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# THE CONTRIBUTION OF ORGANIZATIONAL INTELLIGENCE IN CREATING VALUE IN COMPANIES

*"The Case of Transportes Aéreos Portugueses"*

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## Abstract

Organizational *knowledge management* distinguishes an organizations management within *business process management*, aiming towards *value creation* and the achievement of *Return on Investment.* The current research aims to verify if the application of knowledge management within an international airline (TAP), results in *organizational intelligence* and leads towards value creation, applied through effective and efficient business process management. The approach therefore considers the conceptual framework of organizational intelligence.

The applied methodology sustains, that the results are grounded on a case study realized within the current implemented projects of the selected airline. The information towards this research was gathered through the implementation of a survey with specific reference to the presently executed projects throughout the entire organization. The systematic approach of organizational intelligence grounds the application of further methodologies, such as competitive intelligence, value management and process maturity, to ensure the application of knowledge.

The hypotheses are aligned towards the objective of the implemented survey, questioning the creation of value, the integration of knowledge management and in reference to business processes, defining the maturity levels within the organization. The survey accesses the hypotheses grounded on process maturity, leading to a strategic recommendation grounded on the results and organizational objectives. Through the management of process maturity, the results indicate that knowledge management is not successfully implemented and the procedures within the internal organizational processes of the airline request intense improvement towards value creation and the achievement of Return on Investment.



**Keywords**: Knowledge Management, Organizational Intelligence, Value Creation, Return on Investment, Business Process Management

**JEL Classification System:** M10 – General; L93 – Air Transportation

**Resumo**

A *gestão de conhecimento* organizacional distingue a gestão de uma Organização no âmbito da *gestão de processos de negócios*, visando a criação de valor e a obtenção de Retorno sobre o Investimento. A presente pesquisa tem como objetivo verificar se a aplicação da gestão do conhecimento dentro de uma companhia aérea internacional (TAP) resulta em *inteligência organizacional* e leva à criação de valor, aplicada através de uma eficaz e eficiente gestão de processos de negócio. A abordagem considera, portanto, a estrutura conceitual de inteligência organizacional.

A metodologia aplicada sustenta que os resultados são baseados num estudo de caso realizado dentro dos projetos correntemente implementados na mesma organização internacional de aviação. A informação para esta pesquisa foi recolhida através da aplicação de um inquérito com referência específica aos projetos atualmente executados em toda a organização. A abordagem sistemática de inteligência organizacional baseia a aplicação de outras metodologias, tais como inteligência competitiva, gestão de valor e maturidade do processo, para garantir a aplicação do conhecimento.

As hipóteses estão de acordo com o objetivo do inquérito implementado, questionando acerca da criação de valor, da integração da gestão do conhecimento e fazendo referência aos processos de negócio, definindo os níveis de maturidade dentro da Organização. O inquérito acessa as hipóteses baseadas em maturidade do processo, levando a uma recomendação estratégica fundamentada nos resultados e objetivos organizacionais. Através da gestão de maturidade do processo, os resultados indicam que a gestão do conhecimento não é implementada com sucesso e os procedimentos dentro dos processos organizacionais internos da companhia aérea requerem uma melhoria intensa para a criação de valor e a obtenção de Retorno sobre o Investimento.

**Palavras-chave:** Gestão do Conhecimento, Inteligência Organizacional, Criação de Valor, Retorno sobre o Investimento, Gestão de Processos de Negócio.

**Sistema de Classificação JEL:** M10 – Geral; L93 – Transporte Aéreo

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# 1. Introduction

Organizations develop and set up core and supporting activities to ensure the fulfillment of an organizations' objective, in which knowledge and organizational intelligence is a core aspect (Albrecht, 2002). Due to the process of globalization, organizations are in need to operate intelligently to ensure an organizations' existence, and to fulfill their responsibility towards their employees, customers and environment. Any type of organization, public or private, manufacturing or service providing; must specify clear structures and procedures, objectives and visions, distributed throughout the entire organization, ensuring the development of the organizations' core activity. The creation of clear structures throughout all organizational levels, is an essential business component to enable the creation of knowledge and the communication process, as well as sharing and transforming information to enhance the process of decision-making, resulting in a faster adaptation towards the changing environment (Wilensky, 1967; Albrecht, 2002).

An organizations' performance correlates with the internal organizational level of intelligence. To set up a measurement for the achieved value, the methodology of return on investment is considered as performance indicator. Nevertheless, different components within an intelligent organization contribute towards the definition and creation of value, such as:

- the two dimensions of knowledge towards organizations (Nonaka, 1994),
- the SECI model of knowledge creation (Nonaka, et al, 2000),
- the seven dimensions of organizational intelligence (Albrecht, 2002).

The core concept of organizational intelligence and the connected concepts are researched by several authors. Wilensky (1967) and Matsuda (1992) grounded the concept of organizational intelligence before facing the current importance in a globalized world; Halal (1998) focused on creating an Organizational Intelligence Quotient to deeper measure the intelligence level of an organization; while Albrecht (2002) identified seven dimensions which shape the dynamics of an organization.

## 1.1 Problem statement

The approach of organizational intelligence towards an organizations success factors plays an important role, which is measured through an Organization Intelligence Quotient (Halal, 1998) and includes, according to Albrecht (2002) several organizational factors. Thereby, the

core question arises: how company projects relate with the internal intelligence level and contribute towards the process of value creation?

Traditionally, various industries, including the considered aviation industry, implemented the methodology of return on investment to average the two components of profits and investments, to measure if the relationship generates profits through projects.

Needless to say, the generation process of return on investment in the aviation (and additional) industries is not exclusively dependent on the two mentioned components. Additional complex performance dimensions are connected through business units within the organizational process, such as individual human intelligence, an organizations' knowledge management philosophy, the corporate organizational structure or the implemented business strategy, which contribute towards value creation.

As industries face external circumstances, the aviation industry is affected through profound circumstances such as rising oil prices, euro debt crisis, reduction of airfreight or an increased competition of low-cost carriers (Osborne, 2009; Siribaddana, 2013). Internal circumstances through failures in business planning, like in example undercapitalization, overexpansion, lack of flexibility, inability to obtain a sustainable competitive advantage or wrong leadership, are possible failures airlines need to avoid.

Bearing this in mind, a limited connotation between the literature concepts and the creation of value has been achieved. To provide a deeper understanding, this paper will focus on the potential combination of organizational intelligence created through business processes and projects combined towards the creation of value.

As the purpose of creating an intelligent organization to enhance and sustain knowledge within an organization and achieving value, i.e. through resource adjustment (Lepak, et al, 2007), the current work aims at *analyzing if the application of organizational intelligence to the business process of project implementation in a specific aviation organization results in the creation of value towards the company*.

Apart from the mentioned main purpose, the research paper includes the following goals:

- To identify a criteria to set up a structured case study approach;
- To define a literature concept highlighting the theoretical impacts towards the following implemented concepts;
- To identify a conceptual reference framework defining a literature connotation;
- To identify a survey structure, questioning project and personal characterization aligned with detailed reference towards the theoretical concepts;
- To identify an appropriate tool to measure the survey results;

- To analyze the achieved results, focusing on the achievement of research validation;
- To identify a strategic guidance towards the analyzed organization.

