect their liaisons to share the same conditions.

If together with the plan of delivering in 1 day, local couriers could provide customized services to offer customers a way to easily return products, private local courier companies will certainly take a quality step forward aiming to offer a service not yet offered in the region.

### **6.2.4 Real Time Traceability**

The market is now more concerned than ever with the quality of supply chains, safety, ethics and environmental impact their packages generate. "Consumers, companies and governments are demanding details about the systems and sources that deliver the goods" (New, 2010).

Events like worker suicides at Foxconn, had forced them to open more the visibility of the product even beyond. Mattel and the lead in toys, makes people realize and ask: where do my goods comes from?

As the market has changed towards openness in the processes, the courier service as part of the supply chain is requested to don't fall back. Having a real time traceability provides trust to customers, hence reducing the number of complaints related to the location of the package, identified as the primary complaint of the clients customers.

With the entry of smaller, more flexible and cheaper RFID's, the chances courier companies have to implement real time traceability increases with the development of new technologies.

The consumer, having the ability to create their own schedule around deliveries, are free to make their own decisions and guides us to our following field of opportunity.

#### **6.2.5 Self-Service**

Customers are willing to solve their own problems with the latest information of where their package is. This option will provide the courier with the chance to diminish their complaints, at least those complaints related to the visibility of a parcel.

#### **6.2.6 Environmental friendly products**

Carbon footprint is of main interest in any type of industry, the importance customers give to the background of their packages is connected among other things to how environmentally responsible they were managed. The use of huge amounts of packing connected with the emissions generated are amongst the challenges courier companies have. Creating innovative ideas will provide them with the satisfaction of fulfilling with their fair share and represents a marketable asset towards the environmental responsibility companies should have.

Among other things, courier companies could have the best from the customer needs, based in how innovative they could be in things such as hyper connected systems, consistency in the customer service and the ability to customize products and deliver them in a short time.

## **7. Data Base Analysis**

In order to identify areas of improvement, an analysis of the supplied data base was done. At the same time the findings we had, could be used by the client to validate further studies and identify areas of opportunities. The first idea was to identify where are the key markets located at, and how big is the impact generated by their service. We are expecting this information could help the client to renegotiate or change subcontractor agreements.

Hoping this helps illustrate the client actual service, we present the results of our data base analysis as follows:



## 7.1 Client markets

The importance of this analysis is mainly to identify where are the markets were the client have a bigger impact and those that represent an opportunity for further development. Considering that the client manages their subcontractors independently and one per destination, this analysis plus the number of complaints received for each, will help them visualize who are those subcontractors with low performance and provide them with the opportunity to renegotiate their contractual relationship.

An additional interesting evaluation was to identify any marked pattern that could show a seasonality in the clients' service. We could have thought beforehand that December was going to represent a significant increase in deliveries of packages at the very least; however, our numbers show a stable flow of deliveries throughout the year.

## 7.2 Incidence analysis

First, it is important to identify what are the differences of incidence and complaints as per the client. Incidence is every condition that doesn't allow a package or document to have a continuous regular flow to his destination due to a predefined default condition e.g. (Pending in the taxes payment, waiting for instructions, detained in customs, delay in the delivery, etc.), they are introduced solely by the client or approved subcontractors in the B1 system, that is an internal system the manages the full detail and entries of a delivery. Complaints are any written statements registered in the clients platform stating an unsatisfactory or unacceptable condition. Complaints currently do not have predefined values and are registered by a customer service agent with information provided by a customer via phone, email or any other means. Comments can also be processed as complaints if presented to the client through their suggestions "Sugerencias" or contact us "Contactenos" options at the Customer Care tab in the clients' webpage.

## 7.3 Customers behavior

The truth is that we are not expecting to have huge numbers considering the values given in the results, however we utilized the ideas acquired from John Goodman and his study in customer behavior presented in the “Basic Facts on Customer Behavior and the impact of service on the bottom line”, where he presents the tip of the iceberg phenomenon (See Fig.9). In his explanation he states that the complaints that are escalated to a Management or HQ level represent from 1 to 5 percent of the total of customers that had an unconformity and do not report any complaint. He also states that from the 100 percent of unconformity, about 45% of the customers complain to an agent or front line representative that in most of the cases do not transfer the unconformity to the correct level. The value of this, is to avoid being reliant with low percentages of complaints and recognize that the decimals are important for this cases, having said the previous we considered in evaluating the complaints with 3 decimal numbers e.g. (0.013).

