

OVERVIEW OF THE IMPORTANCE OF PROJECT COMMUNICATIONS

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Visita Interiora Terrae Rectificando Invenies Occultum Lapidem

(Visit the interior of the Earth; by rectification thou shalt find the hidden stone)

CHAPTER 1

1. Customary Communication Definitions

1.1 Communication

Communication (from Latin *commūnicāre*, meaning "to share") is the activity of transferring information through the exchange of ideas, feelings, intentions, attitudes, expectations, perceptions or commands, as by speech, non-verbal gestures, writings, behavior and possibly by other means such as electromagnetic, chemical or physical phenomena and smell. It is the meaningful exchange of information between two or more participants (machines, organisms or their parts).

Communication requires a **sender**, a **message**, a **medium** and a **recipient**, although the receiver does not have to be present or aware of the sender's intent to communicate at the time of communication, thus communication can occur across vast distances in time and space. Communication requires that the communicating parties share an area of communicative commonality. The communication process is complete once the receiver understands the sender's message.

1.2 Communication Planning

Communication(s) planning is the art and science of reaching target audiences using marketing communication channels such as advertising, public relations, experiences etc. It is concerned with deciding **who to target**, with **what message**, and **how**.

In execution, the communication plan serves as a guide to the communication and sponsorship efforts throughout the duration of a project. It is a living and working document and is updated periodically as audience needs change. It **explains** how to convey the right message, from the right communicator, to the right audience, through the right channel, at the right time. It addresses the six basic elements of communications: communicator, message, communication channel, feedback mechanism, receiver/audience, and time frame.

To summarize, a communication plan includes:

- i. “Who” – the target audiences
- ii. “What” – the key messages that are trying to be passed on and understood
- iii. “When” – timing, this will define the appropriate time of the delivery of each message
- iv. “Why” – the aimed outcomes
- v. “How” – the way the communication will occur (mail, verbal, report, etc.)
- vi. “By whom” – the sender of the message (dictating who will convey the information and the procedure that he or/she is chosen)

CHAPTER 2

2. Project Communications Management

2.1 Introduction

Project communications Management includes all the processes that are needed to secure well – timed and appropriate planning, collection, creation, distribution, storage, retrieval, management, control, monitoring, and flow of information through the project. Project managers use large portions of their time communicating with members of the project team or other project stakeholders whether they are internal (inside the organization) or external to the organization. An effective communication creates links between diverse stakeholders who can have different organizational and cultural backgrounds, levels of expertise, perspectives and interests, which can have any kind of influence on the project execution or outcome.

The Project Communications Management processes are:

- 1) **Plan Communications Management:** The process of designing and developing a fitting approach and plan for project communications based on the needs and requirements of the stakeholders and other available organizational assets.
- 2) **Manage Communications:** The process of creating, collecting, distributing, storing, retrieving, and the disposition of the project information according to the communications management plan.
- 3) **Control Communications:** The process of monitoring and controlling communications throughout the entire duration of the project to secure that all the information needs of the project stakeholders are met.

All three of the foretold processes interact with each other.

The communication activities that take part in these processes may often have many potential dimensions – factors that need to be taken in mind including:

- Internal and external (customers, vendors, organizations, the public etc.)
- Formal (reports, briefings) and informal (emails, memos)
- Vertical (up and down the organization) and horizontal (with peers)
- Official (annual reports) and unofficial (personal communications)
- Written / Oral , verbal and nonverbal (body language)

Most of the communication skills are common for both general management and project management. Some of them are:

- Listening effectively
- Questioning and examining ideas and situations to ensure better coherence
- Educating in order to increase the team's knowledge so that they can be more effective
- Setting and managing expectations
- Persuading a person or a team or even an organization to perform an action
- Motivating
- Coaching in order to achieve desired outcomes
- Resolving conflicts
- Identifying the next steps

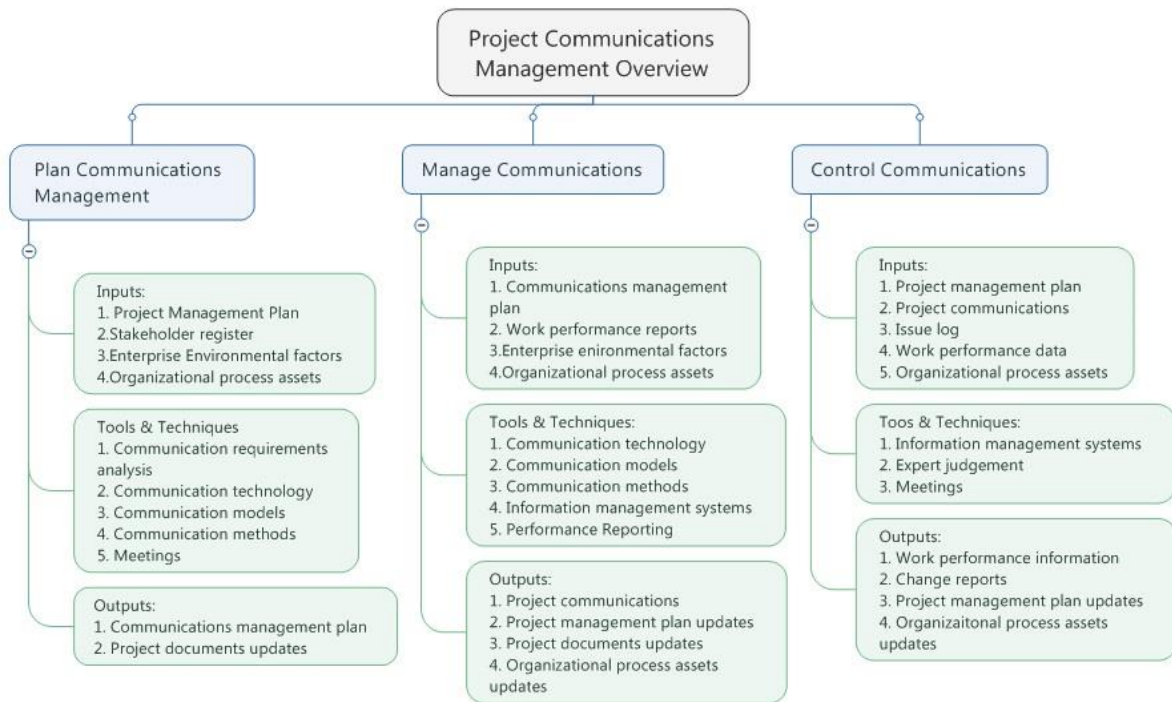


Figure 2.1. Overview of the Project Communications Management processes

2.2 Plan Communications Management

Plan Communications Management, as foretold, is the process of developing a fitting approach and plan for project communications based on the stakeholder's information needs, and available organizational assets. The gain of this particular process is that it identifies and documents the approach in order to communicate in the most effective and efficient way with stakeholders. In the following figure we can observe the inputs, tools, techniques, and outputs of this process.



Figure 2.2. Inputs, tools, techniques, outputs of Plan Communication Management Process

The planning of project communications is of paramount importance. Inefficient and ineffective communications planning can lead to a variety of problems including the delay in message deliveries, communication of information to the wrong audience, insufficient communication towards the stakeholders and misinterpretation of the message that is being communicated.

It is customary for the project communication planning to be performed very early. This allows appropriate resources like time and budget to be adjusted according to communication activities. Effective communication means that the information is provided in the right format, at the right time, to the right audience, and with the right impact. Efficient communication means providing only the information that is required.

All projects share the need to have an effective and efficient communication regarding project information, but, the information needs and methods of the distribution of this specific information vary from project to project. Also, the methods of storage, retrieval and ultimate disposition of the project information need to be documented during this process. Important considerations that may need to be kept in mind include:

- Who needs that information
- Who is authorized to access that information
- When will this information be needed
- Where the information should be stored
- In what format
- How can it be retrieved
- Language barriers, cultural barriers that need to be taken into consideration

All three processes of Project Communications Management are comprised by three types of “ingredients”; inputs, tools & techniques and outputs. Moving on, there will be a further analysis of those for the Plan Communications Process.

2.2.1. Plan Communications Management Inputs

The Plan Communications Management Inputs are:

- I. **Project Management Plan**
- II. **Stakeholder Register**
- III. **Enterprise Environmental Factors**
- IV. **Organizational Process Assets**

2.2.2. Plan Communications Management: Tools & Techniques

The Plan Communications Management Tools & Techniques are:

I. **Communication Requirements Analysis**

The analysis of the communication needs determines the information requirements of the project stakeholders. These needs are defined when a combination of the format of the information required with an analysis of the value of that information is used. The project manager must be careful and consider the number of possible communication paths as an indicator of the general complexity of the project's communication. The total number of possible communication channels is given by:

$$\text{channel number} = n \frac{n - 1}{2}$$

where n represents the number of the stakeholders. Key to the planning of the project's communications is to decide and restrict who will communicate with whom and who will receive that information.

II. **Communication Technology**

There are various methods that are used to transfer information from one project stakeholder to another.

III. Communication Models

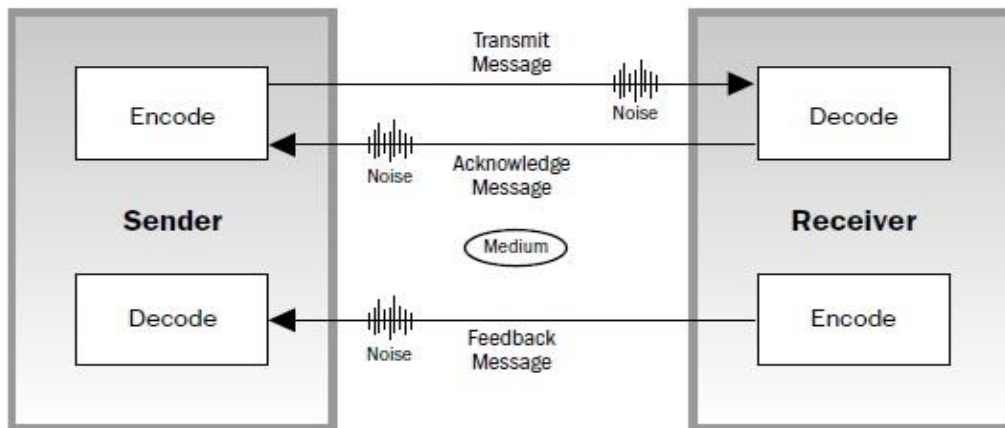


Figure 2.4: A basic communication model

IV. Communication Methods

There is a variety of methods that is being used to share information among the stakeholders. There are three general categories that these methods are classified in :

- a) **Interactive Communication**
- b) **Push communication** (letters, memos, reports, emails, faxes etc.)
- c) **Pull communication** (e-learning, webinars, lessons learned databases etc.)

V. Meetings

2.2.3 Plan Communications Outputs

I. Communications Management Plan

This plan is an ingredient of the project management plan that explains how will the project communications be planned, structured, monitored and controlled. This plan includes the subsequent information:

1. Stakeholder communication requirements
2. Information to be communicated (including language, format, content, level of complexity)
3. Reason for the distribution of that information
4. Time frame and frequency for the distribution of the desired information
5. Person responsible for communicating the information

II. Project Documents Updates

2.3 Manage Communications

Manage Communications can be considered as the process of creating, collecting, distributing, storing, retrieving, and the eventual disposition of project information according to the communications management plan. The gain of this process is that it enables an efficient and effective communications flow among project stakeholders.



Figure 2.5. The inputs, tools & techniques and outputs of the Manage Communications process

This particular process surpasses the distribution of relevant information and tries to make sure that the information being communicated to project stakeholders has been generated correctly, received and understood. It also provides freedom to stakeholders to make requests for more information, clarification and dialogue. Techniques and suggestions for effective communications

management include:

1. Sender-receiver models
2. Choice of media
3. Writing style
4. Meeting management techniques
5. Presentation techniques
6. Facilitation techniques
7. Listening techniques

2.3.1 Communication Management Inputs

The Communication Management Inputs are:

- I. Communications Management Plan
- II. Work Performance Reports
- III. Enterprise Environmental Factors
- IV. Organizational Process Assets

2.3.2. Communication Management Tools & Techniques

The Communication Management tools & techniques are:

- I. Communication Technology**
- II. Communication Models**
- III. Communication Methods**
- IV. Information Management Systems**
- V. Performance Reporting**

The act of assembling and distribute performance information, including status reports,

progress measurements, and forecasts is called performance reporting. In order for this to be successful a periodic amassing and analysis of baseline versus actual data is required. Performance reporting is needed to provide information at a fitting level according to the audience. The format of these reports can be simple to more elaborate and complex reports.

2.3.3 Manage Communications Outputs

Manage Communications Outputs are:

- I. **Project Communications**
- II. **Project Management Plan Updates**
- III. **Project Documents Updates**
- IV. **Organizational Process Assets Updates**

2.4 Control Communications

Control Communications is the process of monitoring and controlling any communication in the project to make sure that the information needs of project stakeholders are being fulfilled. The gain of this process is that it secures an optimal information flow between all communication participants, at any moment, any given time.

