Managing the aftermath of a natural disaster in a service oriented company

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Abstract *— The workplaces are susceptible to natural disasters, particularly companies proving services. Infotech Aerospace Services, an aerospace engineering company, got affected by a major hurricane. Being unable to provide their services, two phases' plans were developed and implemented on a short and long term basis. The short term goal was to minimize the downtime by providing partial services in 3 weeks. In the other hand, the long term was to reconstruct the building facilities in 8 weeks. Due to a robust planning, the company achieved both goals. Improvements can be made on a future state by compiling a list of possible buildings outside of the hurricane disaster zones.*

Key Terms *— Atmospheric events; Customer expectations; Production downtime; Workplace*

INTRODUCTION

Infotech Aerospace Services, an aerospace engineering services provider company, got affected by hurricane Maria by not being able to provide their services; due to the extensive damage on three of the four buildings. Being located at the northwest of Puerto Rico and near the coast, high sustained winds were inevitable. Communication was their principal key point; first by ensuring employee safety, evaluating their facilities structural integrity and plan developmental initiation. Figure 1 shows a summary of the principal key point and ideas to approach the situation.

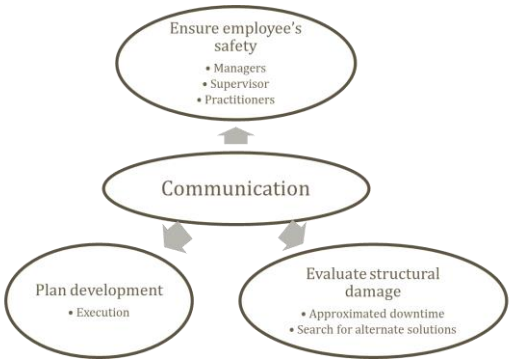

Figure 1
Key Points

Main Objectives

The company goals were focused on two principal time frames, first the short term and second the long term solutions. These were:

- Minimize the downtime providing partially engineering services
- Maximize the production services reopening the working facilities

BACKGROUND

During last year, Puerto Rico suffered the devastation of hurricane Maria; people encountered consequences during the following months to start working again. The service industry got affected and Infotech Aerospace Services was not the exception, with their building severely damaged and not allowing employees to work for security purposes. As a service company, their main objective was to start working as soon as possible in order to keep generating cash flow and be able to pay their employees. After communicating with some employees and ensuring their safety, another concern arose regarding *disaster mental health*. This refers to "specialized domain of training, research, and service provision applied to or with individuals, communities, and nations exposed to a

disaster" [1]. Knowing the seriousness of the matter, the company partially opened an area to provide free basic necessity goods as well as mental health clinics. In the end, the company was closed for nearly two months and not having a place to provide their services affected the company finances and customer interaction. However, by managing expectations, it helped build a positive and trusting relationship with clients, making them understand how fast access can be restored [2].

METHODOLOGY

To accomplish the objectives, two phases were implemented. The short term consisted on a quick turnaround providing temporary solutions to start providing the critical services. The long term focused on permanent solutions reconstructing the company working facilities, thus maximizing production. The methodology implemented by the company was the following:

Short term

- Notify clients as soon as possible
- Provide an estimate of downtime
- Identify viable solutions
- Verify costs and safety of those solutions
- Evaluate company groups that need immediate engineering support
- Identify and contact key employees to support the engineering operations
- Contact employees that can work remotely to support production
- Arrange traveling for key employees
- Identify working places in Puerto Rico
- Start providing engineering services

Long term

- Provide an estimate of downtime
- Evaluate building damages
- Start working on the repairs
- Verify network and internet capacity
- Contact the remaining employees
- Test the building capacity with employees
- Make the necessary adjustments
- Bring all the personal to the site, maximizing the provided services

RESULTS

Short Term Schedule

The first task consisted on getting communication with the clients; this was accomplished using satellite phones. Downtime estimates to start providing partially engineering services provided was approximately 3 weeks. The relief effort team identified 5 viable and safety solutions:

- Identify critical to business projects
- Contact key employees to support the critical to business projects
- Contact employees with laptops and availability to work remotely
- Arrange travel for key employees to United States facilities
- Assigned employees with laptops to work on the designated areas non-critical to business

All the solutions were implemented with the associated cost covered by an external source, including a signed repayment agreement. See Table 1 for time details.

Table 1
Short Term Completed Schedule

Short term				
Tasks	*Start date*	*End date*	% Complete	*Days*
Notify clients	9/23/2017	9/25/2017	100%	3
Provide estimate of downtime (operations)	9/26/2017	9/28/2017	100%	3
Identify solutions	9/29/2017	9/30/2017	100%	2
Verify costs and safety for the solutions	10/1/2017	10/4/2017	100%	4
Evaluate company groups in need of inmediate support	10/1/2017	10/4/2017	100%	4
Identify and contact key employees	10/5/2017	10/5/2017	100%	1
Contact employees that can work remotely	10/6/2017	10/6/2017	100%	1
Arrange traveling for key employees	10/5/2017	10/12/2017	100%	7
Identify working places in PR	10/6/2017	10/13/2017	100%	7
Start production (minimize downtime)	10/11/2017	10/13/2017	100%	3

Long Term Schedule

The first tasks consisted on evaluating the building damages and provide a downtime estimate. The facilities and construction contractors estimated a total downtime of 8 weeks. Repairs started with debris removal, along with the carpet removal and inspections of the fiber and optics

wiring. The Information Technology group had a hard time trying to connect the internet services; independent satellite dishes were the final solution to stabilize the fluctuations on the system once the majority of the employees returned to work. In the end, the entire system was stable and all employees, including those working off site, returned to the facilities and maximized the engineering services capability. See Table 2 for time details.

Table 2
Long Term Completed Schedule

Long term				
Tasks	*Start date*	*End date*	% Complete	*Days*
Provide an estimate of downtime (site)	9/23/2017	9/30/2017	100%	7
Evaluate building damage	9/25/2017	10/2/2017	100%	7
Start working on the repairs	10/3/2017	10/24/2017	100%	21
Verify network and internet capacity	10/17/2017	11/7/2017	100%	21
Contact the remaining employees	11/8/2017	11/9/2017	100%	2
Test the building capacity with employees	11/10/2017	11/13/2017	100%	3
Make the necessary adjustments	11/13/207	11/17/2017	100%	5
Bring all the personal to the site (maximize production)	11/20/2017	11/20/2017	100%	1

CONCLUSIONS

After a major disaster, service companies focus to follow their protocols for emergencies; however, other situations and issues can affect the downtimes. Infotech Aerospace Services experienced the consequences, but during the process was very proactive with a positive end. The company managed to provide partially engineering services in 3 weeks for the critical to business projects and supporting some of the non-critical remotely. Full services were reestablished 8 weeks later. The truth is, even with all the protocols and preparations beforehand, natural disasters are unpredictable, along with the damages associated to them. The key is to act quickly as possible and be reactive to schedule a plan.

Recommendation

For future considerations: “Compiling a list of buildings that an owner could buy or lease if an office or shop is completely destroyed and he or she favors moving to another location rather than rebuilding, or if a longer-term temporary site may be needed during a lengthy reconstruction process” [3].

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