### 1.2 Research question

A linkage of the stated problem and the general objective of the present thesis are grounded on a defined research question:

**Research question:** *How does the organizational intelligence of a company contribute to the creation of value in an organization?*

### 1.3 Case study approach justification

The approach of a case study empowers the researcher to investigate realistic real-life occurrences. Throughout the decades, the case study methodology achieved an important status of being an applicable research method, regarding the gathering and analyzing of information in the broad range of business processes.

Eisenhardt (1989) and Yin (2009) relate the methodology of a case study research with an explanatory type of research. As the research strategy of a case study is typically a combination of data collection methods through i.e. archives or interviews, the advantage of the methodology offers the possibility of adjustments in theory building within the uniqueness of a specific case (Eisenhardt, 1989).

According to Yin (2009), each case study inclines the fulfillment of three identifiable characteristics, such as: 1) a research question form of “how” or “why”; 2) none or slight control requirements of the behavioral events; and 3) the study should focus on contemporary events.

Considering the described criteria as the argument for implementation, the presented research aims to provide a comprehensive understanding through surveys and analyses, how organizational intelligence influences the value creation process in an international aviation organization based on the case study approach.

### 1.4 Scope of research

Based on the previously defined objective, the presented research will be performed within the aviation industry (air transportation) – specifically with the airline *Transportes Aéreos Portugueses (TAP)*. The core objective of the airline is to provide an efficient and effective air transportation service within the aviation market, focusing on various sub objectives, such as customer-, business-, employee- or service objectives. The objectives are aligned with

implemented projects to satisfy the nature of a project objective, which includes customer complaints, internal idea creation or enhancement of previous implemented projects. The organization makes use of the internal intelligence and knowledge of their employees, as well as through gathered information.

Bearing this in mind, possible limitations regarding the objectives of the paper, stress that the research is structured to the implemented survey; named as well as investigated in *chapter 5* within the framework of organizational intelligence. In fact, the implemented survey, the framework implementation, the reflection of the investigated results as well as the resulting evaluation of value contribution through process implementation, are the objectives to achieve within the field of research.

### 1.5 Thesis outline

The present thesis outline includes the following six chapters:

- **Introduction** – the topic linked with brief contemplations regarding the objective of the presented study, the research question, as well as scope and restrictions are presented;
- **Literature review** – the theoretical guideline as the essential fragment of the study in which the frameworks of knowledge management, organizational intelligence, competitive intelligence, value management / return on investment and process maturity are examined in depth;
- **Conceptual reference framework** – a synthesis of the presented theoretical concepts provides a summarized compendium towards the further implementation;
- **Methodology** – the type of research methodology is revealed, the implementation of a case study approach is substantiated as well as methods and processes are explored;
- **Case study description** – the implementation of organizational intelligence within the process of project implementation in an airline and implemented survey are disclosed, the application of the theoretical frameworks are described and the results of project implementation are analyzed;
- **Conclusion** – the outcomes of the research analyses are assessed by the research definition, a result validation and the hypotheses verification. The connected research recommendations provide guidance towards implementation steps grounded on the research results. The research conclusion stresses the research limitations and defines possible future research alternatives.

# 2. Literature Review

The following chapter performs a literature review approaching the concepts of knowledge management, organizational intelligence, competitive intelligence, value management / return on investment and process maturity. These key concepts are the implemented approach and include a walkthrough of definitions and background information, to ensure the emphasis of the thesis.

Starting with a definition of the concept of knowledge management, the importance of knowledge towards organizations is highlighted. Knowledge management represents the base to define the meaning of an intelligent organization. The concept of organizational intelligence is grounded on the work of various researchers providing a deeper understanding of the concept, the impact and the contribution towards organizations. Additional understanding is given through the concepts' seven dimensions (Albrecht, 2002).

In accordance with the two concepts, the framework of competitive intelligence emphasizes the linkage of the previous concepts and presents an important aspect for successful value management and the contribution towards an organizations' success through the methodology of return on investment.

## 2.1 Knowledge Management

To understand the concept of an intelligent organization, the conception of knowledge management (KM) and its contribution towards an organizations' success, is essential. As a first step, the author states that no historical definition of the term "knowledge" is presented, as the writer complies with the explanation of Nonaka (1994:15) who *"... adopts a definition of knowledge as "justified true belief"."*

The term knowledge is an essential point when referred to an organization and their way of operation. Various scholars highlight the importance of knowledge towards organizations, such as Nonaka (1994); Choo (1995); Inkpen (1996); Demarest (1997); Liebowitz (1999); Lubit (2001); Chalmeta and Grangel (2008). These authors guide their definitions on the concept of Nonaka (1994), who distinguished between tacit and explicit knowledge.

The concept of KM stresses the importance of knowledge towards organizations, distinguishes between two types of knowledge and underlines the concept based on the SECI-Model of Nonaka (1994).

### 2.1.1 The importance of knowledge towards organizations

When referring to the term "knowledge", a tendency to create an association with *research and development* appears. As knowledge is an essential source in any type of organization and situation; it leads to effective operations in research and development.

Within KM, the importance of knowledge to an organization is critical and a key factor to achieve a competitive advantage within the process of globalization. To ensure the right understanding, it is obligatory to differentiate between the terms information and knowledge. Nonaka (1994: 15) stated, *"... information is a flow of messages ..." and "(...) knowledge is created and organized by the very flow of information, anchored on the commitment and beliefs of its holder."* The transformation of information into knowledge emerges across individual interpretation and implementation within a context (Nonaka, et al, 2000).

Guansekaran and Ngai (2007: 2392) defined: *"Knowledge management involves the identification and analysis of available and required knowledge, and the subsequent planning and control of actions to develop knowledge assets so as to fulfil organizational objectives."* Inkpen and Dinur (1998) state that an organization's individuals are an essential part in creating knowledge, but without the process of sharing knowledge, the effect of knowledge is limited. Nonaka (1994) argues that knowledge is a component in any organizational level, which can be distinguished by an organizational culture, systems and routines. The following components conclude the term knowledge management:

- value creation through intangible assets (Liebowitz, 2001),
- the leveraging of existing knowledge (Gold, 2001),
- the distribution of knowledge (Demarest, 1997),
- and the sharing and developing of knowledge (Nonaka, 1994).

*"In a world where markets, products, technologies, competitors, regulations and even societies change rapidly, ..."* (Noanka, et al, 2000: 5) organizations need to focus on the objective to create and sustain knowledge internally, to achieve a competitive advantage. Organizations, which are able to continuously create and share new knowledge within an organization and have the ability to implement new knowledge in technological achievements and products, achieve competitive advantage (Nonaka & Takeuchi, 1995). The core objective within this process is continuous innovation (Nonaka & Takeuchi, 1995), which is *"... a process in which the organization creates and defines problems and then actively develops new knowledge to solve them."* (Nonaka, 1994: 14).

The following chapter distinguishes the types of knowledge to emphasize a difference within the process of knowledge creation in an organization.

### 2.1.2 Two Dimensions of Knowledge Creation

The dimensions of knowledge are based on the work of Nonaka (1994), who established a differentiated perception between "tacit knowledge" and "explicit knowledge", a reference to various scholars (e.g. Inkpen, 1996; Inkpen and Dinur, 1998; Alavi and Leidner, 2001; Becerra-Fernandez and Sabherwal, 2001). Researcher Choo (1995) classified between taxi knowledge, rule-based knowledge (explicit) and background knowledge. The paper focuses on Nonakas' work and the two dimensions of knowledge presented above.

In Nonaka´s (1994) perception both dimensions are essential towards an organization, as their combination *"... drives the creation of new ideas and concepts."* (Nonaka, 1994: 15). The two dimensions are described as followed.