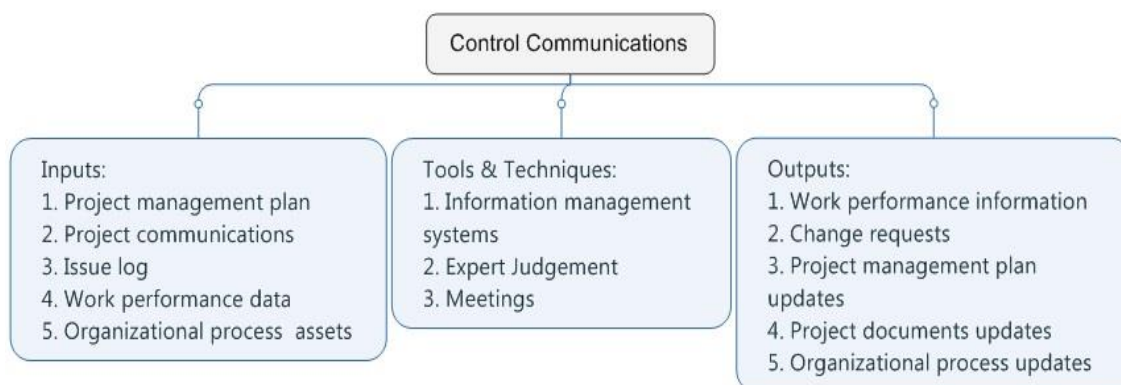


Figure 2.7. Control Communications Inputs, Tools & Techniques, Outputs

2.4.1 Control Communications Inputs

The Control Communications Inputs are:

- I. **Project Management Plan**
- II. **Project Communications**
- III. **Issue Log**

An issue log is used to document and observe the resolution of problems that arise. It may be used to ease communication and secure a common understanding of these problems. A well-kept log helps to monitor who is responsible for resolving specific problems. This information is important to the Control Communications process because it provides both an archive for what has happened already in the project and a platform for upcoming communications that have to be delivered.

- IV. **Work Performance Data**
- V. **Organizational Process Assets**

2.4.2. Control Communications Tools & Techniques

- I. **Information Management Systems**
- II. **Expert Judgment**
- III. **Meetings**

2.4.3. Control Communications Outputs

The Control Communications process has as a result the following outputs:

- I. **Work Performance Information**
- II. **Change Requests**

The Control Communications process has often as a result the requirement of adjustments or actions. It is safe to say, that change requests will be generated as an output. These requests are processed through the Perform Integrated Change Control process and may result in:

- Revised cost estimates, schedule dates etc.
- Adjustments to the project management plan and documents
- Recommendations of corrective actions that will bring the project back in line with the project management plan
- Recommendations of preventive actions that can reduce the possibility of having future negative performance

III. Project Management Plan Updates

IV. Project Documents Updates

V. Organizational Process Assets Updates

CHAPTER 3

3. Principles of Communications Planning

3.1. Appropriate way of Communication - Weighing the Circumstances

“Consciousness is reality”

As a project manager our job is to manage all messages that radiate off our project team. It is common in a variety of project types for misconceptions to arise. Hence, one of the most important project manager's roles is to make sure that all the concerned parties have accurate information about the project. If these complications aren't dealt with in a sensible time frame, they can cause both time and energy (literally and/or metaphorically speaking) drainage, as the project manager will have to turn around, re-evaluate everyone and get them back on the same page. In extreme circumstances if these misconceptions – rumors keep multiplying, they can even kill the entire project.

Usually the communications plan is created in the early stages of the project, during the planning phases and it is used to describe how the project intends to convey the **right messages**. to the **right people**, at the **right time**. Those messages can vary from simple to complex, and in some projects there is a person whose sole purpose is to manage those communications.

Creating a communications plan is depending inextricably on the receiver of the message. There are differences in the way people commune with subordinates and supervisors. So, two main categories can be thought of while creating a communications plan:

a) Communications Plan **By Item / Event** (Subordinates)

For example, creating a plan for a training event that will take place in the company, for all of the staff who is using an old ERP system.

Item / Event	Purpose	Audience	Date / Frequency	Who is responsible	Authority to release
Training employees in a new ERP system	To modernize the way employees work in the company	All staff using the older ERP system	20 days before the start of the training	Human Resources Junior Manager	Project Manager / Human Resources Manager

b) Communications Plan **By Person** (Stakeholders, Sponsors, Supervisors)

For example, creating a communications plan, that aims at the swift updating of the invitees for the annual shareholders' meeting.

Stakeholder	Title	Project Role	Item / Event	Special Instructions
George Georgiou	Venture Capitalist	Sponsor	Shareholders' Annual Meeting	Agenda

The ability to communicate effectively, especially nowadays, is regarded as one of the top three skills that a project manager must have. Laying the foundations for the message – preparing the people (even in their subconscious) for the message that needs to be passed on is of paramount importance.

3.2. Securing the Message

As I have mentioned before, the key to successful communication is getting the right information, to the right person, at the right time, using the right media, but also in a cost effective manner. Nowadays, the tendency is to try eliminating any paperwork, replacing it with dashboard reports. In management information systems, a dashboard is "an easy to read, often single page, real-time user interface, showing a graphical presentation of the current status (snapshot) and historical trends of an organization's key performance indicators to enable instantaneous and informed decisions to be made at a glance."¹ In real-world terms, "dashboard" is another name for "progress report" or "report." Often, the "dashboard" is displayed on a web page that is linked to a database which allows the report to be constantly updated. These reports have a significant advantage against traditional paperwork. They relieve the reader, of a hundred page read, in order to find fragments of useful information, thus freeing valuable time.

There are four basic types of communication:

- a) Oral Informal
- b) Oral Formal
- c) Written Informal
- d) Written Formal

Most project managers tend to communicate orally and in an informal manner. Though, in order to communicate effectively using the oral informal type of communication there **must** be trust in the organization. For a project management to flourish in a company effective communication, teamwork, cooperation and trust must be achieved. Nevertheless, in several occasions we are "handicapped", there are companies in which communication takes place only horizontally and vertically.

¹ Peter McFadden, CEO of Excel Dashboard Widgets "*What is Dashboard Reporting*". Retrieved: 2012-05-10

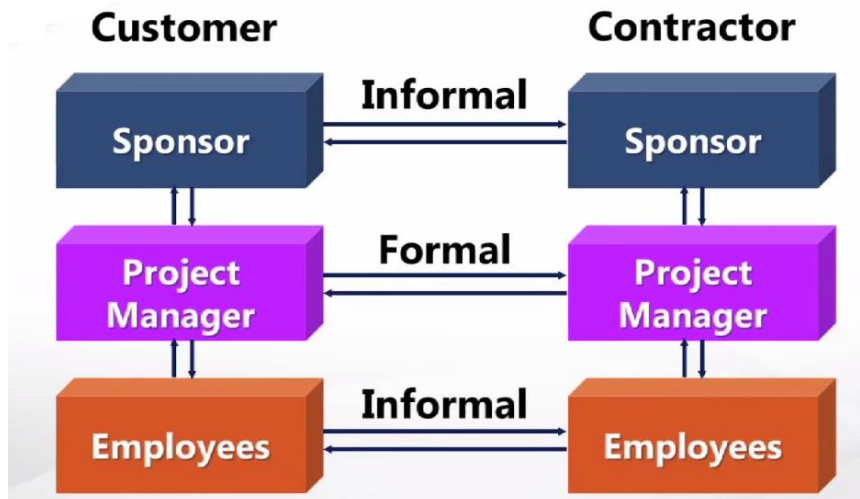


Fig 3.1: Formal or informal communication dependent on the situation

Of those three “pairs”, the one that has the highest possibility to inflict damage in the project is the employees to employees (worker to worker) and that happens because, several times, people dwelling in this level, make promises such as doing additional work on the project that are not included in the contract, leading to project scope changes that are not paid by the client. The wise route, for a project manager to tread on, is to ask his subordinates to commune in writing, so scope creeping is avoided in any circumstance.

The difference between a functional manager and a project manager lies in the fact that a functional manager communicates vertically and most of the time downwards (towards subordinates), whereas a project manager communicates laterally (peers, functional groups, customers, friends, social groups, associates, project office) and upwards (senior management, sponsors). While designing a communications plan, a project manager must never appear as the one who is talking down to people. He must consider others as peers and/or associates and not as subordinates, for the simple reason, that some of the people who form the project team could (or can) even be superiors to the project manager.

3.3. Communication barriers

The simplest type of communication occurs when a source sends a message to a receiver. However, realistically speaking such a simple type of communication is very rare if not impossible to take place. In the vast majority of times, the message is encoded (willfully, or not) by the source due to his/hers personality (personality screen/filter/barrier), and it is decoded, by the receiver according to his/hers personality-perception (perception screen/filter/barrier).

Typical personality screens/filters/barriers are:

- a) Sometimes people communicate according to the wrong frame of reference
- b) Communication skills (not adequate)
- c) Sometimes people communicate according to the wrong needs
- d) Sometimes people communicate according to the wrong interests
- e) Sometimes people communicate according to how they are feeling (emotion)
- f) Sometimes people communicate according to their position (status)
- g) Sometimes people communicate based upon assumptions (about the receiver)

Typical perception screens/filters/barriers include:

- a) Some people evaluate information in their own way (evaluative tendencies)
- b) Some people decode the message according to their status
- c) Some people have selective listening (hearing what they want to hear)

These barriers lessen if the region of experience of the source overlaps with the region of experience of the receiver (F.e. people that work together many years are more likely to be able to communicate easier, than two people that have just met).

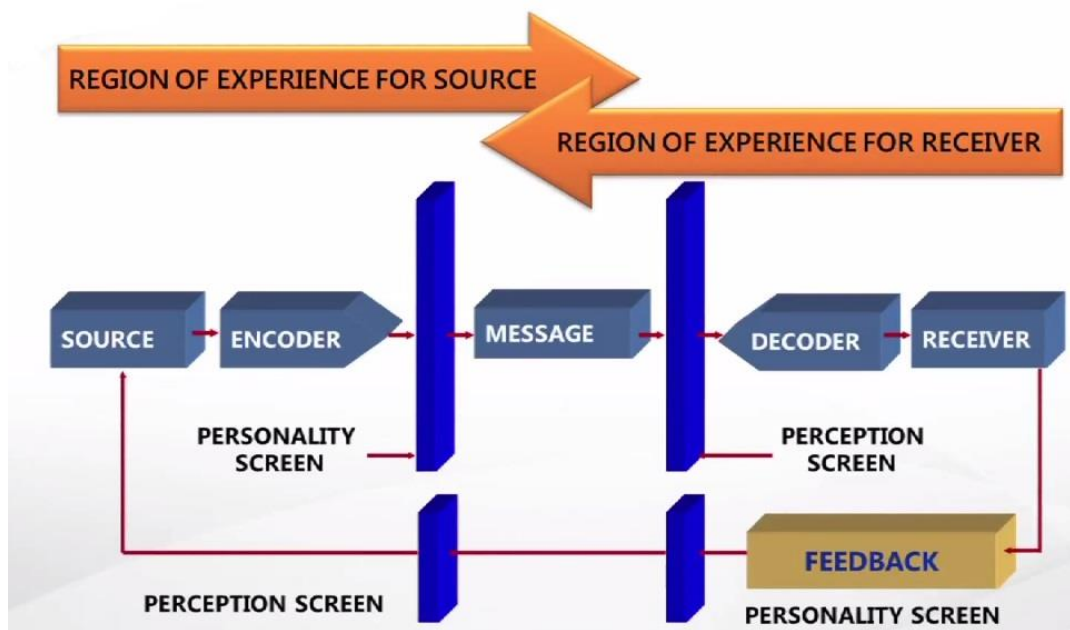


Fig 3.2: Communication process and barriers

In some cases there is another barrier which cannot be ignored. This barrier is culture. Culture is the way – the immaterial “law” a person is raised by. It affects almost every aspect of his life including the way he communicates. A multicultural project team is less likely to communicate efficiently than a team whose members are citizens of the same country or even the same continent (F.e. Europe). In such circumstances the key to ensure that every single one has understood the message, is to communicate written and formally.

Soliciting feedback, in any case, is of paramount importance. Unless soliciting feedback, people cannot be sure that the receiver of their message understood **exactly** what they wanted to pass on as a source.

In the age of technology and data, information flow is a strong playing hand. It is safe to deduce that effective communication is a weapon of power and authority. It is crucial for a project manager to be able to talk to anyone in the company who holds any piece of necessary information regarding any aspect of the project. However, there are times that ambiguity is generated from people inside the company itself, such as line managers who forbid project managers to talk to their subordinates.

3.4. The essential role of Communications

3.4.1 Criticality of Communication

Project managers globally, are in agreement that inefficient communications assist in project condemnation. The Forbes Insights 2010 Strategic Initiatives Study “Adapting Corporate Strategy to the Changing Economy,” found that nine out of ten CEOs believe that communications is critical to the success of their strategic initiatives, and about half of those who took that survey stress that communication is an integral piece of their strategic planning and execution procedures. Also, another survey conducted by PMI (Pulse) showed that 55% of the project managers concur that the efficient communications to all stakeholders, plays the most significant role in project management.