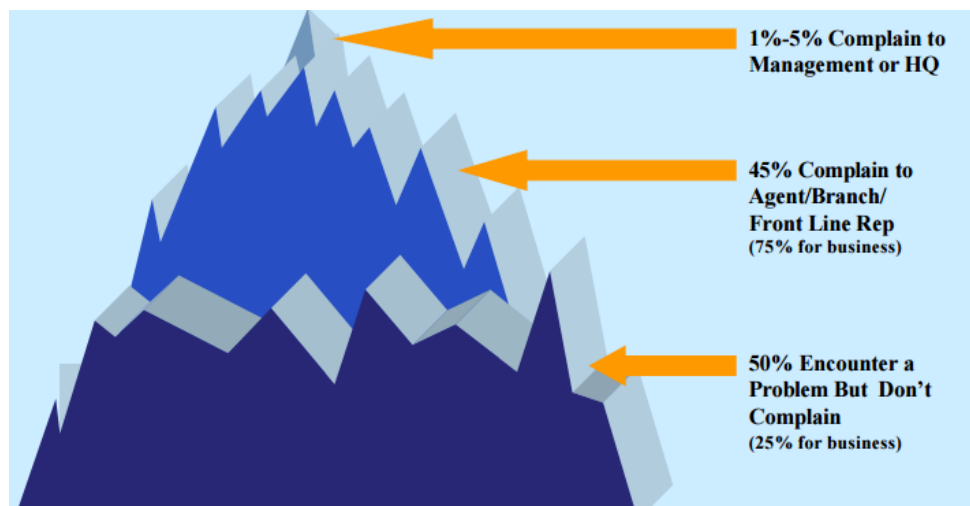


Fig.9. The Tip of Iceberg Phenomenon. John Goodman. Retrieved from Basic Facts on Customer Behavior and the impact of service on the bottom line.

## 8 Courier Quality of Service

In order to appropriately make an assessment of the quality of service of the client, we must first discover what entails the aspects of the courier service that are important for the customer. The categories of service detailed here have been devised by ourselves from pouring through the Courier services analysis.

The categories of service we will be considering are the following: Delivery Time, Visibility, Comfort, Price, Integrity of Package, Information Awareness and Trust.

### 8.1 Customer Complaints

As stated before, courier services differentiate themselves from other delivery services thanks to their enhanced speed of delivery and advanced tracking systems, so it is natural for customers to expect high quality in these respects.

We will now discuss in detail each of these aspects of quality, in order of our gauged importance.

#### **8.1.1 Delivery Time**

This metric is pretty much self-explanatory. The time it takes for a customer to receive their parcel or packages. In the Courier business, it is the single most important service provided for the customers. As such, a courier business should strive in providing the best time of delivery possible for its clients.

#### **8.1.2 Visibility**

Experts have called the 2000s the era of information and customers nowadays expect a certain amount of information about their packages. If customers are given a sense of

where the package is along the process of delivery, it makes the customers more involved with the company and also makes the customers trust more the company. It gives customers the opportunity to plan ahead or be ready for an important delivery to arrive. For courier services, visibility is mostly handled through a unique ID given to every parcel or package with which customers and companies can track online. Visibility is very important for a service such as Courier since customers generally send parcels of high value and would like to know real-time where their high-value items are.

### ***8.1.3 Comfort***

A service-oriented business such as the clients, must make transactions and processes that involve customers as easy as possible for the customers. Specifically, for the courier business, how much work do customers have to do. The courier service must be willing and flexible to pick-up packages where and when it is convenient for customers, reaching out to the company to realize a pick-up and delivery must be made easy for customers, at the time of pick-up help the customer with what is required or provide the information the customer needs for the process.

### ***8.1.4 Price***

Customers understand that providing a Courier service is expensive. However, in the capitalist world the lowest price always has an advantage of differentiation at the time of luring customers into a service. Having the best and lowest price in the market is an inherent part of the quality of service provided by a company and provides a point of comparison when we talk about the Courier Competition.

### ***8.1.5 Integrity of Package***

If a customer sends a parcel or package through a Courier service, he or she expects the shortest time of delivery possible as well that the package will arrive to its intended destination. Besides arriving, the package should also be in a good state. It must not be broken, shattered or with any physical harm to its volumetric dimensions.

### ***8.1.6 Information Awareness***

For any transaction in the world, there is information required from both parties. In the courier business, the companies should make the customers fully aware of the requirements to send or deliver packages. The ability to communicate well with

customers and making sure they understand what making business with each other entails is crucial for service.