**Explicit Knowledge**

The term "explicit knowledge" refers to knowledge, which is communicated through words and numbers, resulting in the ability to easily transmit knowledge (Nonaka, et al, 1998). Additionally, it is formal and in a systematic language (Nonaka, 1994). Explicit knowledge includes the ability to share knowledge *"... in the form of data, scientific formulae, specifications, manuals and such like."* (Nonaka, et al, 2000: 7). Choo (1995) links explicit knowledge with routines, procedures of operations and data records, whilst Inkpen (1996) researched, that explicit knowledge includes hard data and Liebowitz (2001) on the other hand, emphasizes the simple documentation of explicit knowledge. Ensuring efficiency and control within an organization are the benefits of explicit knowledge (Choo, 1995). Explicit knowledge is described through explicit facts, symbols, the overall ability to document knowledge and the knowledge about a specific circumstance (Lubit, 2001).

**Tacit Knowledge**

The term "tacit knowledge" refers to knowledge with a personal quality (Nonaka, 1994). *"... deeply rooted in action, commitment, and involvement in a specific context."* defines tacit knowledge (Nonaka, 1994: 16). Tacit knowledge includes cognitive elements, which diminish the ability to formalize and communicate that kind of knowledge (Nonaka, 1994). Emotions and actions, which highly refer to a certain person, reduce the ability of communicating knowledge (Nonaka, et al 1998).

*"Tacit knowledge is the knowledge of the subconscious which is something done automatically without almost thinking."* according to Liebowitz (2001: 1). This complies with Choo (1995), who includes for e.g. intuition or actions as a consistent aspect of tacit knowledge. Lubit (2001) states that tacit knowledge is the ability of an individual in knowing how. Additionally, tacit knowledge is acquired through the experiences of an individual

(Lubit, 2001). Summarized, tacit knowledge is non-verbalized and difficult to share within an organization.

### 2.1.3 Knowledge Creation – The SECI model

Continuing with the process of knowledge creation, the presented dimensions of knowledge are essential process components. *"... we need to recognise that tacit and explicit knowledge are complementary, and that both types of knowledge are essential to knowledge creation. Explicit knowledge without tacit insight quickly loses its meaning."* (Nonaka, et al, 2000: 8).

Inkpen and Dinur (1998) follow Nonaka's perspective, linking explicit knowledge through the integration into products and processes, while tacit knowledge refers to the experience and interactions with products, processes and routines. Based on this perspective, knowledge is only created through a continuous combination of explicit and tacit knowledge. Lubit (2001) proposes that the created knowledge must promptly be distributed internally, as competitors face a lower ability to copy tacit knowledge and organizations need to save and transmit tacit knowledge to achieve a competitive advantage. The process of creating knowledge is a continuous process (Demarest, 1997; Nonaka, et al 2000; Lubit, 2001), in which new aspects and information is acquired and transformed into knowledge. To ensure this creation, *"... knowledge is created through the interactions amongst individuals or between individuals and their environment."* (Nonaka, et al, 2000: 8). Organizations rely on employee commitment and identification with the organization and on the fact, that personal knowledge must be available throughout all levels of an organization (Nonaka & Takeuchi, 1995).

To deeper understand the process of knowledge creation; this paper focuses on Nonaka's (1994) SECI model. The SECI model, which stands for socialization, externalization, combination and internalization, ensures the components of knowledge transfer and knowledge creation (Nonaka, 1994).

First, the SECI model *(fig. 1)* is based on four conversion models (Nonaka, et al, 1998), named from tacit to tacit, from tacit to explicit, from explicit to explicit and from explicit to tacit knowledge (Nonaka, et al, 2000). Second, each conversion refers to one component of the SECI model and third; all conversions are essential to successfully create knowledge (Nonaka, et al, 1998).

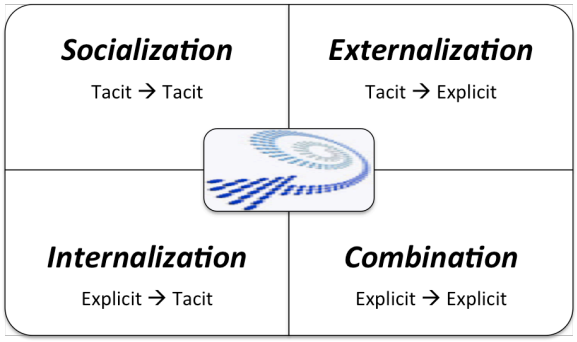


**Figure 1:** The SECI Model by Nonaka
Source: Nonaka, 1998: 674, adapted

The following definitions highlight the components of each knowledge conversion.

***Socialization*** converges tacit knowledge to tacit knowledge, describing a process in which tacit knowledge is shared between individuals (Nonaka & Takeuchi, 1995; Nonaka, et al, 1998; Nonaka, et al, 2000). This sharing develops the ability to understand a different perspective and formalization appears to be difficult (Nonaka, et al, 1998; Nonaka, et al, 2000). Nonaka and Takeuchi (1995) point out, that this form of knowledge creation is limited and mainly appears in apprenticeships by a hands-on experience (Nonaka, et al, 2000).

***Externalization*** articulates tacit knowledge into explicit knowledge, proceeding towards users with the ability to share and gain new knowledge (Nonaka, et al, 1998; Nonaka, et al, 2000). The knowledge transformation is an important aspect in the activity field of creating, innovating and developing products (Nonaka & Takeuchi, 1995; Nonaka, et al, 2000). A successful process combines metaphors and models sequentially (Nonaka, et al, 2000).

Defining ***combination***, explicit knowledge is converged towards more complex explicit knowledge (Nonaka, et al, 1998; Nonaka, et al, 2000). The key is the collection of internal or external knowledge, which is transferred into new knowledge to distribute the new explicit knowledge within the organization (Nonaka, et al, 2000). Nonaka & Takeuchi (1995) point out that the existing knowledge base mainly remains the same level.

***Internalization*** illustrates, the process of explicit knowledge into tacit knowledge (Nonaka, et al, 2000). An organization focuses on learning by doing, simulations or training programs for their employees to forward new knowledge (Nonaka, et al, 1998; Nonaka, et al, 2000). A process of learning, extending and understanding is essential (Nonaka, et al, 2000).

The SECI model aims to increase and reuse the level of knowledge within the organizations' intellectual assets. Essentially, the individuals, the organization as well as the organizations' strategy need to link the objective of the organization to ensure a successful knowledge management system.

As presented, the more (individual) knowledge within the organizational knowledge management system is shared, the higher the value towards the organization (Nonaka & Takeuchi, 1995). Gunasekaran and Ngai (2007: 2933) stated, *"Knowledge management is a business process."* The process includes a continuous creation, sharing as well as distribution of existing and new knowledge within the organization (Alavi and Leidner, 2001). Bearing this in mind, the process appears to be as critical to an organizations' success as any other organizational process (Inkpen and Dinur, 1998).

Nonaka and Takeuchi (1995) highlighted, that only the conversion of tacit knowledge into explicit knowledge and the sharing of knowledge contributes to value creation. But organizations face difficulties within this conversion of knowledge. To overcome the situation, a clear structure and objective of the implemented knowledge management system in an organization is necessary, to focus on an effective usage of information instead of capturing and storing information (Demarest, 1997; Lubit, 2001). Nonaka´s SECI model is seen as a spiral process to successfully create knowledge (Nonaka, 1994; Nonaka, et al, 1998), in which each component is highly linked with other components. The spiral of the model focuses on a continuous exchange and a knowledge transformation process (Nonaka, et al, 1998). Nonaka (et al, 1998) stresses that explicit knowledge appears to be public knowledge, available to competitors, which limits the base to achieve a sustainable competitive advantage.