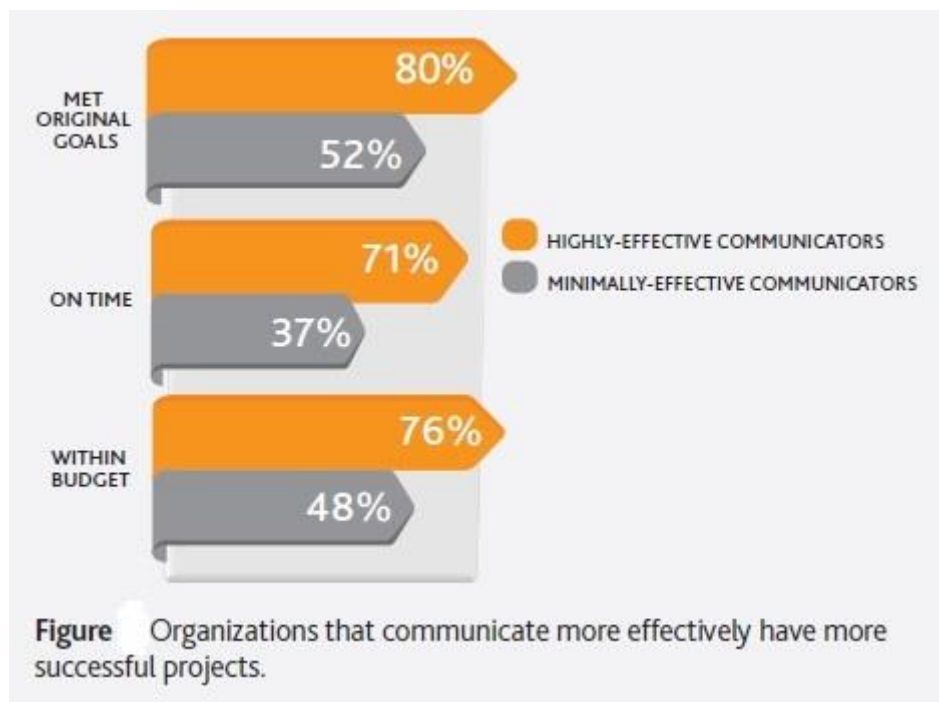


Fig 3.3: Organizations that communicate more effectively have more successful projects

A PricewaterhouseCoopers LLC (PwC) survey showed that effective communications is connected with a 17% rise in finishing project within budget. Also, a Towers Watson 2011-2012 “Change and Communication ROI Study Report” showed that enterprises that have efficient communication practices are 1.7 times more likely to perform better than their peers financialwise. It is obvious that organizations have deeply understood how effective communication can be critical regarding the achievement of strategic projects and general organizational success. Nevertheless, only 1 in 4 organizations are characterized by highly-effective communications according to PMI’s Pulse survey.

3.4.2. Risks of Ineffective Communications

Not all projects are meant to succeed, two in five projects wander away from their original goals and one of those two is deemed unsuccessful due to ineffective communications. This is roughly \$75 million risked at every \$1 billion invested.

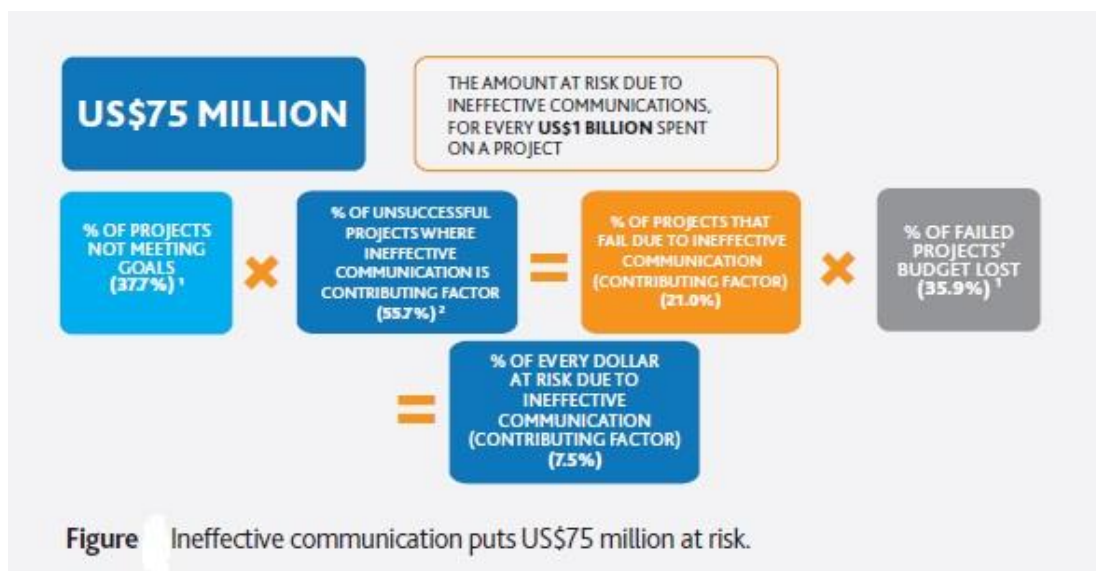


Fig 3.4: Ineffective communication puts 75M USD at risk

According to the Pulse survey, an ineffectively designed network of communication, within the organization, can lead to fewer flourishing projects, and as a result a continuous decline in the success rates of the whole organization.

3.4.3. Communications Chasm

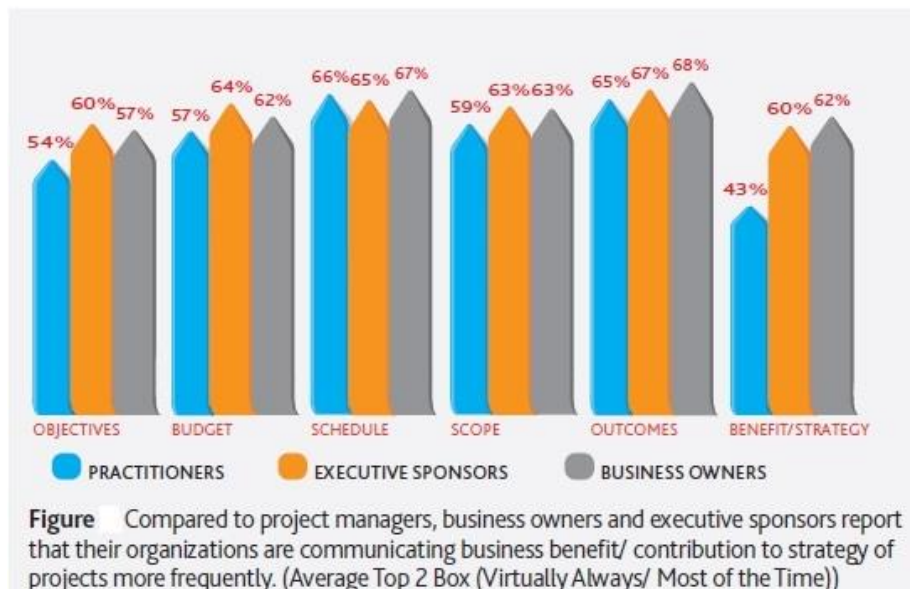
3.4.3.1. Communication Gaps

PMI research has shown that the biggest challenges for organizations regarding communications are:

- a) A gap in understanding the business benefits
- b) Challenges related with the language used to deliver information regarding the project
(which is often blur due to project management terminology)

We must understand that there is a difference between acknowledging effective communication benefits, and actually reach a point that we can say that we have totally embraced and applied an effective communications plan. Understanding does not mean success.

Studies conducted by the Project Management Institute bring up some controversial results as the research has shown that project managers tend not to agree with the stance of business owners and executives on business benefits and alignment to strategy communications.



When the chasm between the developers of strategy and those who execute is properly bridged projects appear to be more successful.

It is safe to draw the conclusion that a frequent communication, which is to the point and expressed in a way that everything, is easily comprehended, can lead to strategy benefits and thus successful projects.

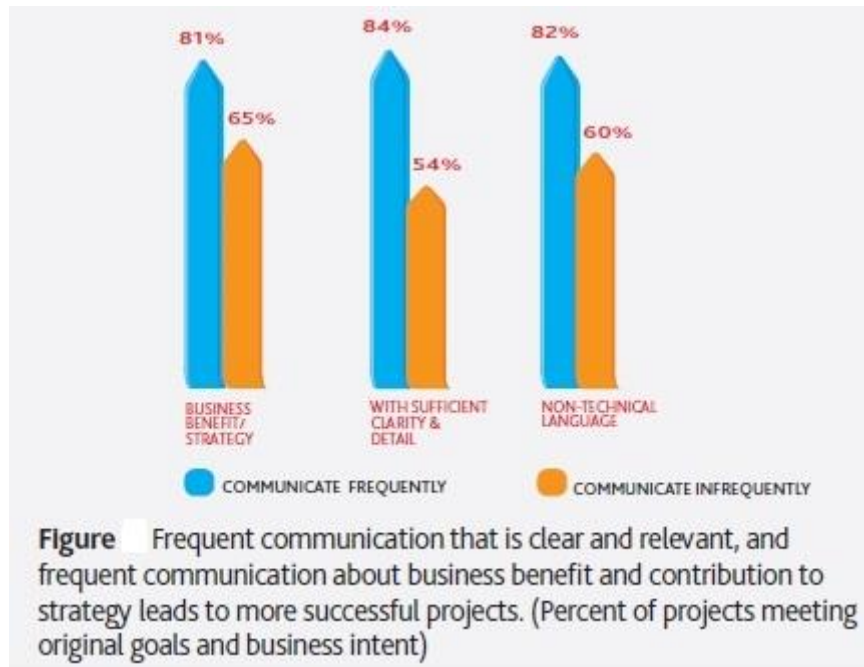


Fig 3.6: Frequent communication that is clear and relevant, and frequent communication about business benefit and contribution to strategy leads to more successful projects

3.4.3.2. Language as a Communications barrier

Fruitful communication demands clarity and specification in all the fitting zones within the organization. A big gap tears apart communications when the project-specific, technical language cannot be completely comprehended by everyone. Research has shown that projects that are well communed, with detail, clarity and in a language of the audience, are destined to meet their original goals. It is obvious that the project success is linked with the transfer of the proper information to the right stakeholders while using clear and project-related language that is easily interpreted by the audience.

3.5. Improving Communications results in Maximizing Success and Minimizing Risk

Based on the prior analysis, the conclusion that more efficient communication leads to success can be drawn. Research results suggest that the opposite is also valid, meaning that high performing companies are most likely to have people that communicate efficiently as their employees. Also, the results indicate that poor performing companies can gain from improving their communications plans and practices in general, as those improvements will make them able to risk fewer funds and make more successful projects a reality.

Finally, high-performing organizations:

- a) Are better in communicating the main project ideas, the goals, strategies, objectives, schedule, results, and finances.
- b) Are distinctively better at being punctual in a specific timeframe, providing sufficient and comprehensible, information picking appropriate settings or media for the delivery
- c) Use formal communications plans more often and more effectively than the poor-performing. These high performers create communications plans 2 times more often than the most of other firms and these plans 3 times more effective than of the counterparts.

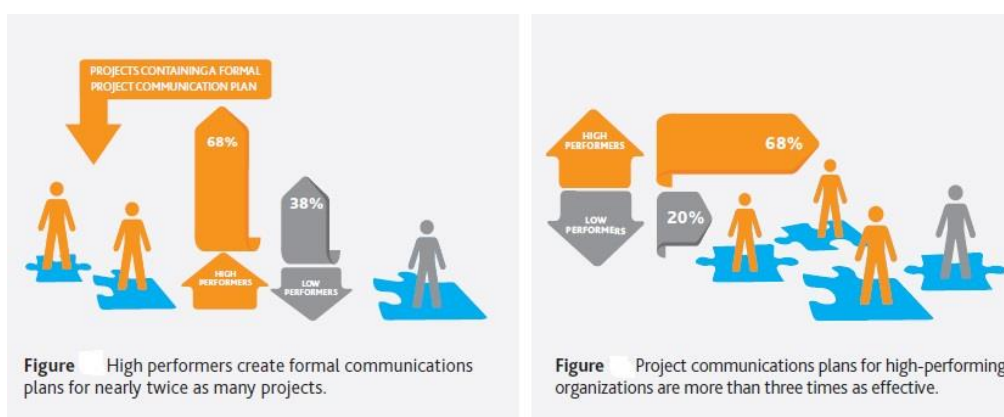


Fig 3.7: High performers create formal communications plans for nearly twice as many projects // Project communications plans for high – performing organizations are more than three times as effective.

[Figures 3.3 – 3.7 from “PMI – Pulse of the profession – Communications”]

CHAPTER 4

4. Importance of Reporting

4.1. Introduction

A report is an informational work made with the specific intention of relaying information or recounting certain events in a widely presentable form. Reports are often conveyed in writing, speech, television, or film.

Reports fill a vast array of critical needs for many of society's important organizations. Reports are used for keeping track of information, which may be used to make decisions. Written reports are documents which present focused, salient content, generally to a specific audience. Reports are used in government, business, education, science, and other fields, are often to display the result of an experiment, investigation, or inquiry.