**8.1.7 Trust**

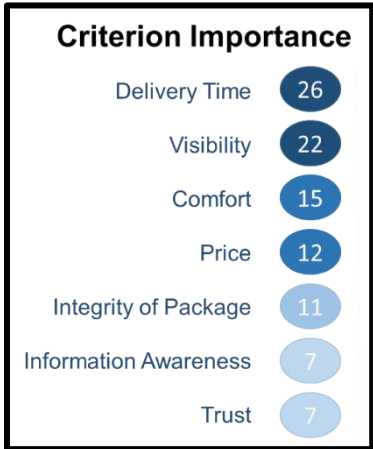
In the end, quality of service is perception. Every customer is different and if that customer is to repeat service with the company, the customer must trust the company. Customer’s perception, how they perceive the company and its apparent quality of service can make or break the quality of service of a company.

In the following section we will discuss the Courier Competition.

## 9. Courier Competition

During the course of the project we devised and executed a Courier Competition with 3 distinct courier service providers. The goal of this Competition was to fully understand the process for a new customer in each company and compare the apparent quality of service of each company. We chose three destinations because they provided us with depth and breadth of the service provided by our client. Note that this Competition was not made at a large scale – we only sent a total of 27 deliveries which is not enough to fully assess the quality of service of any of the companies, but did provide us with a few key insights.

In order to quantitatively compare the companies and objectively be able to declare a winner for the Courier Competition, we assigned numerical values to the categories of service previously mentioned. Figure 10 shows each of the categories of service with their respective maximum possible assigned value.



*Fig. 10. The Categories of Service to be analyzed with their respective maximum possible assigned value.*

Note that the sum of these values is 100, which is the highest possible score a company can attain. The assigned numerical value to each of the criterion is subjective. We assigned the most important value for Delivery Time because is what defines a Courier service, the next to Visibility because of the high amount of complaints from the client customers about traceability. Comfort and Price got the next two stops because the importance of making things easy for customers and having the best price in the market. In the end these are not as important as Delivery Time or Visibility since customers could be willing to work harder or pay more for a faster delivery time and more traceability of their parcels.

With the numbers of each of the criterion assigned, we can evaluate the courier services. Some of the evaluations are somewhat subjective such as Visibility, Comfort, Integrity of Package, Information Awareness and Trust. Delivery Time and Price, however, are corroborated with hard evidence – the actual delivery time and the actual price charged by the company. Each company will receive a scorecard based on their performance on each of the destination countries and each of the parcels delivered. Hence, each company will have 6 scorecards. In the end, these scorecards will be averaged to obtain the overall results of the Courier Competition in order to determine the best Courier provider.

**“Results not disclosed based in a NDA with the sponsor”**

## 10. Client KPI's

The use of KPI's will provide the client with a quantifiable tool for measuring how much are they improving regarding the issues identifies by us in the data base analysis. This tool needs to be used carefully in some cases such as the complaints, as they are measured based in how many entries are registered in the database. To avoid manipulation, customers should be able to have their complaints registered in an easy platform with direct connection to the master database.

The idea is of having “enough” KPI’s that helps the client identify the evolution of their main issues.

Considering the need of having KPI’s, the next question is, how many KPI’s are enough? As explained by Dr. Rachad Baroudi “A large list of KPIs that does not have clear linkages to a business’s overall objectives may be a sign of a larger problem: a lack of strategic focus, reason why we consider in selecting KPI’s for the major issues which are complaints, traceability and delivery time. The number of KPI’s should be enough as practical. A large number of KPI’s will lead to operators with enough time just to match numbers instead of goals.

Based on the information that was available for us to analyze, only traceability and time-related aspects of a package can be usefully analyzed. Therefore, we have decided to focus on Delivery Time, Visibility and Complaints management as the main Quality of Service aspects to be considered in this section.

## Conclusions

Our client represents the essence of what Panama can offer in terms of service through their logistic platform and can be used to evaluate the condition of Panama's logistic platform as a whole. The vision the client had, to seize the momentum created by global trends in the delivery of packages and documents, combined with their fleet connectivity, was the right one.

The client is at the right position at the correct time. The flexibility they could have to easily adapt to market changes will make the difference between a regional competitor and a world class competitor.

What we identified as paramount in this type of business is the closeness the company has with its customers in order to understand their needs. This statement was validated where one of the drivers that moves consumers is the real time traceability and one of the biggest sources of complaints was precisely the lack of traceability.

Now with a deeper insight of what does the client do and considering the findings we had from the data base analysis, we rehearsed our recommendations and proposed a road map that could be utilized by them in order to reach the desired objective presented at the beginning of this report.