All in all, it is essential to overcome a limited knowledge result within the process of operations and organizations explicitly need to focus on the right implementation process of KM. As knowledge is a critical factor towards success, the way of knowledge creation and sharing can successfully lead towards higher efficiency, increased productivity or growth of return on investment.

### 2.2 Organizational Intelligence

The concept of organizational intelligence (OI) correlates with the concept of KM to sustain a certain market position and ensure continuous growth in a globalized world in which the creation, gathering, exchanging and transformation of information is fundamental. The framework of OI appears to be a concept based on a long history, which grounds the context of an intelligent organization on the first proposed introduction by Wilensky (1967).

The framework introduced by Wilensky includes the combination of gathering, processing and communicating – technical and political – information, used in the process of decision-making in any environment (Wilensky, 1967). Even though more then forty years passed

since the first proposed concept, various researchers spend intensive time and effort to create a generally accepted definition, by now still in need to be defined. The term now generally includes adjustments such as being an important index for organizations to evaluate their environmental competitiveness, the capacity as a whole, the process of sharing and integrating information or the adaptation of an organization to the demand of the environment.

Choo (1995) specified, OI is explained as a process of learning, which includes the development of adaptive behavior; while McMaster (1996) defined OI as the capacity of a whole organization in gathering information, innovation, and generation of knowledge as well as effective actions based on generated knowledge. Liebowitz (2000) communicates OI as a set of all intelligibilities of an organization, applied to encourage organizational learning. Perkins (2003) describes the combination of intelligence within groups, teams, organizations or communities as the concerns of OI and Cronquist (2006) states, that OI contains the selection of the right information to encourage actions and innovations conceding the broad range of the entire company aspects.

*Table 1* summarizes the definitions of OI, considered as the most suitable definitions within the presented study. The contribution of Halal (1998) towards the perspective of an Organizational Intelligence Quotient (OIQ), as well as the seven dimensions / traits by Albrecht (2002) are included with a more recent perception.

| Author / Researcher | Organizational Intelligence Definitions |
|---|---|
| **Albrecht, Karl** | Albrecht (2002) defines OI as a capacity within any type of organization to activate the total brainpower and to center the given brain power to accomplish the mission. The definition also includes seven dimensions: 1 – Strategic Vision, 2 – Shared Fate, 3 – Appetite for Change, 4 – Heart, 5 – Alignment and Congruence, 6 – Knowledge Deployment and 7 – Performance Pressure. |
| **Halal, William E.** | Halal (1998) defines OI as the capacity of a company to create knowledge with the objective for a strategic adaptation within the given environment. Additionally, OI is comparable – as well as measurable – to Intelligence Quotient (IQ), while based on an organizational perspective named as Organizational Intelligence Quotient (OIQ). |
| **Schwaninger, Markus** | Schwaninger (2001) states that intelligent organizations are grounded on the ability to 1) adapt, 2) to effect and form their environment, 3) to determine a new surrounding or to transform within the environment and 4) to positively concur to the functionability and progression within the overall whole. The definition and system is enhanced through 1) the Model of Systemic Control (MSC), 2) the Viable System Model (VSM) and 3) the Team Syntegrity Model (TSM). |
| **Yolles, Maurice** | Yolles (2005) relates the theory of OI with the organization and to individuals. The researcher states that OI is an extension of ideas of knowledge, which is the center of operations. This includes actors (single or plural) to distinguish, associate, exert and adapt cultural knowledge based on the intelligence to identify this knowledge in a phenomenal environment. |

**Table 1:** Definitions of Organizational Intelligence
Source: Own creation

As pointed out, the first steps of OI are based on Wilensky's work in the 1960´s, while in 1978 the government of Venezuela took the first reported step in the world by creating a department named the Ministry for the Development of Human Intelligence, to revolutionize the entire life experience to benefit the population and country (Albrecht, 2002).
In today's world the buzzword "globalization" appears to be omnipresent, forcing a different perspective towards the concept of OI. Due to economical and environmental changes a basic definition seems unrealistic. Since the 20th century and the boom of the Internet, markets rapidly change, competition appears all over the world, cycles of technological innovations decline, information appears to be available anytime and anywhere, while cultural, social and political environments dramatically change (Kirn, 1995). These circumstances are essential to provide organizations with an environmental understanding, to force intelligent operations.
The following chapter defines – based on Halal – the characterization of an organizational intelligence quotient for an organization. The approach towards OI with the concepts seven dimensions / traits is described in *sub-chapter 2.1.2*.

### 2.2.1 Intelligent Quotient and Organizational Intelligent Quotient

Currently the management approach of OI appears to achieve a high level of recognition and importance due to the systematic process of a changing environment. The human capital of an organization, or in other words their intelligence, ensures success or failure of an organization. To support the intelligence level, organizations are in need of a network system or infrastructure, which enables communication, exchange and reaction.
Matsuda (1992) indicated that an intelligent organization is able to solve problems within the organization, which converges with Stalinski´s (2004: 58) statement of *"... any system's ability to engage in information transfer with its internal and external environments in order to maintain stability, adapt, and grow."* Cronquist (2006) believes that intelligence is a linkage of selecting and addressing attention to specific information and occurrences which provide the highest level of importance towards organizations. Adaptation, learning, development as well as (self-) transformation are the key words of an intelligent organization based on Schwaninger (2003). In Halal´s (1998) perspective, the essential part of OI is cooperation. Based on this fact, he states that knowledge can only increase through sharing, which leads to cooperating in an economically efficient manner (Halal, 1998). Finally, Yolles (2005: 113) proposes *"... the idea of the intelligent organisation links intimately with that of the learning organisation."*

Not only intelligent organizations can be defined, the researchers propose definitions regarding organizations, distinguished as not intelligent. A failure in intelligence is *"... an inability to muster the information or knowledge needed for the successful pursuit of organizational goals."* (Fincher, 1978: 190). A problem of OI is, that organizations take the operating environment for granted and based on this circumstance a crisis has to occur for them to react (Cronquist, 2006).

Albrecht, the main contributor towards OI within this research paper stated – based on his personal working experience – Albrecht´s Law. Albrecht (2002: 4) refers that *"Intelligent people, when assembled into an organization, will tend toward collective stupidity."* He underlines his statement with the fact, that the occurrence is optional and appears to be accepted by intelligent people, while leaders tend to accede the mentioned occurrence (Albrecht, 2002). As presented, it appears that intelligent as well as unintelligent organizations operate in a globalized world. This emerges to the question how to define or measure intelligence in an organization?