Reports use features such as graphics, images, voice, or specialized vocabulary in order to persuade that specific audience to undertake an action. One of the most common formats for presenting reports is IMRAD: Introduction, Methods, Results and Discussion. This structure is standard for the genre because it mirrors the traditional publication of scientific research and summons the ethos and credibility of that discipline. Reports are not required to follow this pattern, and may use alternative patterns like the problem-solution format. Additional elements often used to persuade readers include: headings to indicate topics, to more complex formats including charts, tables, figures, pictures, tables of contents, abstracts, and nouns summaries, appendices, footnotes, hyperlinks, and references.

A business report is a document that conveys specific information about your business to other individuals. Sometimes those other individuals are employees and sometime they are investors.

The information it conveys may vary depending on audience, but the foundation of the communication centers around communication.

4.2. Report Categories

There are many categories that reports might fall into. Here are 12 of them:

1. **Incident reporting:** Examining an incident such as an accident or an error, in order to record what happened or what went wrong. This category aims in clarifying the causes of the accident or the error, explaining effects and suggesting solutions.
2. **Periodic:** The Periodic report provides information at regular intervals (weekly, monthly, annually etc.) in order to keep track of work and plans for the future.
3. **Investigative:** This report class provides the results of research and testing procedures.
4. **Progress:** Progress reports provide valuable details on how a project is moving on, what needs to be done, and the manner in which the actual progress and the planned one are connected.
5. **Trip or Call:** The trip or call report share the results of any activities or contacts that take place outside the company's immediate environment.
6. **Major:** Finally, the major report, is a kind of report that explores a serious issue of long – term concern to an organization
7. **Memo:** Is a report for a matter that requires immediate attention.

8. **Form report:** A report of happenings during a duty, shift, to hand over to the next person responsible for this duty, shift, etc.

9. **Event report:** An aftermath, of a specific event, f.e. an exhibition, a conference, etc.

10. **Proposal:** A report the goal of which is an implementation of a specific proposal to the company's activities or processes.

11. **Concept paper:** A preliminary exploration of a subject before embarking on a detailed study or proposal.

12. **Staff paper:** This kind of report is actually a detailed proposal which requires research on a serious matter – such as starting a new branch, relocation, changes in pay scale, specific measures to be taken in consideration before starting a task, etc. This kind of reports is usually much longer than the others.

Some examples of reports are:

- Annual reports
- Auditor's reports
- Bound reports
- Budget reports
- Credit reports
- Expense report
- Inspection reports

4.3. Writing a report

Once one understands what type of report he or she is writing they can proceed in the prewriting of this report. There are many things that must be taken in consideration before proceeding in relaying the message that needs to be passed on in the report. Firstly, one must analyze the purpose of this report, meaning the goal that the specific report needs to fulfill or accomplish. Secondly, we might ask ourselves what is the measurable outcome for this goal. Next, an analysis of the readers is a must do. We have to clarify the reason the readers need the report for, the use of the report for them, and what is their knowledge or what do they need to know about the topic that is being discussed about. Following, one must consider the bigger picture. We have to answer the question why is this report important to our organization, also, we must understand who else might encounter this report, and what are the potential ripple effects that might be caused by this. Moreover, further research must be conducted in order to obtain accurate facts. We can check databases and/or files and consult people find reliable web resources. Furthermore, one should analyze the data he or she obtained from the fore mentioned research, in order to make complete sense of it (the person can run the numbers, examine the evidence and create connections). The final part of the prewriting process, is the process of outlining the report. Templates from past reports can be used, and models can be followed. One must think of proper ways of logically ordering the report.

Once the sufficient prewriting has been done, we are ready to continue on the draft. Using a good model or a solid template, we can proceed by drafting various parts of the report, meaning that the person, who is compiling a report, must not start from the opening. The draft of the report is comprised by three parts, the opening, the middle and the closing. In the opening part, a perspective must be put on the report; The title and the subject line are a way to do so, in order to specify the type and the topic of the report. After that, one must introduce the purpose of this report by providing background and previewing the report's coverage. A way to make things easier for the reader, a summary of the report's main points, conclusions and recommendations

should be presented.

The Good Cousins Group

Date: 05/08/2015
To: Mr. Anderson, General Manager

From: Feanor Quas, Project Manager

Subject: Progress Report for the “Lux” educational seminar August 02, 2015

This report details the most recent progress monitoring regarding the “Lux” educational seminar. You will find (A) description of the progress, (B) conclusion about where we stand, (C) recommendations regarding optimizations in the future.

Figure 4.1: An example of the opening part of the report.

In the middle part of the report, the supply and explanation that the readers need is of great significance. The key here is to organize our data using one or more logical patterns. A correct order must be chosen, so that the information has a continuation making it clear and understandable to the readers. Factors that can be used as mediums to achieve this correct order are:

1. Time
2. Space location
3. Order of importance
4. Categories
5. Alphabetical Order

6. Cause - Effect
7. Compare – Contrast
8. Hypothesis testing

A. The Incident: Tangled Air Hose

During a routine inspection of work on Thursday, March 20, at 10:45 a.m., I found undercoater Bob Irving struggling to breathe underneath the truck he was working on. While spraying liquid-rubber sealant on the undercarriage, he had rolled his dolly over his air hose, cutting off the air supply. I immediately pulled him out, untangled him, and took the following steps:

1. I checked Bob for injuries and determined that he was unharmed.
2. I asked him what had happened. He explained that he couldn't free himself because (a) he became tangled in the spray-gun cords, (b) his air hose was locked into his oxygen suit, and (c) he was lying down in a cramped space.
3. I discussed the incident with the undercoating crew. They confirmed that similar problems had developed before, but they hadn't filed reports because no one had actually been injured.
4. I inspected thoroughly all undercoating equipment.
5. As a short-term solution, I bought airhorn alarms to attach to the undercoaters' dollies.

Figure 4.2: In this example we can see the use of chronological order to present information.

B. Conclusions: Probable Causes

Presently, undercoaters maneuver under trucks and spray liquid-rubber sealant on the undercarriage while lying on their backs. Maintainer provides oxygen suits to protect their skin and oxygen supply from this sealant that (a) produces noxious fumes, (b) causes choking if swallowed, and (c) injures skin upon contact. However, this incident shows that our safeguards are inadequate:

- Ten-year-old oxygen-suit meters and air tubes frequently malfunction. Masks and hoses are beginning to crack.
- The practice of lying on a dolly while spraying can cause undercoaters to get tangled in cords and hoses or roll over their air hoses.
- Spraying from a prone position allows liquid rubber to drip onto undercoaters' masks. This dripping obscures vision and makes it more likely that workers will get entangled and more difficult for them to get untangled.

Figure 4.3: In this example the writer uses the Cause – Effect technique to logically order the information he wishes to pass on.

Despite the freedom regarding the choice of the organizational pattern for the report, the writer must make sure to make the information easily accessible and comprehensible by using headings, lists, tables, graphics or charts.

For the most of reports, the writer puts the key points on the opening summary but they should be furtherly and deeplier analyzed in the closing part of the report. If the report is solely informative, the summary of the main points should be enough. In cases that require further analysis the writer should also add his/hers conclusions about the topic. When the report is persuasive, recommendations should be added. The writer must also remember to focus in a polite manner on asking feedback, a follow – up meeting etc.

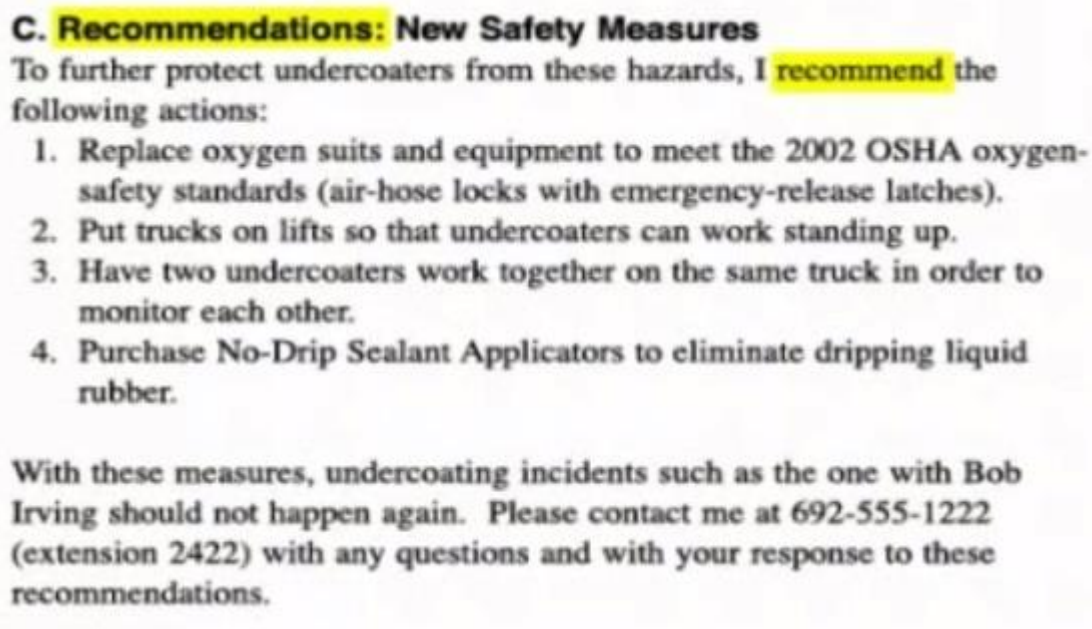


Figure 4.4: In this example of a closing part of a report, we can observe the use of recommendations and asks for feedback.

After the draft is completed it is time for the writer to ask himself what else needs to be done in order to make the idea stronger, meaning, to revise the draft (add, cut, re – express). This can be done by asking the following simple questions.

Regarding the strength of the ideas:

- Is the information complete and strong?

- Is the way of thinking proper and solid?
- Do the conclusions and recommendations arise logically from the information?

Regarding the Organization of the report:

- Does the order make complete sense? (An inconsistent and tangled flow can have negative results)

Regarding the “Voice”:

- Is the tone objective and professional, but also energetic? (A “voice” that is subjective unprofessional or flat can also be negative to the desired outcome).

Asking help from a co – worker in order to revise the draft is always a good practice. Another person’s perspective can help in spotting problems or issues.

Finally, after revising the initial draft, it is time to refine the content of the report. The writer can optimize the quality of the report by examining the word choice, sentence style, grammar, punctuation and design. A correct terminology that is appropriate to the audience must be chosen and plain English should be used when possible. Also, unfamiliar technical terms that might be included in the report must be made clear and understood to the reader. In addition, smooth sentences are also a key factor that helps the better comprehension of the contents of the report. Reading your own report enables you to locate and fix confusing and rambling sentences. The use of tightened sentences is recommended, when possible. Moreover, a proper vocabulary, spelling and grammar is a way to strengthen the report and give it a more professional aura (correct use of words, grammar and punctuation). Finally, a reader friendly type of design is appropriate. A report must have a lot of white spaces, proper headings and graphics.

4.4 Integrated Reporting

4.4.1. Introduction

The Integrated Reporting is a new standard for corporate communication. It is a process that results in communication, most visibly a periodic “integrated report”, about value creation over time. An integrated report is a concise communication about how an organization’s **strategy, governance, performance and prospects lead to the creation of value over the short, medium and long term**. It means the integrated representation of a company’s performance in terms of both financial and other value relevant information. Integrated Reporting provides greater context for performance data, clarifies how value relevant information fits into operations or a business, and may help embed long-termism into company decision making.

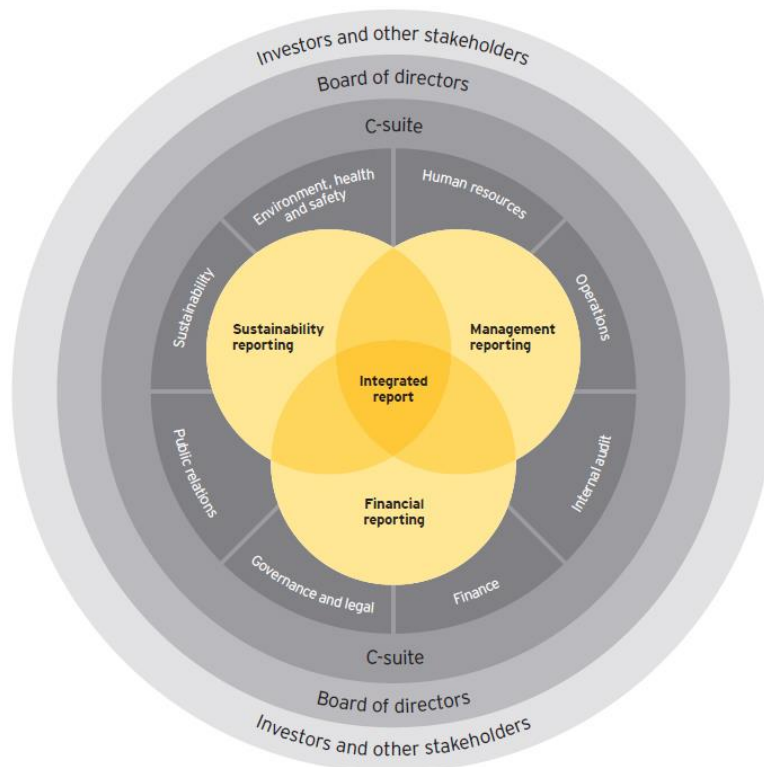


Figure 4.5: The structure of the reporting inside a company – Elements of Integration Reporting.