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## Appendix A

### Queries for Complaints, Quantifiable tool (KPI's)

#### Queries used in Data Base Analysis

##### Query for different type of Complaints for each Origin-Destination Combination

```
SELECT newquejas2.Pais_Origen, newquejas2.Pais_Dest, COUNT (*),  
COUNT(newquejas2.Categoria) AS Ttal,  
COUNT(CASE WHEN newquejas2.Categoria = 'TRACEABILITY' then 1 ELSE NULL END) as Traceability,  
COUNT(CASE WHEN newquejas2.Categoria = 'INTEGRITY' then 1 ELSE NULL END) as Integrity,  
COUNT(CASE WHEN newquejas2.Categoria = 'DELIVERY TIME' then 1 ELSE NULL END) as Delivery_Time,  
COUNT(CASE WHEN newquejas2.Categoria = 'TRUST' then 1 ELSE NULL END) as Trust,  
COUNT(CASE WHEN newquejas2.Categoria = 'INVOICING' then 1 ELSE NULL END) as Invoicing,  
COUNT(CASE WHEN newquejas2.Categoria = 'OUTSOURCE' then 1 ELSE NULL END) as Outsource  
from newquejas2  
GROUP BY 1,2
```

##### Query for type of complaints by type of Freight. 1<sup>st</sup> part of Complaints KPI's

```
SELECT newquejas.Flete,  
       COUNT(newquejas.Categoria) AS Ttal,  
       COUNT(CASE WHEN newquejas.Categoria = 'TRACEABILITY' then 1 ELSE NULL END) as Traceability,  
       COUNT(CASE WHEN newquejas.Categoria = 'INTEGRITY' then 1 ELSE NULL END) as Integrity,  
       COUNT(CASE WHEN newquejas.Categoria = 'DELIVERY TIME' then 1 ELSE NULL END) as Delivery_Time,  
       COUNT(CASE WHEN newquejas.Categoria = 'TRUST' then 1 ELSE NULL END) as Trust,  
       COUNT(CASE WHEN newquejas.Categoria = 'INVOICING' then 1 ELSE NULL END) as Invoicing,  
       COUNT(CASE WHEN newquejas.Categoria = 'OUTSOURCE' then 1 ELSE NULL END) as Outsource  
from newquejas  
GROUP BY newquejas.Flete
```

**Query for calculating the total number of deliveries per type of freight. 2<sup>nd</sup> Part of Complaints KPI**

```
SELECT daresumen_for_quejas2.Flete, COUNT(daresumen_for_quejas2.Flete)  
FROM daresumen_for_quejas2  
GROUP BY daresumen_for_quejas2.Flete
```

### **Query for calculating Seasonality per country of Origin**

```
SELECT daresumen_for_quejas2.PaisExpedidor,COUNT(daresumen_for_quejas2.Mes),  
COUNT(CASE WHEN daresumen_for_quejas2.Mes ="2015-06" then 1 ELSE NULL END) as June_2015,  
COUNT(CASE WHEN daresumen_for_quejas2.Mes ="2015-07" then 1 ELSE NULL END) as July_2015,  
COUNT(CASE WHEN daresumen_for_quejas2.Mes ="2015-08" then 1 ELSE NULL END) as August_2015,  
COUNT(CASE WHEN daresumen_for_quejas2.Mes ="2015-09" then 1 ELSE NULL END) as September_2015,  
COUNT(CASE WHEN daresumen_for_quejas2.Mes ="2015-10" then 1 ELSE NULL END) as October_2015,  
COUNT(CASE WHEN daresumen_for_quejas2.Mes ="2015-11" then 1 ELSE NULL END) as Novemebr_2015,  
COUNT(CASE WHEN daresumen_for_quejas2.Mes ="2015-12" then 1 ELSE NULL END) as Dec_2015,  
COUNT(CASE WHEN daresumen_for_quejas2.Mes ="2016-01" then 1 ELSE NULL END) as January_2016,  
COUNT(CASE WHEN daresumen_for_quejas2.Mes ="2016-02" then 1 ELSE NULL END) as February_2016,  
COUNT(CASE WHEN daresumen_for_quejas2.Mes ="2016-03" then 1 ELSE NULL END) as March_2016,  
COUNT(CASE WHEN daresumen_for_quejas2.Mes ="2016-04" then 1 ELSE NULL END) as April_2016,  
COUNT(CASE WHEN daresumen_for_quejas2.Mes ="2016-05" then 1 ELSE NULL END) as May_2016,  
FROM daresumen_for_quejas2
```

GROUP BY daresumen\_for\_quejas2.PaisExpedidor