Halal (1998) intended to measure OI on a similar base as measuring human intelligence. In fact, he named it "Organizational Intelligence Quotient (OIQ)", in which the mean of OIQ is at 100 (Halal, 1998). Based on this mean, any organization scoring lower then 100 represents a low intelligence, whereas a score above presents a more intelligent organization (Halal, 1998). An essential judgment within this description is *"A higher OIQ doesn't necessarily improve performance, any more than a high IQ ensures success in life. Rather, it's the fit between OIQ and environment that determines performance.*" (Halal, 1998: 21). This judgment is underlined by Albrecht (2002: 43) who states *"We don´t need to compute a single, numerical IQ score, or rate organizations in percentile categories, in order to make good use of the concept of OI.*" The concept of OI refers to organizations' effectiveness and possibility to ensure the expenditure of possibilities (Albrecht, 2002). Continuously, a distinguished perspective of the Intelligent Quotient (IQ) and Organizational IQ is based on the comparison of Halal (1998) *(see table 2)*.

| *Function* | *Humans* | *Organizations* |
|---|---|---|
| **Measurement** | Intelligence Quotient (IQ) | Organizational IQ |
| **Information Technology** | Personal IT Systems | Organizational IT Systems |
| **Structure** | Network of Nerve Cells | Network of Business Cells |
| **Subjective Filter** | Personal Values & Beliefs | Organizational Culture |
| **External Linkage** | Social Relations | Stakeholder Relations |
| **Knowledge Store** | Memory | Knowledge Management |
| **Strategy Formation** | Problem-Solving | Strategic Process |
| **Direction** | Ego | Leader |
| **Guidance** | Vision | Mission |
| **Decision-Making** | Choice | Strategy |
| **Covert System** | Id | Information Organization |
| **Routine Decisions** | Autonomous Nervous System | Policies & Procedures |
| **Knowledge Gain (Single-Loop Learning)** | Education & Action | Training & Action |
| **System Improvement (Double-Loop Learning)** | Personal Change | Organizational Culture |

**Table 2:** Comparison between Human and Organizational Intelligence
Source: Halal, 1998: 21, adapted

In Halal´s (1998) perspective, the behavior of organizations is cognitive and without a direct impact of Information Technology. Consequently Halal (1998) grounded OI on five cognitive subsystems, which receive support from the implemented information infrastructure. These subsystems include: organizational structure, organizational culture, stakeholder relationship, knowledge management and strategic process (Halal, 1998). Integrating their combined operation in an organization, the main objective commits to the creation of OI (Halal, 1998).
Importantly all subsystems are equally crucial to the success of an organization (Halal, 1998). In detail, Halal (1998) defines organizational structure as the way of decision making based on the achievement to use the employees' knowledge; as organizational culture refers to an organizations` values and beliefs, which guide their process of decision making; while stakeholder relationship defines the development of information exchange through various groups to pursue (Halal, 1998: 23) *"... the vital flow of valuable ideas."* Halal (1998) describes that KM refers to the different types and volume of generated knowledge, while the strategic processes provide an understanding and reaction, in which these subsystems can be seen as *"... the "engine" that drives problem-solving and adaptation to the environment."* (Halal, 1998: 23). In conclusion, organizations learn better through action than through training, a restructured subsystem improves the level of OIQ and sharing of knowledge increases the level of knowledge (Halal, 1998).

Intelligent organizations are able to increase their potential for growth, to sustain market share and gain a competitive advantage when comparing their level of intelligence with the competitors' level of intelligence. To deeper understand the concept, Albrecht designed seven dimensions, which at the same time represent a trait to underline the concept of OI – presented in the following chapter.

### 2.2.2 Organizational Intelligence seven dimensions

Albrecht (2002) characterized that; OI is shaped by the key dynamics of an organization, such as *"... informal customs, rules, and habits."* (Albrecht, 2002: 20), known as internal settings to characterize and guide the way. He also states *"These are the codes of both intelligence and stupidity, of success and failure.*" (Albrecht, 2002: 20).

The seven dimensions of Albrecht´s OI framework, a concept with reference in various papers (e.g. Stalinski, 2004; Mooghali, et al, 2008; Bakhshian, et al, 2011; Zarbakhsh, et al, 2011; Shahabi, et al, 2012; Nasiri, et al, 2013) provides a deeper understanding of the concept. *Figure 2* highlights the seven dimensions, which refer to the intelligence, or competence organizations possess or lack and their contribution towards OI (Albrecht, 2002). Albrecht (2002) explicitly emphasizes that each dimension is at the same point a trait, caused by various antecedents. These various antecedents are defined in e.g. as competent leadership, clear goals or suiting products and processes based on marketplace demands (Albrecht, 2002). The following step analysis and explains each dimension and identifies Albrecht's (2002: 44) *"... various antecedents which can contribute to maximizing that element of intelligence."*

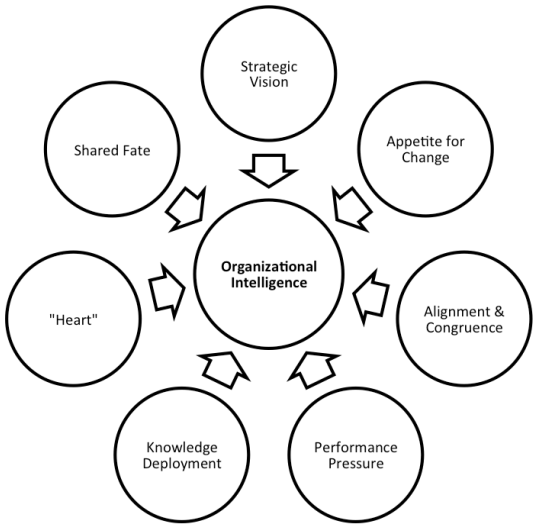


**Figure 2:** The seven dimensions and traits by Albrecht
Source: Albrecht, 2002: 44, adapted

***Strategic vision*** refers to a theoretical approach in which an enterprise sets up a concept, identifies organizational goals and creates a destiny of operation (Albrecht, 2002). In reference to Albrecht (2002), no particular concept of vision, strategy or mission is requested; instead the core existence of the organization should be highlighted with an option of reinvention / adjustment when in need.

The dimension of ***shared fate***, involves all or most of the people, who are in some way linked to the enterprise and know the objective of the organization as well as their own position to successfully contribute towards achieving the vision (Albrecht, 2002). Shared fate aims to create a sense of belonging and ability of personal contribution (Albrecht, 2002). A lack of vision or concept minimizes an individuals' contribution towards the organization's aim in achieving success (Albrecht, 2002).

***Appetite for change*** refers to organizations and teams, where with time an organizational culture is created in which individuals reach a familiarity with their environment, leading to the result that change can bring negative outcomes (Albrecht, 2002). Positively, change refers to challenges, chances, opportunities or inventions to enhance the success (Albrecht, 2002).

The element of ***heart*** indicates the individual contribution to outperform above the basic / general level of contribution (Albrecht, 2002). A low level of heart is linked with the provision of a minimum level of work, while outperforming employees *"... identify their success with the success of the enterprise and because they want it to succeed."* (Albrecht, 2002: 46).

The dimension of ***alignment and congruence***, considers rules to operate, guidance, job descriptions and definitions as well as responsibilities as an essential point for successful interacting within a given environment (Albrecht, 2002). Oppositely, unclear goals, structures or processes can cause internal problems and require adjustments for mission achievement (Albrecht, 2002). A low level of structural contradiction appears within intelligent organizations and the focus is directed towards individual energies aiming for the overall purpose of the enterprise (Albrecht, 2002).

The dimension of ***knowledge deployment*** is based on an organizations' need to effectively use knowledge, mainly the intellectual and informational resources should be distributed in a continuous level (Albrecht, 2002). When effective, intelligent organizations provide support, forcing the creation of new ideas based on an internal open-minded culture (Albrecht, 2002).

Operating as an intelligent organization, the entire workforce owns a certain level of ***performance pressure*** (Albrecht, 2002). The highest impact of performance pressure is

achieved, when all organizational members accept the performance pressure and see the challenge of a shared success (Albrecht, 2002).