4.4.2. The Call for Integrated Reporting

Capitalism relies on the efficient allocation of capital to deliver returns to investors over the short, medium and long term. It is the job of companies to manage the financial capital that investors provide and also to create and preserve the value generated from other forms of non-financial capital such as people, trademarks/copyrights and natural resources. The western model of capitalism has been questioned following the onset of the banking crisis in 2007 because of its apparent dependence on short term financial factors over other forms of capital and longer time scales. Corporate reporting no longer reflects the needs of the 21st century, resilient capitalism needs financial stability and sustainability in order to succeed – and Integrated Reporting is intended to underpin both of these problems through communicating to providers of financial capital the information that they need. At the heart of Integrated Reporting is the growing realization that a wide range of factors determine the value of an organization – some of these are financial or tangible in nature and are easy to account for in financial statements (e.g. property, cash), while many such as intellectual capital, competition and energy security are not. Integrated Reporting reflects the broad and longer-term consequences of the decisions organizations make, based on a wide range of factors, in order to create and sustain value. Integrated Reporting enables an organization to communicate in a clear, articulate way how it is drawing on all the resources and relationships it utilizes to create and preserve value in the short, medium and long term, helping investors to manage risks and allocate resources most efficiently.

4.4.3. Impact and benefits of Integrated Reporting and Integrated Reporting as a Communications tool

According to Black Sun's² research report 'realizing the benefits: The impact of Integrated Reporting' (2014), respondents to the survey and subsequent interviews were generally extremely positive about the impact that their progression towards integrated thinking and reporting is having. In nearly all cases, those respondents representing organizations that have issued at least one integrated report have experienced more benefits from Integration Report than respondents from organizations working towards their first report.

Of all respondents 91% have seen an impact on external engagement.

- 56% of those that have published an integrated report have seen moderate to significant impact on external engagement
- 19% of those working toward their first integrated report have seen moderate to significant impact on external engagement

Of all respondents 96% have seen an impact in internal engagement.

- 90% of those that have issued an integrated report have seen moderate to significant impact on internal engagement
- 44% of those working toward their first integrated report have seen moderate to significant impact on internal engagement

² Black Sun is working closely with the International Integration Report Council and reporters to improve corporate reporting. They have worked in association with the IIRC to develop this research report, 'Realizing the benefits: The impact of Integrated Reporting', which seeks to understand the business case for Integrated Reporting and the lessons learned from the experiences of IIRC Pilot Programme businesses.

Relations with External Stakeholders:

It has been found that strengthening relations with external stakeholders is one of the greatest motivations to begin the move toward Integrated Reporting.

- 100% of respondents who have issued an integrated report see a change in relations with external stakeholders

Organizations were most likely to see an impact with 'society at large.' Of organizations that have issued an integrated report,

- 84% reported a change in relations with society.
- 56% reported a positive benefit in relations with institutional investors
- 52% reported a positive benefit in relations with analysts

Improvements in Decision Making:

Significant evidence of strategic benefits has been found in the research. A large majority of all survey respondents, 79%, reported improvements in decision making. Nearly all, 97%, anticipated future benefits in this area. Improvements in decision making were largely attributed to changes in management information, particularly information provided to boards.

- 75% of all respondents said that performance information used to manage their organization had changed during the process of Integrated Reporting
- 79% of organizations that have issued an integrated report believe that their board benefits through a better understanding of value creation

A number of organizations noted that the most important benefit they experienced was a change in conversations between the board and management.

Foundational Changes Lead to Other Benefits:

Some of the most common changes reported, and ones seen at early stages in the move toward Integrated Reporting were changes in collaboration within organizations and in data quality. For some organizations, impact in internal engagement is described as an increase in mutual understanding and respect. Other organizations reported an increase, and broadening, of internal skills. Most organizations reported that improved data quality was a current benefit of their Integrated Reporting journey, with those that have already issued an integrated report and public sector entities the most likely to have experienced benefits in this area.

84% of all respondents see a current benefit regarding data quality. Nearly all organizations interviewed said that they had either significantly changed what they measured or had plans to do so in the future.

As organizations work together differently, and use new information to assess their performance, they also experience breakthroughs in how they think about value creation.

92% of all respondents reported an improved understanding of value creation as a current benefit.

Overall, listed companies were significantly more likely to report that developing a better understanding of value creation over time was a motivation – and benefit – of Integrated Reporting.

- 95% agreed that this was a motivation for their Integrated Reporting (compared with 55% of public sector entities)
- 97% agreed that this was a benefit that they had experienced from their Integrated Reporting pathway (compared with 73% of public sector entities)



Figure 4.6: Key findings of the research



Figure 4.7: Key findings of the research

4.6. Accident and Incident Reporting

4.6.1. Introduction

An accident or incident report documents an injury, accident, work stoppage, equipment, failure, worker illness, or personal problem.

In order to deeply comprehend the processes, meaning and importance that have to do with Accident and Hazard Reporting, we must define specific words that will appear often in the analysis of this reporting standard.

- An **incident** is the general name for accidents (that may or may not result in injury), near misses and hazards.

- A **near miss** is a dangerous incident that could have led to serious injury or significant damage.

- A **hazard** is anything with the potential to cause damage to people, the environment, property, plant or equipment.

Serious injuries and incidents are those that involve:

- Deaths and life-threatening injuries (such as amputations)
- Medical treatment as an inpatient in hospital
- Incidents where people are in the immediate vicinity of a risk

4.6.2. The importance of Accident and Incident reporting

Many times people underestimate danger. Working in a supposedly safe environment renders people immune to fear and many times this leads to the loss of focus on things that actually matter regarding the safety in the workspace. Routine and constant repetition might also be reasons that accidents might occur both in safer and in perilous work spaces. It is understood that the safety and occupational hazards of a person that works in an office are different from a person working in an oil refinery, but the mentality should be the same. Caution, good education and training, following the rules and regulations (f.e. wearing a helmet), and not rushing into things are some actions a person can do in order to be safer. Unfortunately, most of the times the companies themselves are ignoring or not paying the needed attention at least, regarding matters of health and safety. It is a duty of all the people who comprise the human resources of a company, to work together with the Health and Safety department or the person in charge for these matters.

There are many ways in which people can make an unsafe situation known to the company and one another, such as telling each other, posting a warning at a billboard, but the important thing is prevention, so that an incident, an accident or even a hazard doesn't occur. Prevention is a tricky thing to accomplish, and leaving things in chance does not help prevention at all. So, despite the many ways that people can make a danger known, there is a formal one that must be taken seriously by all the people. This formal way is the use of the Danger reporting forms, or the Accident and Hazard ones. On the first case, one can identify a possible danger or risk in the work place and report it, so that the company can proceed in correcting and rectifying the situation. In the case there is a real danger and the company shows no interest in taking action, the employee can report the company's negligence to the appropriate authorities. In either way, the company will eventually make everything safe again. On the second case, reporting accidents and/or hazards using the reporting forms, is a very powerful tool for the company to keep a historic archive of incidents, near misses and hazards at the workspace. The data and information that is accumulated from those reports can lead into recognizing an unknown danger

or risk in order to rectify the existing one, and finally preventing those situations to reoccur by taking the proper preventative measures.

In conclusion, one can understand that the best way to communicate information and pass on data regarding possible dangers, incidents, near misses and/or hazards, is the reporting forms. This data is recorded and cannot be bypassed or lost, thus making the company's environment a safer place to working at.

4.6.3. Writing an Accident and Incident report

An incident/accident/hazard report shall be written when:

- Someone was injured at work
- Machinery broke
- Machinery malfunctioned
- Work stopped for a significant period of time
- An employee complained about work conditions (f.e. harassment)
- A fight occurred in a workplace
- An employee showed up intoxicated
- An unknown danger has been identified
- An employee shows symptoms of contamination, poisoning (f.e. radiation poisoning)
- And many more

Accident and incident reports can be used in insurance claims, workers' compensations, awards and even lawsuits

In most occasions, there premade forms that a person can report his situation. In other cases,

when the company has not prepared an Accident or Incident report form there is specific information that is significant to be put on paper when writing an Accident and Incident report such as, what happened, why it has happened and what did the business do or will do about it. To be more specific, there is some general information that should be on every Accident and Incident report. The date of the event, the exact location where the Accident or incident happened, full names of the people involved and the names of witnesses might be on the report in any situation. Also, in order to dig to the deeper reasons of any Accident or Incident, there must be information in chronological order of the events that led eventually in the accident or the incident itself, as the environmental conditions (f.e. rain, slippery floor, poor lighting, hazardous material, etc.), and the task that was being performed (f.e. handling dangerous equipment, restoring a roof, etc.) Next, the final accident or incident must be described in detail, as well as the injuries that the person endured, or the parts of equipment that were damaged. The actions of the employee after the unfortunate situation must be described (f.e. pulling an injured finger out of a machine). In case there is an injury, the treatment or course of action taken must be described. The business must also document facts and events from their side, in order to be shielded from unrighteous claims (f.e. substance problems of a worker that led to his injury). Finally, during the composition of an Accident and Incident report a neutral and specific language must be used. In some situations a report of this kind can be used in court or other legal proceedings.

To sum up, Accident and Incident Reporting is an important tool of communicating possible dangers, risks, accidents, incidents or hazards that might have occurred at work, as well as the reasons behind the unfortunate events. Using this powerful tool the quality of safety and health becomes better at the workspace, as the company and the people responsible for the health and safety, work in parallel to prevent unwanted situations.

4.7. Reporting and Project Management

4.7.1. Introduction

The project management reports are essentially the information and data that is collected from all the different projects that are managed. In most occasions the Project Manager is managing multiple projects, and even if he is managing a sole project there are smaller projects that compile it. The flow of information in the correct way is very important regarding the progress of the project as well as the monitoring of time, scope and budget within this endeavor. As people say the devil can be in the details, so paying attention to these details can turn a failed project to a successful one. So it is safe to say that proper reporting is of paramount importance to a Project Manager due to the amount and quality of information that it communicates to him/her.

4.7.2. Types of Project Management Reports

Timesheet Report:

The timesheet is a reflection of the projects that a Project Manager has undertaken. This kind of report is one that gives information about time reported by the resources on the project. This reported time can be compared at any times with the time that is planned in the initial design of the project, allocated and approved for the budget. The timesheet report should be shared by the Project Manager with the rest of the team, especially to members that are reporting time. This way of reporting can be conducted in a variety of a timeframe, timesheet reports can be real time, weekly, monthly etc. (a real – time report gives accuracy and precision). Through this report the Project Manager can monitor the possible over allocation of resources in projects as well as if those resources report time correctly.

My Company Inc.

Report Type: Weekly Timesheet
 Category: ALL
 Date Range: 19/06/2006 to 25/06/2006
 User: James Brown

Category	Mon 19/06/2006	Tue 20/06/2006	Wed 21/06/2006	Thu 22/06/2006	Fri 23/06/2006	Sat 24/06/2006	Sun 25/06/2006	Total
Energex Inc								
General	0.00	0.68	0.00	0.00	0.00	0.00	0.00	0.68
Systems	0.00	0.00	2.48	0.00	0.00	0.00	0.00	2.48
File Server	0.00	0.00	3.43	0.00	3.39	0.00	0.00	6.82
Meetings	1.68	3.32	1.03	0.00	0.17	0.00	0.00	6.20
Web Server	0.00	2.15	0.75	0.00	0.00	0.00	0.00	2.90
IT Recruitment								
New Recruitment Drive								
Announcement Page	0.00	0.00	0.20	6.03	3.71	0.00	0.00	9.94
Web site makeover								
Color Scheme	2.94	1.85	0.00	0.00	0.00	0.00	0.00	4.79
Design Layout	0.00	0.00	0.00	1.27	0.00	0.00	0.00	1.27
Requirements	3.18	0.00	0.00	0.00	0.00	0.00	0.00	3.18
Personal	0.00	0.41	0.61	0.90	0.00	0.00	0.00	1.92
Total:	7.80	8.41	8.49	8.21	7.27	0.00	0.00	40.19

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Figure 4.8: An example of a Timesheet Report

Expense Report:

Expenses should not be reported at the end of a project. Many projects are killed towards the end of them simply because the expenses report turn out to be different than expected thus leading a possibly successful project to a failed one.

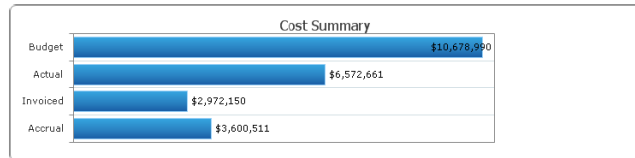
Expenses can be various things such as:

1. Contractor Time (f.e. excavators)
2. Travel expenses (f.e. the Project Manager has to meet with the board of a client who's offices are in a different city or country)
3. Meals / Entertainment (f.e. project team stationed in another city)
4. Supplies (f.e. stationery supplies)
5. Equipment (f.e. laptops, servers)
6. Rent / Facilities (f.e. leasing office space)
7. Etc.

The real time tracking of these expenses is the most correct practice so they won't hit the project at the end. The Project Manager but also anyone who approves any expense reports and the project team should have access to this kind of reports.

Project Summary Report

Total Budget: \$10,678,990 Invoiced: \$2,972,150 Budget Hours: 14,792 Planned Start: 2013-Feb-01
 Actuals to Date: \$6,572,661 Accrual: \$3,600,511 Actual Hours: 12,703 Planned Finish: 2014-May-19



WBS	Task Name	Cost Code	Budget	Actual	Budget Hours	Actual Hours	Invoiced	Accrual	% Compl
1	Project Development	60	\$2,359,550	\$2,676,883	8,665	9,705	\$2,170,500	\$706,383	95.93 %
1.1	Property Lease/Purchase	110	\$518,150	\$532,565	480	518	\$441,315	\$91,250	100.00 %
1.1.1	Legal Fees	61005	\$52,050	\$84,700	112	113	\$20,950	\$63,750	100.00 %
1.1.2	Legal Survey	61010	\$25,950	\$29,400	48	71	\$10,650	\$18,750	100.00 %
1.1.3	Permit Fees	61015	\$5,600	\$5,750	0	0	\$5,750	\$0	100.00 %
1.1.4	Property Purchase/Lease	14005	\$425,800	\$403,965	320	334	\$403,965	\$0	100.00 %
1.1.5	Permit for access road landscaping	60020	\$8,750	\$8,750	0	0	\$0	\$8,750	100.00 %
1.2	Preliminary/Detailled Engineering	120	\$935,400	\$1,023,265	5,600	6,210	\$959,335	\$63,930	86.12 %
1.2.1	Civil Engineering - Design to 2D Plan	62010	\$204,650	\$162,900	1,130	890	\$162,900	\$0	65.00 %
1.2.2	Electrical Engineering - Power Supply	62015	\$160,400	\$180,600	920	1,080	\$155,400	\$25,200	100.00 %
1.2.3	Geotechnical Engineering	62020	\$204,000	\$237,150	1,360	1,581	\$210,750	\$26,400	100.00 %
1.2.4	Mechanical (&Process) Engineering	62025	\$202,700	\$248,230	1,170	1,446	\$241,180	\$7,050	100.00 %

West Lake Extension Summary Report Page 1 of 3

Figure 4.9: An example of an Expenses Report

Resource Workload Report:

The resource workload report is similar to the timesheet report and it is equally important. This kind of reports should be shared with the rest of the project team, in order for them to be able to monitor their own workload and bring to the Project Manager's attentions issues of possible over allocations of themselves or others.

This kind of report can be useful in a resource leveling process.

RESPONSIBLE	Sep 2014				Oct 2014				Nov 2014				Dec 2014			
	31	7	14	21	28	5	12	19	26	2	9	16	23	30	7	14
TOTAL HOURS	86	130	113	106	120	89	89	87	67	43	29	12	8	10	11	11
John Adams	31	35	20	20	20	20	4	23	21	10	10	10	8	10	2	
Shawn Boyce	4	5														
Rick Cook		16														
Cortney Cutler	9	3	12													
Pat Kelly	16	20		30	66	10	28	37	17	1						
Cristin Missimer			10													
Rick Mosenkis	15	39	64	47	18	47	52	27	28	26	15	2		9	11	
Randy Rollins	3	5														
Tom Stringer				2	13	6										
Dusty Water					2	2	0									
[Pronto Printer]						4	5									
[No responsible party]	7	8	7	7	3	2			1	6	5					

Figure 4.10: An example of a resource Workload Report

Portfolio Report:

Most of the Project Managers are managing multiple projects, so it is logical for PMs to need to be able to monitor these projects constantly. Through a portfolio report a Project Manager can obtain insight and keep up with the different aspects of each project in his/hers portfolio. The PM can examine milestones, the status of each project, a fact that enables him or her to carefully observe each project that might be off-track.

Centro de proyectos

Nombre * Acciones * | E a * |

Editar Editar propiedades del proyecto Crear equipo Manejamiento de recursos

# Proyecto	Nombre del proyecto	Project Health	Tiempo	Presupuesto total	Recursos	Alcance
Dirección de Sistemas						
00010	Detalle de Control de Calidad	●	●	●	●	●
00017	Control de Gestión y Promociones	●	●	●	●	●
00006	Implementación de Aplicaciones COE	●	●	●	●	●
00003	Tecnologías Gráficas	●	●	●	●	●
Infraestructura Informática						
00008	Control de Material de Capacitación CRM	●	●	●	●	●
00004	Programa de Capacitación en línea	●	●	●	●	●
0001	Control de Calidad al Sistema de Gestión	●	●	●	●	●
00012	Plan de Capacitación	●	●	●	●	●
PMO						
00006	Control de Calidad Servicio COE	●	●	●	●	●
Service Support						
00014	Seguimiento Control de Avances	●	●	●	●	●
00010	Proceso Integración de Datos	●	●	●	●	●
Sistemas Administrativos						
00020	Plan de Implementación	●	●	●	●	●
00004	Control de Calidad	●	●	●	●	●
00004	Control de Calidad a la Metodología	●	●	●	●	●
Sistemas Comerciales						
00025	Proyecto Implementación de Nuevas Tecnologías	●	●	●	●	●

Figure 4.11: An example of Portfolio Report

Status Report:

Regarding the status report the Project Manager can look at different items and aspects of the project, in order to keep track of the whole of it. Such items are:

1. Work completed - Latency
2. Schedule variance
3. Cost variance
4. Risks
5. Issues – Errors
6. Changes

This type of report can be in a form of a chart or graphics making it easier for the Project Manager and the project team to receive the needed and proper information and data regarding the course of the specific project.

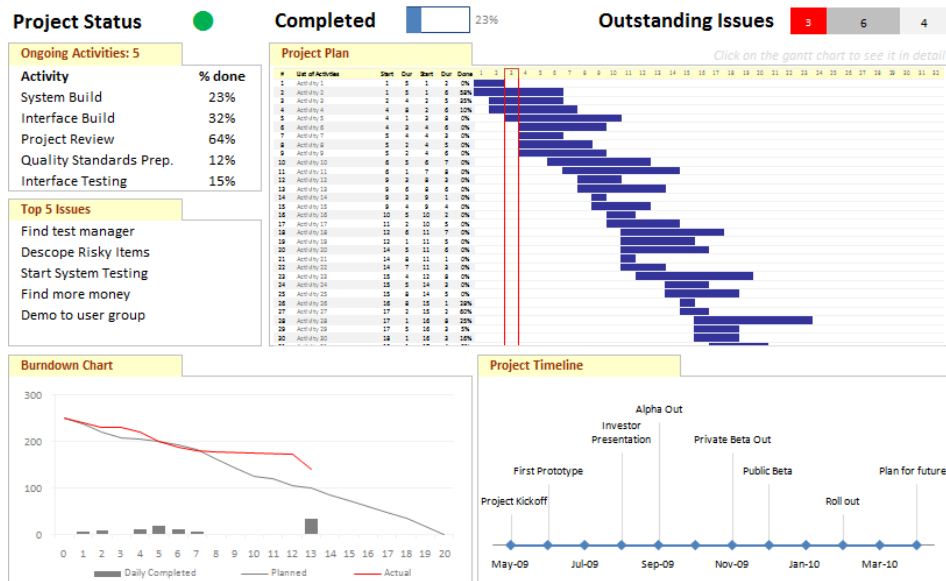


Figure 4.12: An example of a Project Status Report

As anyone can understand up to this point, the Project Manager and the Project Team need to be up to date at any given time. The correct knowledge regarding all projects aspects is vital in order for the project to be crowned as a success. Reports secure the correct and appropriate information flow from the lower levels to higher ones, and finally to the Project Manager. A well designed reporting system can affect the total cost of the project, as when the right information is communed and clearly received, there are no misunderstandings and everything is kept in track so that no sudden and unforeseen events take place.

CHAPTER 5

5. Human Error in Communication - Lessons Learnt the Hard Way

5.1. Introduction

As it is aforementioned, communication holds a high place in matters of planning, executing, designing strategies, resolving problems, passing on a message, monitoring, controlling and many other corporate aspects that might apply either in a project or any other situation within an organization regardless the complexity of processes. Human error, regarding communication, is a huge factor that has a great effect on any situation within an organization of any activity (large or small) and of any field from the aeronautical to industrial. Human error does not have any boundary and will exist for ever just because nobody is perfect. These possible everyday mistakes can be imagined as small or extremely large baggage that the corporations must carry on their back when they occur.

As we talked about before, communication can be the key in matters of proactivity and prevention thus a faulty one might result in unfortunate events, accidents or even hazards. Issues arise daily in every kind of working environment and they might be of a wide variety of nature such as a client's claims, equipment failure, ignoring key factors that should be paid attention, simple setbacks in budget or time due to unplanned circumstances etc.

Communication failure is a complex problem because it involves man and machine. Failure can be attributed solely to an equipment problem such as system overload, poor reception, inter-operability of different communication devices, or lack of technology. In other situations failure can occur because certain individuals neglect to pass along vital information or do not think it is important to do so. Failure can occur within an organization, between organizations, or between

authorities and the general public. So, it is safe to say that Communication failure is a risk factor in every disaster, whether the event is caused by accident, intentional act or nature [Mark D.Abkowitz 2008].

In this chapter, human error in communications based accidents and hazards of large scale will be analyzed and discussed in order to understand how a proper communication system could have prevented these tragic situations.

5.2. Industrial Accidents

5.2.1. The Bhopal Disaster Nightmare

A chemical plant in Bhopal, India, owned and operated by a subsidiary of Union Carbide Corp., accidentally released 40 tons of methyl isocyanate gas (MIC). Plant workers had allowed water to seep into the MIC tanks, causing a reaction that led to the release. Poorly maintained safety systems failed to contain its movement. A toxic cloud drifted over residents of Bhopal while they were asleep and eventually covered an area of more than eight square miles, affecting a population of nearly 900,000 people. As many as 4,000 men, women and children died that night while in bed or trying to escape the fumes. Estimates of those injured or disabled are as high as 400,000. Within three days, estimated fatalities had risen to between 7,000 and 10,000 people. As many as 15,000 more have since reportedly died from residual exposure. The Union Carbide Corp. was one of the earliest U.S. companies to establish a subsidiary in India, beginning in 1934. India was seeking to attract foreign investors to strengthen its economy and often did so, like many other developing countries, by relaxing safety standards or ignoring violations. Union Carbide, without any objection from the Indian government, applied different safety standards than those used in its West Virginia plant that manufactured similar products. The Bhopal disaster involved such a large number of risk factors—including lack of planning and preparedness, **poor communications**, hands-off management, understaffing, and a culture and

company that placed economic priorities over safety—that the occurrence of a catastrophe was not so much a matter of “whether” but “when.” It led to the worst disaster in the history of the chemical manufacturing industry and served as a bellwether event for the industry and a catalyst for safety reform [Mark D.Abkowitz 2008].

The tragedy did not occur from a single and sole factor as fore told. Many things contributed in making this the worst tragedy India has ever seen but also one of the world’s largest industrial accidents of all time. The location of the plant near very densely populated areas should have been a reason to have had an external alarm system that could notify the people living in the immediate area for a potential leak so that they could protect themselves or even evacuate the premises. It is a fact that even though there was an alarm inside the plant (which according to workers was sound for five minutes), there should also have been an external one.

In the 15 years of the plant’s working, there have been many warning signs that trouble lied ahead and many of those signs if not all were repeatedly ignored. Accidents should not happen every day, but in this specific plant, as studies and workers suggest, they were kind of a routine event as each day something went wrong like having minor leaks of gas and leaks of fuzz gene gas (another type of gas not as deadly as MIC).

After the disaster many investigations have been launched from the government of India and its officials, the Union Carbide Corp. itself and many journalists. As it was expected many different theories emerged, but all had a same baseline, which was the fact that there was an error while water washing the MIC storage tanks. At the time of the tragic event the plant was in standby mode for more than 1 month due to the lack of demand of pesticide in winter. MIC is a chemical that reacts explosively when large amounts of it come in contact with water. In the specific plant, the MIC tanks were half buried with a concrete coating and each one of them could store up to 45 tons of the deadly chemical, making this facility one of the largest storage ones worldwide regarding MIC stock. The reaction that caused the accident took place in the storage tank E610 and happened with such force that the tank lifted up its concrete coating and even broke through

the surface.

According to the findings of India's government's officials, at least 27 tons of poison vapor and 14 tons of reaction byproducts were released in the air for at least 90 minutes. Additionally they believe that a single Bhopal plant worker failed to follow a safety procedure and did not place a piece of metal called the slip ide in the right place to secure the valve. Indian investigators also believe that the reaction was worsened by the fact that the valves were poorly maintained thus becoming clogged and couldn't allow water to drain harmlessly away from the tank that was being washed. They also pointed out that the cooling unit that serviced the tank 601 was turned off making the MIC inside of the specific tank even more reactive due to its temperature.