These seven dimensions highlight the importance that all members of an organization, their sharing of information and their ability to solve problems together is essential for an organizational success. Implementing the importance to act intelligent, organizations aim to focus their abilities on their operational environment. The continuous flow of information and communication is essential.

As a loss of intelligence appears within the environment of operations, Albrecht (2002) characterizes between entropy and syntropy, when describing a loss or creation of intelligence. Entropy refers to the loss or waste of brainpower and energy within an organization, described as an internal tax (Albrecht, 2002). Appearing to be accepted throughout all organizational levels, the internal tax is named stupidity (Albrecht, 2002). To reduce the internal tax, organizations need to align their operations within the environment to improve the level of efficiency and effectiveness (Albrecht, 2002). Oppositely syntropy represents the capturing of people and their ideas, resources and sufficient systems enhanced by efficient leadership to create OI (Albrecht, 2002). So, syntropy stands for OI based on applying an intelligent effort towards the organizations' objective (Albrecht, 2002).

In sum, the intelligence of organizations is based on the level and creation of knowledge, to successfully operate within the environment. Intelligent organizations minimize the loss of intelligence and capture their knowledge to sustain their market position and achieve a competitive advantage. The following framework of competitive intelligence aligns the combination of KM and OI towards the contribution of value within an organization.

### 2.3 Competitive Intelligence

The concept of competitive intelligence (CI) is based on the previously presented concepts of KM and OI. As presented, these concepts focus on the abilities of an organization to act, detect and react towards predicted and unpredicted circumstances, based on effective knowledge creation, information sharing and transformation.

Various researchers and organizations stated definitions with the essential points of CI. The Strategic and Competitive Intelligence Professionals (SCIP) specified that *"Competitive intelligence is the systematic and ethical process of gathering, analyzing, and managing information that can impact an organization´s operations and plans."* (2008: 17). Fuld & Company see CI as a function *"... that serves to track and analyze the competition, provide*

*early warning to management, as well as report to management on both opportunities and threats, both tactical and strategic. It is a function that delivers analyses and conducts strategic exercises such as war games and longer term scenario assessments."* (2013: 2).

Besides the associations and organizations various individual researchers provide definitions regarding the CI framework. Various papers (e.g. Jiménez-Jiménez & Sanz-Valle, 2011; Nasri, 2011; Oubrich, 2011; Tuan, 2013) refer to the contribution of Garvin (1993), Calof and Skinner (1999), Vedder and Guynes (2002), Barson (2002), Dishman and Calof (2008) and Calof and Wright (2008).

Garvin (1993) stated that CI and respectively the objective in achieving a competitive advantage are related with organizational learning, an aspect beforehand emphasized in the concepts of KM and OI. Calof and Skinner (1999) comply with the statement of Garvin, perceiving that CI is created within successful KM, to achieve an overall organizational success and that the concepts directly hinge to prevent a loss of information and a reduced competitive advantage. Vedder and Guynes (2002), and Barson (2002) researched, that CI is important when referring to business planning, as the concept conveys information regarding current and future activities of an organization's competitors, as well as information about the business environment. Dishman and Calof (2008) stated that CI is a fundamental aspect and an essential contributor for an organization's strategic decision-making process. Organizational processes must possess the available environmental information's (Dishman and Calof, 2008). Calof and Wright (2008) as well as Dishman and Calof (2008) state, that the objective of sustaining and enhancing competitive advantage is a progressing process and a core essence in the development and implementation of a business strategy.

Based on the various contributions, the core intention of a successful CI is to achieve a superior understanding of the different types of stakeholder perceptions to seek for possible future opportunities, resulting in a sustainable competitive advantage. Langabeer indicated *"… the key goal of competitive intelligence is to proactively discover things which could help the organization vastly differentiate its performance from others in the industry."* (1998: 56).

A core question arises when thinking about CI: why is CI an essential contributor towards an organization's success? This question is directly linked with the importance of KM and OI. As presented, the globalized world effects an organizations' operation. The outcome of this globalization is that in e.g. customers and all types of stakeholders possess information anywhere and anytime, or the technological improvements force organizations to continuously rethink, restructure and redefine their way of operations to face the endless competition within their operating environment. These circumstances influence organizations

to gather, posses and distribute information to in e.g. successfully implement a strategy in their operations process. Additionally, the information and data, collected within the field of CI, refers to the collection of free and available public data.

In an explicit perspective, Vedder (et al, 1999) distinguished CI into both, a process and a product. The process perspective focuses on the methods within the usage of information to achieve global success (Vedder, et al, 1999); while referring to a product the *"... scope is the present and future behavior of competitors, suppliers, customers, technologies, acquisitions, markets, products and services, and the general business environment."* (Vedder, et al, 1999: 109). This perspective, even-though a minor distinguished, underlines the importance of CI as a source of information regarding the business environment of organizations.

Holistically, the concept of CI is grounded on how organizations manage knowledge, distribute and organize their intelligence level to achieve the overall goal of CI, which is the creation of competitive advantage. The concept of value management and the specific methodology of return on investment in the following chapter, measures these achievements.

## 2.4 Value Management / Return on Investment

The previously presented concepts in the literature review are the base for the implementation of value management (VM) and in specification, the measurement through the methodology of return on investment (ROI). To generate an understanding, the paper specifies the importance of project management, a basic definition of value, distinguishes between customer and organizational value perception, and concludes with the process of value creation in alignment with the framework of ROI to measure an organizational outcome.

***Project management***

An essential component to measure the achieved value of organizations is based on the contribution of project management (PM). The Project Management Institute (PMI) (2000), defined the objective of PM to generate new ideas, plan and organize the feasibility of a new initiated project, allocate resources, define risks and motivate resources to achieve a projects' target. Each project requests on one hand the investment of capital and human resources and on the other hand, the willingness to change an organizations' portfolio and / or processes to implement a projects' strategy. The PMI (2014) stated, that projects are a temporary topic with a defined start and end date, scope and resources; their contribution towards an organizational success is fundamental. PMI (2014) outlined that each project is unique and follows an objective to accomplish a specific goal, while PM is *"... the application of knowledge, skills and techniques to execute projects effectively and efficiently."* Project

results are aligned to specific business goals within the strategic competences of an organization (PMI, 2014) and follow the objective to achieve a competitive advantage within the operating environment. PMI (2014) detailed five components – initiating, planning, executing, monitoring and controlling, and closing –, which are essential within PM to ensure the focus on a project's goal, resources and schedule.

***Value management***

The theme value is a broad discussed topic within business literature. As value appears to be seen from various perspectives, the following question emerges *"For whom and to whom value is created?"* The paper stresses that creating value is the goal of an organization, while on the other hand; value refers to the buyer's willingness to pay (Porter, 1985). In a broader distinguished perception, Baier (1969) stresses that value is the overall capacity of any product or service, which results in the satisfaction of (specific) needs or the provision of a benefit towards a person or legal entity.

Commonly known definitions of value and in specification customer value, state the relationship between perceived benefits and sacrifices a customer contributes, to receive a product / service (Monroe, 1990; Woodruff & Gardial 1996; Flint, et al, 1997). Price paid, incurred costs or effort spent represent tangible and intangible sacrifices a customer takes to acquire a product or service. Oppositely Normann & Ramirez (1993) stated that the objective of an organization is not to create customer value, rather to provide a good or service with which customers create their own value.