Scheme 5.2.1: The design of the tank system in the plant

In contrast Union Carbide's investigators came up with a different explanation for the accident. They too believed that remnants of water in the tank 601 was the main issue that caused the accident but they thought the intentions behind the accident were sinisterly intentional as they suggested that the specific worker supplied water into the tank in order to ruin a batch of MIC, not understanding the consequences of his actions.

Journalists though point to a larger systematic pattern of failures concerning the plants site

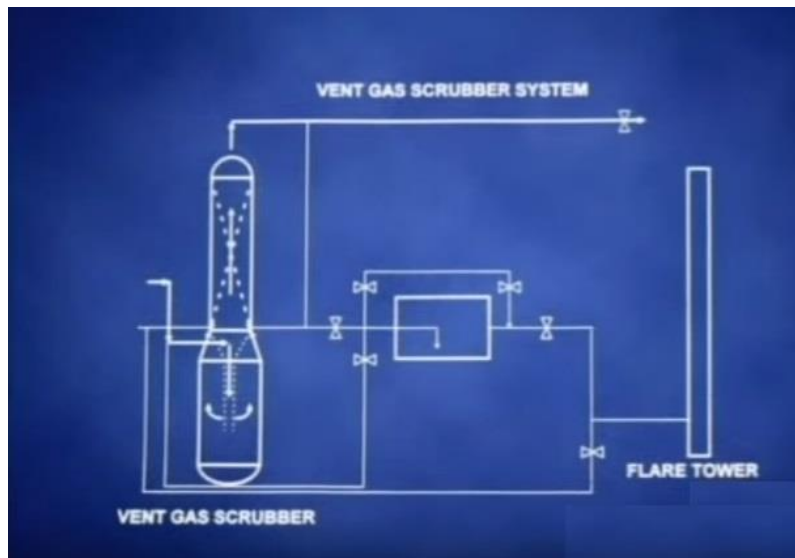
location, design and day to day operations.

Despite the fact that a lot of investigators wanted to reduce this event to some guy opening a valve he should not have, there were many other factors that also were major reasons why this terrible accident occurred. The bad design of the plant, the fact that the MIC was stored in huge tanks instead of smaller ones (that could have lessened the intensity of the event from a huge catastrophe to a big accident) and bad communication were the major factors that made this disaster a reality.

According to an investigation of a group of chemical companies, crucial equipment of the plant was not working due to bad maintenance or just not turned on such as a device called a scrubber, a filter essentially that could have destroyed the MIC gases as they flowed out of the tank. Also, past the scrubber there was a process flare that could have burned off the MIC that was being emitted but it was also turned off.

The Center of Chemical Process Safety's review suggests that the disaster was a result of a series of failures that were an outcome of the way the plant was run. The root causes in a case like this according to Scott Berger (AIChE Ctr. for Chemical Process Safety), are management failures.

Moreover, Su Man an employee of the plant that was working the night of the accident has said that the inaccurate meter readings were a reason behind the tragedy as the pressure and temperature of the tank 601 were shown at normal levels until only minutes before the accident on the control room indicators. He adds that the personnel that were working in the plant on that night tried to implement security emergency procedures to neutralize the gas. The procedure has a logic order of the gas passing from the tank to a filter called a vent gas scrubber, and then it passed through a flare tower which is designed to burn off any escaping gas. Investigators say that the operators of the scrubber device and the flare tower have switched them off due to the plant's inactivity thus letting the toxic gas flow through the flare chimney to the atmosphere.



Scheme 5.2.2: The morphology of the filtration system

It can be understood that if anyone of the following measures, for example the design of the plant, the design of the safety systems, the effort to maintain the plant, the effort to turn on the safety devices, if anyone or all of them have been done, it would have contributed vastly in minimizing the kind of damage death and destruction that resulted from gas leaks.

5.2.2. Conclusions regarding poor communication in the Bhopal case study

If we take a closer look to the facts, we can understand that one of the key factors that led to this great disaster and cost the life of many people and immensely large amounts of money that was lost from the part of the owning corporation was poor communication. Firstly, the message that the toxic gas was leaking to the atmosphere could not be passed on to the people that lived around the plant, as there were no proper alarm systems. Secondly, the poor regulatory system in matters of following guidelines for procedures and the nonexistent written guidelines regarding the water washing procedure and supervision of the maintenance by a technically qualified expert in order for the proper way and/or course of action to be communicated to the employees who performed it, was a major factor that led to the accident. Moreover, the operators of the

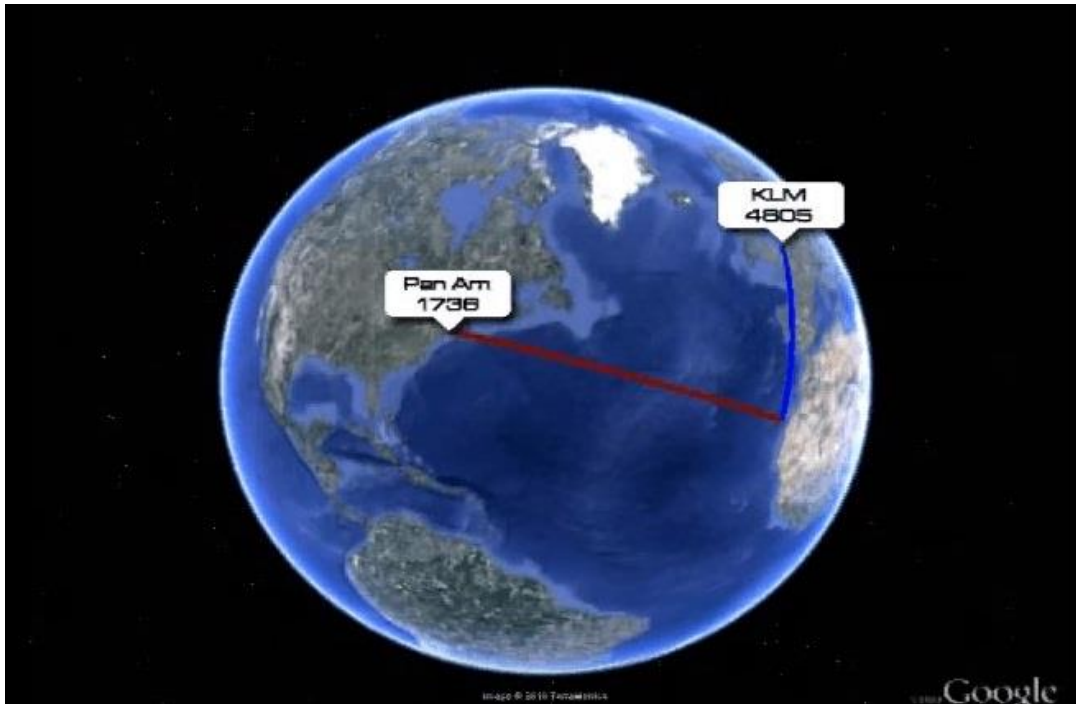
scrubber filters and the flare – gas residue burning system hadn't properly informed all the people in charge of monitoring in the control room. In addition, the metric instruments that are used to monitor important variables regarding the situation within the tanks such as pressure and temperature indicators were not working properly (due to the bad state they were, caused by the nonexistent maintenance), thus making the prevention of the accident impossible.

If all the above is taken into consideration, it is safe to conclude that poor communication was one of the paramount importance factors that worsened in a very large scale the situation in Bhopal.

5.3. Airline Accidents

5.3.1. Tenerife Airport Disaster

On March 27th 1977, the Pan Am flight with number 1736 took off from J.F.K Airport New York, bound to Canary Islands. Also, a KLM flight the flight 4805 left from Amsterdam also header to Las Palmas. During the time those two aircrafts were mid-air a terrorist bomb exploded in the passenger terminal in Las Palmas. As a result, all aircrafts whose destination was Las Palmas were diverted to Las Rodeos airport in the island of Tenerife.



Picture 5.3.1: The destination of the two flights



Picture 5.3.2: Las Palmas and Tenerife

Due to the high traffic at Las Rodeos, both the 747 aircrafts were ordered to park in the holding

area for runway 12 with the KLM aircraft closest to the runway. After some hours when the Las Palmas airport was open again, the Pan American crew prepared to proceed to Las Palmas from Las Rodeos.



Picture 5.3.3: The way the two aircrafts were parked at Las Rodeos Airport in Tenerife

The KLM airplane asked and received permission to enter the runway and begin taxiing for the holding position for the runway 30 in order to take position for takeoff. Minutes later, the Pan Am flight was given permission to enter the runway and perform a 180 degree left turn into a taxiway in order to make room for KLM's flight to takeoff. The Pan Am flight started taxiing down the runway but there was a confusion in which taxiway they should have used to exit the runway. The tower confirmed that they should have used the taxiway number 3 as the taxiway number 1 and number 2 were blocked due to the excessive traffic thus many parked aircrafts. The KLM flight informed the control tower that they had just passed the taxiway number four, and the control tower directed the pilot of the KLM flight to execute an 180 degree turn and get ready for takeoff clearance. Between the two planes there was fog and visibility was very low at even 300m at 05:02.



Picture 5.3.3: The four taxiways in the Las Rodeos Airport

The fog was that dense that some of the parked aircrafts and the KLM aircraft were not even visible from the control tower. At 05:01 the Pan Am captain informed that they had just passed the C1 taxiway, and the control tower informed the two aircrafts at 05:05 that the central lighting of the runway was off due to technical issues. The Pan Am captain then informed his crew that with the central lighting off he would need at least 180m visibility in order to take off and he noted that they were passing taxiway C2. At 05:05:53 the control tower gave permission to the KLM aircraft to takeoff, at 05:06:09 the KLM airplane announced that they were in takeoff. On 05:06:11 the breaks on KLM's Boeing 747 are released. At this time the KLM airplane is going down the runway. On 05:06:18 the control tower replies "ok" and on 05:06:20 "stand by for takeoff I will call you". As soon that was heard on the radio the Pan Am crew informed in the radio that they were still taxiing down the runway. All the simultaneous and quick transmissions caused noise in the KLM cockpit making the transmissions difficult to hear. At 05:06:25 the controller asked the Pan Am airplane to report when they were clear of the runway. Pan Am responded "We will report when clear". This heard transmission back in the KLM flight made the flight engineer to enquire "Captain, is he not clear then?" The captain initially did not hear the

question and after he asked the engineer to repeat he answered “Oh yes”. At 05:06:38 the Pan Am crew saw the KLM flight coming towards them. In a distressful effort to avoid collision the Pan Am captain tried to speed up and turn left onto the grass, but unfortunately it was already too late and 9 seconds later the two aircrafts collided a little bit short of taxiway C4 (where the Pan Am flight would turn in).



Picture 5.3.4: Pan Am flight trying to perform a maneuver to the left to avoid collision

The aftermath of this tragic accident that is characterized as the deadliest accident in aviation history was terrifying. Of the 284 passengers and crew in KLM flight there were no survivors. Of the 396 aboard the Pan Am flight 335 were killed.

[Pictures are ripped from the FAA animation of the Tenerife accident]

5.3.2. Conclusions regarding poor communication in the Tenerife case study

The Spanish investigative authority, Subsecretaria de Aviacion Civil, found that the fundamental

cause of the accident was the KLM captain:

- I. Took off without clearance
- II. Did not obey the "stand by for takeoff" direction from the tower
- III. Did not interrupt take off on learning that the Pan Am aircraft was still on the runway
- IV. In reply to the KLM flight engineer's query as to whether the Pan Am aircraft had already left the runway, the KLM captain replied emphatically in the affirmative.

As we understand though, no one wants to be implicated in an accident let alone the deadliest in aviation history and even lose his own life; thus raising the question if the communication was correct and proper in order to secure full comprehension of both the aircrafts captains and crews on each other's positions.

After thorough research related to this accident, it has been concluded that there was indeed poor communication. The whole stressful situation of the diversions, the excess traffic, and the haste to prepare the aircrafts for takeoff together with the simultaneous radio messages led to confusion. The communication between the control tower and the cockpit of KLM was faulty as the KLM flight was given permission to takeoff and soon after revoked while the airplane had already started to "run" down the runway. Also, the bad quality and the white noise prevented the KLM captain to hear correctly what his Pan Am colleague was saying in the radio, that they were still in the runway. All this, combined with the aforementioned circumstances and the low visibility due to the fog led to the deadliest accident in aviation history.

We can understand that if the communication was clear, effective, to the point and firm, this tragedy could have possibly be averted sparing over 500 lives and millions of those companies' funds.

5.4. Maritime Accidents

5.4.1. Poor Communication Leading Culprit in Maritime Accidents

Half of the costs of hull and machinery claims handled by the Swedish Club, a marine insurer, have arisen due to navigational claims such as collisions, contacts or groundings, the Club says in a release. The marine insurer says that this figure has remained steady over recent years despite improved technology and the widespread implementation of Safety Management Systems. In its latest Loss Prevention publication, Navigational Claims, the Club has revealed a number of findings relating to claims made for hull and machinery damage between 2004- 2013. The report suggests that many navigational claims still occur due to procedures not being properly followed by crew members, **and officers not communicating with each other properly**. In addition poor communication between both vessels and bridge team members and a lack of situational awareness all play a part. Navigational Claims details measures that can be adopted to help prevent these incidents occurring in the first place, such as having clear, meaningful procedures for officers and crew to adhere to and, more importantly, ensuring they understand the consequences of not following them properly.

[Source: World Maritime News]

5.4.2. MV Doña Paz

The MV Doña Paz was a Philippine-registered passenger ferry that sank after colliding with the oil tanker MT Vector on December 20, 1987. With an estimated death toll of 4,386 people and only 24 survivors, it was the deadliest peacetime maritime disaster in history. Doña Paz was traveling from Leyte Island to the Philippine capital of Manila. The vessel was seriously overcrowded, with at least 2000 passengers not listed on the manifest. In addition, it was claimed that the ship carried no radio and that the life-jackets were locked away.

At the time of its sinking, the Doña Paz was sailing the route of Manila to Tacloban to Catbalogan and back to Manila and vice versa, making trips twice a week. On December 20, 1987, at 06:30, Philippine Standard Time, the Doña Paz left from Tacloban City, Leyte, for the City of Manila, with a stopover at Catbalogan City, Samar. The vessel was due in Manila at 04:00 the following day, and it was reported that it last made radio contact at around 20:00. **However, subsequent reports indicated that the Doña Paz had no radio.** At around 22:30, Philippine Standard Time, the ferry was situated at Dumali Point, along the Tablas Strait, near Marinduque. A survivor later said that the weather at sea that night was clear, but the sea was choppy. While most of the passengers slept, the Doña Paz collided with MT Vector, an oil tanker en route from Bataan to Masbate. The Vector was carrying 8,800 US barrels (1,050,000 l; 280,000 US gal; 230,000 imp gal) of gasoline and other petroleum products owned by Caltex Philippines. Upon collision, the Vector's cargo ignited and caused a fire on the ship that spread onto the Doña Paz. Survivors recalled sensing the crash and an explosion, causing panic on the vessel. One of them, a passenger named Paquito Osabel, recounted that the flames spread rapidly throughout the ship, and that the sea all around the ship itself was on fire. Another survivor claimed that the lights onboard had gone out minutes after the collision, that there were no life vests to be found on the Doña Paz, and that **all of the crewmen were running around in panic with the other passengers and that none of the crew gave any orders nor made any attempt to organize the passengers.** It was later said that the life jacket lockers had been locked. The survivors were forced to jump off the ship and swim among charred bodies in flaming waters around the ship. The Doña Paz sank within two hours of the collision, while the Vector sank within four hours. Both ships sank in about 545 meters (1,788 ft) of water in the shark-infested Tablas Strait. **It reportedly took eight hours before Philippine maritime authorities learned of the accident, and another eight hours to organize search-and-rescue operations.**

According to the initial investigation conducted by the Philippine Coast Guard, **only one apprentice member of the crew of the Doña Paz was monitoring the bridge when the**

accident occurred. Other officers were either drinking beer or watching television in the crew's recreation quarters, while the ship's captain was watching a movie on his Betamax in his cabin. Nonetheless, subsequent inquiries revealed that the **Vector was operating without a license, lookout or properly qualified master.** The Board of Marine Inquiry eventually cleared Sulpicio Lines of fault in the accident. In 1999, the Supreme Court of the Philippines ruled that it was the owners of the Vector who were liable to indemnify the victims of the collision. Some of the claims pursued against either Sulpicio Lines or the owners of the Vector, such as those filed by the Cañezal family (who lost two members) and the Macasas family (who lost three members) were adjudicated by the Supreme Court, which found that even the families of victims who did not appear on the official manifest were entitled to indemnity. Caltex Philippines, which had chartered the Vector, was likewise cleared of financial liability.

5.4.2.1 Conclusions regarding poor communication in the MV Dona Paz case study

After examining the events that happened with MV Dona Paz we can safely draw the conclusion that poor communication, not following regulations, lack of proper equipment (f.e. radio) and expertise of the personnel in both ships were the main causes of this tragedy, the biggest tragedy ever in Maritime history.

The poor communication can be seen if we stand on the following facts:

- I. There were no sufficient crew members monitoring the surroundings. There was only one person, while others were enjoying alcohol and movies. This was a major mistake as if there were more people watching the accident could have been prevented with the fast communication of the imminent danger and a possible collision between the vessels.
- II. Also, the crewmen did not possess the proper training and knowledge in order to

communicate with the crowd in a manner that could ease their minds, a bit at least, but also give them directions to head to muster stations or help them in any way. Survivors' statements suggest that crew members ran around in panic the same way the rest of the passengers did.

- III. According to many of the survivors' statements the ship did not have a radio so no one could know that there has been an accident and act. As it was foretold it took eight hours before Philippine maritime authorities learned of the accident, and another eight hours to organize search-and-rescue operations, losing valuable time.
- IV. The bad monitoring of the ship's passenger manifesto and crosschecking with the ones on board by the port authorities worsened the situation, as firstly if the ship followed the regulations and boarded 1518 people (that was allowed to in maximum capacity), the lives of over 3000 people would be spared and secondly, 1500 people are way easier to handle, direct and/or help if being 59 people as the crew was (and if they had the proper training). So, there was nonexistent communication and no information was passed on the port authorities regarding the number of passengers on board.

5.4.3. Mars Report Number 09

The Nautical Institute has issued Mars Report No 09 on collision happened due to BRM (Bridge Resource Management) misconnect. In darkness, two vessels under pilotage were approaching each other in a very restricted canal. Shortly after rounding the bend in the canal, the vessels came into view of one another. It appeared to the pilot of vessel A that vessel B was slightly crowding the north side of the channel. Accordingly, he decided to give a little more room for the meeting to take place by moving closer to the north bank. The pilot did not communicate his intentions to either the pilot of the other vessel nor to the navigation personnel of his ship. When satisfied with the vessel's position in the channel, he asked the helmsman to steer 248° gyro (G). The helmsman complied but found that the vessel needed regular inputs of 5° to 10° starboard

helm in order to maintain the heading. The OOW (Officer Of the Watch) was standing by the helmsman, verifying his actions. For the next few minutes, more than 10° starboard helm was applied to maintain the heading on vessel A. Thereafter, 20° to 30° starboard helm was necessary to steer the desired course and, as the vessel had a flap type rudder, the helmsman was able to keep the required course of 248°. During this time, the pilot reportedly glanced at the rudder angle indicator from time to time, but there was no exchange of information among bridge team members. During this time the pilot gradually reduced the propeller pitch to slow the vessel down before the meeting. Since completing the bend at 7.6 knots, vessel A was now making 5.7 knots. There is conflicting information with respect to the helm orders given next on vessel A. The navigation personnel maintain that the pilot ordered the helm amidships, whereas the pilot does not recollect this order. The helm was nonetheless put to amidships and the vessel immediately started to sheer to port. Full starboard helm was then applied, but the vessel's heading continued to swing to port. The two vessels collided near mid-channel at a combined speed of approximately 6 knots.

Some of the findings of the report were as follows:

- I. The bank suction effect on vessel A became progressively more pronounced, requiring increasing starboard helm; placing the helm amidships caused the vessel to sheer to port.
- II. There was no relevant communication between the pilots of the two vessels throughout the developing situation.
- III. Ineffective Bridge Resource Management (BRM) aboard vessel A resulted in critical information not being shared with the pilot, thus precluding timely action.

5.4.3.1 Conclusions regarding poor communication in the Mars Report 09 case study

Studying the accident that happened between the two vessels we can understand that the

fundamental cause of the accident was poor communication. The pilots did not communicate with each other, but also the pilot in vessel A did not keep his navigation crew informed at all times. This one way course of acting without informing others had an unfortunate outcome, the collision of the two vessels. Even if there were no casualties the economic cost of this accident.

5.5. Chapter Conclusions

In this chapter we have examined, explained, analyzed and discussed about the biggest disasters that have happened in the industrial, airline and maritime field. Disasters that if put together, count almost a million of innocent souls lost. There are surely many factors that are hidden behind each and every one of them that led to the happening of the tragedy but there is definitely one that is present in every single one of these horrific accidents. Poor Communication. From the inability to report back in the Bhopal nightmare to the nonexistent radio of MV Dona Paz, to the misunderstanding of KLM's captain to proceed in taking off, we can understand that poor communication has played a very major and significant role.

Communication is all around us, from passing on a simple message, to informing others for very important facts, situations, events, data etc. It is the link that connects each one's mind with the other and it is the problem but also the solution. By the end of this chapter we have grown to understand that communication must always be kept at the highest possible quality and the messages behind the effort to commune must be clear, direct and asking feedback especially in the workplace, and even more when the profession has to do with grave underlying dangers and risks that could, in a blink of an eye, bring vapor, iron or fiery death to your doorstep. If there was impeccable and of the highest quality communication and/or communication systems in the aforementioned tragedies, there is a chance they could have been prevented or even de-intensified thus saving thousands of lives.

CHAPTER 6

6. General Conclusions

At the start of this thesis, a journey was started, an expedition in order to understand in depth the meaning and the importance of project communications. No matter how standard and well understood the term communication might seem, there are definitely many dark sides of this moon. A communication can be deemed effective only if many invisible guidelines that have to do with who shall receive a message, when, how and why, are followed. People are all different individuals with different traits, backgrounds, cultural imprints, customs, way of thinking, perception etc. thus it is safe to say that different people require different forms and effort in order to be communicated a message regardless its importance. We can imagine the project, whatever its type, as a whole body that is comprised from many different organs (departments) that are comprised themselves with many more different cells (human resources). Having said that, we can comprehend the importance of proper and effective communication within each organ individually, but also throughout the whole complex of these organs, in order for the body to be successful. Using proper tools and following the aforementioned approved guidelines, a Project Manager can act as an orchestral conductor in order to lead the way to the best communication quality wise and inspire others to follow his patterns.

The majority of studies that examine the correlation of communication's effectiveness and the success rate of a project (large/medium or even small scale ones) conclude that effective communication is the key to unlock the flow of useful information and data that can baptize the project successful. Moreover, effective communication in projects helps immensely to reach the goals that have been set (regarding costs, time, etc.) but also it can relieve the project and the organization of potential risks, perils and the costs that are attached to them.

Effective communication in projects can be reached by using reports of a variety of types (occurrence, purpose, etc.). These reports can secure that the proper message and information is passed on to person who needs to be briefed about a specific issue. Formal and in writing

reports, either sent by mail or presented in the organization's grounds, are characterized by containing complete and strong information that follows a logical path. The conclusions and/or recommendations that are presented within these reports can address a specific topic directly and professionally in such a manner that will allow the reader to thoroughly understand the data/information that is being communicated to him. In addition, when using Integrated Reports (the integrated representation of a company's performance in terms of both financial and other value relevant information) people can be provided with greater context for performance data and the reason why value relevant information fits into operations or a business, and may help embed long-termism into company decision making. Surveys have shown that companies that have embraced this type of reporting have experienced rapid improvements regarding management and decision making, better external engagement with stakeholders, better business risk and opportunities understanding, impact on internal engagements, fact that classifies these organizations as highly effective and efficient in the whole of their communication system thus also and in their everyday processes and activities. Moreover, reports can be useful in documenting potential risks regarding incidents and hazards. This data can be used to identify priorly unknown dangers and be of great help in matters of prevention and measure taking in order to secure that the safety and quality of the workspace is the best standing. There are also types of reports that are designed according to Project Managers' needs. The project management reports are essentially the information and data that is collected from all the different projects that are managed. In most occasions the Project Manager is managing multiple projects and even if he is managing a sole project there are smaller projects that compile it. The flow of information in the correct way is very important regarding the progress of the project as well as the monitoring of time, scope and budget within this endeavor.

An organization can have many aspects of activity, and risks can be underlying in the details minor or major depending on its activity and processes. In the last chapter of the thesis three of the world's most tragic accidents have been presented in the form of a case study, an Industrial accident (Bhopal, India), an Aviation accident (Tenerife KLM & PanAm crash) and a Maritime accident (MV Doña Paz, Philippines). Although one can observe that these companies that were

involved in these horrific accidents did not have the same or even remotely close activity circle with each other, all of the accidents shared one specific cause which was Human Error due to poor communication. Faulty communications planning in all three of these unfortunate situations led to the loss of many thousands of lives and the loss of many billion dollars from the companies which could both had been averted.

At this point, one can easily comprehend that effective communication is the way to success within an organization. It can be used to create a more pleasant work environment, to pass on information from one to another, to monitor and control processes, activities or even whole projects, to identify risks and prevent accidents, to communicate your will and actions so that they will not cause a problem, to relieve costs that can be hidden and last but most important to even save lives. Wherever people are involved, information and communication (in any form) is involved, so one must take communication seriously and use it correctly in order to make words take form in somebody else's mind for the greatest problem in communications is that people do not listen with the intent to understand, they listen with the intent to reply.

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