Furthermore, value is created towards the broad range of stake- and shareholders of an organization. As the paper focuses on an organizational perspective, a different association with the term value develops, when compared to customer value. In organizations, the achieved performance / value is influenced by an organizations' objectives, as well as their type of market orientation (Jaworski & Kohli, 1993). Market share and sales growth are the measurements towards the evaluation of value and performance (Troilo, et al, 2009). Additionally, managers of organizations create value through the adjustment of resources into a set in which the ability is to undertake various assignments resulting in value and an increased efficiency (Lepak, et al, 2007). This type of effective resource management is linked with a higher productivity leading towards a greater value creation (Barney, 1991; Peteraf, 1993).

***Process of value creation***

Following the perspective of Barney (1991) and Peteraf (1993), the creation of value is a continuous strategic objective of an organization. But how can organizations create value? The author complies with the framework of Pereira (2013), who includes essential components within the creation of value: new businesses, customer retention, cross-selling and up-selling. Pereira (2013) stated, that new businesses stand for investments in new geographic areas or the introduction of new products, while customer retention focuses on increasing the average customer life cycle time. Pereira´s framework (2013) states that cross-selling represents selling different products to current customers and up-selling aims to increase the number of units of the same product to current customers.

When focusing on these four components to increase value, organizations are able to reduce costs and increase their efficiency (Pereira, 2013). Both results lead to increased value creation, which is measured with the methodology of ROI.

***Return on investment***

The methodology of ROI, the most common measure to evaluate a firm´s performance, measures in a simple way the relationship of a firm´s profits related to the asset investment to generate these profits (Schmidt, 2013). ROI is implemented to evaluate in e.g. projects, programs or capital acquisitions, in which a positive ratio or percentage indicates that the achieved results are favorable when compared with the costs (Schmidt, 2013). With the calculation of ROI, organizations know their ratio of expenses and receiving's, or if the returns are worth the investments / costs. These calculations provide organizations and specifically managers with information regarding proposed actions or business case scenarios, but lack information about uncertainty or risk (Schmidt, 2013).

When providing a detailed perception regarding the ROI methodology, the ROI Institute (2009) set up a framework *(see Appendix I)* with process steps and five corresponding levels to evaluate the result. The process steps include planning, data collection, data analysis and reporting, while the levels represent: level 1: relation and planned action; level 2: understanding and confidence; level 3: application and implementation; level 4: business impact and level 5: ROI (ROI Institute, 2009). The interactions of process steps and levels provide information to access the ratio or percentage of a specific situation. Referring to the ROI Institute (2009), the methodology and its process provide various advantages such as cost savings and margin increase, recognition of organizational strengths and weaknesses or the improvement of effectiveness and efficiency.

All in all, with VM organizations are able to define their perception of value and based

on the process of value creation, have the ability to generate value through various operations in e.g. through the implementation of projects. The methodology of ROI measures the achievements of projects and their contribution towards VM and classifies the ratio of profits and costs.

## 2.5 Process maturity

This chapter defines the terms business process management and business maturity to deeper understand the steps a project and or process undertakes to contribute towards the overall objective of value creation. The process steps are a fundamental component within the implementation of projects, to ensure a successful implementation as well as outcome. This in mind, different objectives are fundamental to ensure the success.

**Business process management**

The concept of business process management (BPM) is an essential component to understand the process flow throughout an organizations' structure and show how project components contribute towards a successful implementation. Gartner (2013) defined the principles of a process and effective BPM as *"... the discipline of managing processes (rather than tasks) as the means for improving business performance outcomes and operational agility. Processes span organizational boundaries, linking together people, information flows, systems and other assets to create and deliver value to customers and constituents."* The definition and this paper focus on the perspective of viewing BPM as a process and management discipline, not as a set of technologies. The BPM Institute (2013) established that the process life cycle for effective BPM, which complies with Gartner´s perspective, includes the following components: definition, development, deployment, execution, monitoring and measuring, and service and improvement. The BPM Institute (2013) underlines the importance that effective BPM relies on the skills of an organization, the implemented knowledge and measurement practices. The discipline of effective BPM is grounded on the alignment of an organizations' business process with the organizational strategy and result expectations, to achieve the objective of value creation (BPM Institute, 2013).

**Process maturity**

With the methodology of the Organizational Project Management Maturity Model (OPM3), organizations are able to identify their organizational level of project management within the different maturity levels. The Project Management Institute (PMI) (2003) stated that the essential need to implement OPM3, is to overcome the gap between organizational strategy and successful projects. To effectively apply the methodology, the following three basic

elements are essential: knowledge, assessment and improvement (PMI, 2003). The elements – in which knowledge refers to organizational project management, assessment refers to the methods of evaluating strengths and weaknesses, and improvement refers to guidance of not fully developed organizational capabilities – state that the assessment of an organization is driven by knowledge, which in return forces improvement (PMI, 2003). When indicating the maturity levels of the conceptual framework, PMI (2003) identified the following stages: 0 – Ad-hoc, 1 – Defined, 2 – Standardized, 3 – Measured, 4 – Controlled, and 5 – Continuous Improvement. Each stage *(see table 3)*, adapted from Silva (2013), provides a clear description of each level, adjusted towards the implemented case study in *chapter 5*.

| Level | Organizational Process Maturity Model | Example: Process Project Planning |
|---|---|---|
| **0 – Ad hoc** | Every employee does the tasks he performs based on his personal experience, perception and common sense. No consistent processes exist. | Checking a project plan and operating with different rules, described as an "Art" of doing. |
| **1 – Defined** | An organization sets up written rules, procedures, company manuals and models of how tasks should be accomplished. | Organization posses, in written form, a methodology how to develop common practices. |
| **2 – Standardized** | Tasks in an organization are performed equal to the defined procedures, in which the processes are linked with the procedures and different employees operate in an equal manner and common behavior. | All processes are performed according to rules and practices. |
| **3 – Measured** | Grounded on indicators – focusing on performance and compliance – the scope of processes is measured, comparing level 1 with level 2. | Implemented indicators towards cost performance measure the achievements and status. |
| **4 – Controlled** | A control chart – focusing on time and level – measures are inside defined boundaries. A process is under control when the achieved results are within the limits, oppositely, outside the limits results in no target control. | Through budget performance indicators the cost factor is controlled. Results inside the limits state controlled costs. |
| **5 – Continues Improvement** | With the collection of evidence, organizations identify the improving or overtime changes. | In a long-term perspective, projects and project time are improved, grounded on a higher control. |

**Table 3:** Organizational Project Maturity Model
Source: adapted from Silva (2013), own creation

Through the identification of each stage, an organization obtains the possibility to evolve towards a project-oriented organization, which applies processes and requirements to successfully achieve the projects' objectives (PMI, 2003; Silva, 2013).

Concluding, business process management and process maturity are essential to provide organizations with an understanding of their current structure and process flow, to allow the implementation of continuous improvement to enhance the performance.

# 3. Conceptual Reference Framework

This chapter aims to set the overall connotation between the theoretical frameworks achieved up to the moment, within the area of organizational intelligence. The research is performed as guidance towards the objective of the work and completes with a conceptual reference, to provide an understanding towards value creation.

Firstly, the definition of knowledge provides a ground concept to enhance a profound understanding of OI. Thus, the dimensions of explicit and tacit knowledge, as well as the process of knowledge creation, enabled the researcher to deeper analyze the concept of OI, bearing in mind the scope of this research. Secondly, the importance of intelligence supports an explanation to disclose the framework within the seven dimensions of OI. The CI concept wraps up the combination of the first two concepts and emphasizes the importance towards the process of value creation. Finally, the concept and process of VM and in specification the methodology of ROI, framed the theoretical contributions and emphasized the concepts' importance towards the measurement of organizational value.

As stated, the presented concepts correlate with each other to implement and support the value creation process. The creation of value and the outcome, the achievement of competitive advantage, is seen as the core objective in doing business in an organization, to ensure existence in the highly competitive environment. *Figure 3* expresses the organizational components within the process of value creation.

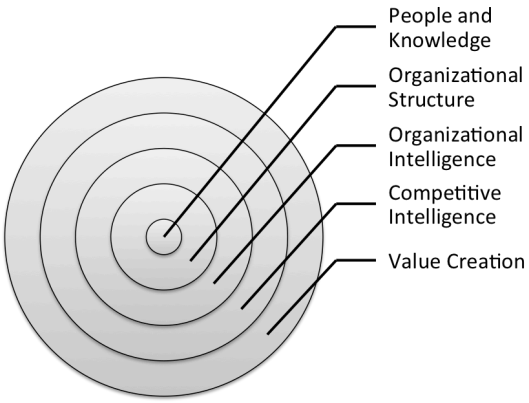


**Figure 3:** Organizational components
Source: own creation

The organizational components are systematically based on the employed workforce and their knowledge, as well as the organizational structure to contribute towards the intelligence of an organization. Consequently, an organizations' structure needs to be highly sophisticated, to

ensure the flow of information, the support towards employees, the maintaining and retaining of knowledge development and to encourage the process of communication throughout all organizational levels. The combination of these components grounds the generation of OI, a necessary step to achieve CI as an associated counterpart towards value creation. The arrangement of process reinvention and continuous improvement results in CI, the base to create value. The combination of these components is essential for an organization to ensure continuous growth and sustainable development.

Bearing the correlation of the components in mind, the question arises, if the creation of value is a random process or a predictable / explicit topic within an organizations' structure. The overall synopsis provides guidance towards the implemented case study, in which the presented methodologies process and contribute to the overall objective: value creation. Each methodology is grounded on several components *(fig. 4)*, describing each framework and highlighting the contribution towards the objective of predictability or not in value creation.

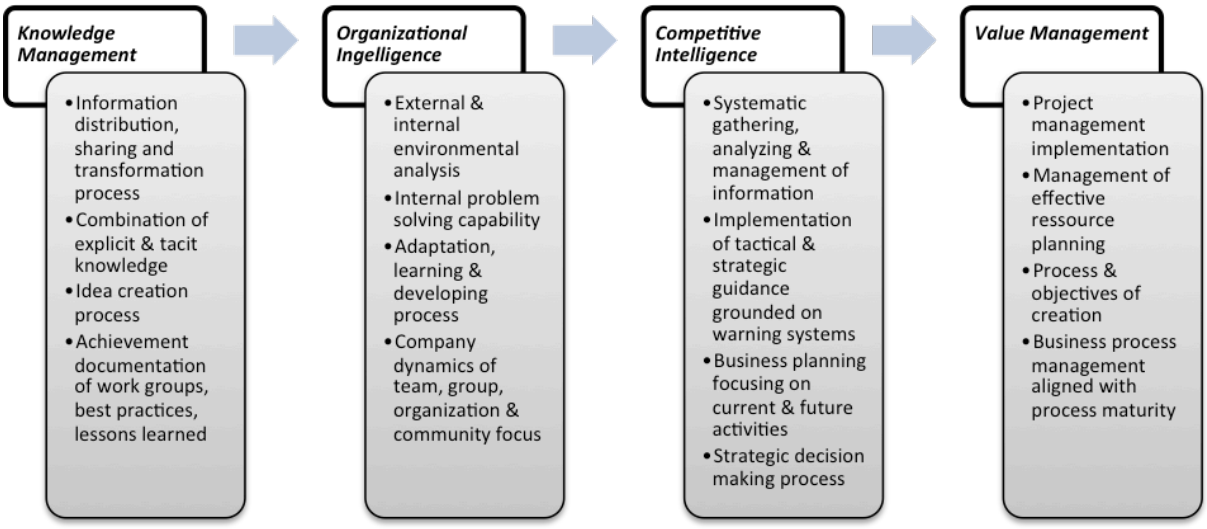


**Figure 4:** Methodology components
Source: own creation

All in all, each methodology with its components is part of the theoretical process to create value in an organization. To answer the research question and how value is perceived within an international airline, the subsequent chapter conducts a survey focusing on the airlines projects of the year 2014.

# 4. Methodology

Within this chapter, the hypotheses as well as the methodological type of research throughout the presented thesis is substantiated and contextualized. The author reveals all essential stages of achievement in detail. In addition, the core objective of the presented study is emphasized, to ensure the progress of goal achievement within the paper.

To comply with the previously disclosed research question, the study develops propositions regarding the relationship of organizational intelligence – based on the principals of Albrecht (2002) and Schwaninger (2001) – and value creation to justify the selected options within the presented processes. Conclusively, the theoretical framework behind the implementation of the specific organizational intelligence is emphasized and contextualized.

## 4.1 Hypotheses

From the presented literature research and the connection with an international aviation organization *(chapter 5.2)*, the selected propositions may be designed as research guidelines. Therefore, the following hypothesis intend to identify the implementation stage of literature concepts within the selected organization and explore future opportunities for implementation.

> **Hypothesis 1:** *The way of creating value in the selected company has a high level of uncertainty.*

Organizations are in need to define the perception of value and further there is an essential need to communicate the way of how value should be created within the company. Bearing this in mind, the research will observe the perception of value throughout people and projects.

> **Hypothesis 2:** *The discipline of Knowledge Management is not integrated and defined within the selected organization.*

Efficient knowledge management within the organizational structure is one of the fundamental principals to ensure an organizations' existence within the highly competitive environment. The presented research will analyze the maturity and implementation within the selected projects, through the application of the theory of knowledge management.

> **Hypothesis 3:** *The maturity levels of the processes within the organization explore a low maturity and a low definition.*

The implemented processes within the organizational structure set up well-defined standards and definitions regarding the internal settings and a clear guidance towards the employees in

charge. The presented research considers the process maturity throughout the company wide structure.

### 4.2 Case study approach

In this paper the implemented methodology approach, consists the usage of a case study approach to study ongoing projects in an international aviation organization based on the previously revealed research question. The type of selected research question emerges to comply with the objective of research across the case study approach (Yin, 2009).

Regarding case studies, Yin (2009) indicates the concern that they provide a *"(...) little basis for scientific generalization."* (p. 15), which correlates with the fact, that the presented observations are performed in an international aviation organization to investigate and illustrate a specific or selected circumstance to achieve a progressed apprehension according to Glynis (2005). Gerring (2004), Cousin (2005) and Easton (2010) consent with the proposition and underline a low (statistical) representativeness for each case to object that each case study or investigation stands on its own, based on data collection across various data sources leading to general description.

A general case study research definition by Easton (2010) states:

> *"Case research can therefore be defined as a research method that involves investigating one or a small number of social entities or situations about which data are collected using multiple sources of data and developing a holistic description through an iterative research process." (p. 119)*

#### 4.2.1 Case study characterization

An investigative approach is implemented in the presented study, based on the persistence of selecting and employing the OI framework to similarly selected projects in an international aviation service provider organization. Within the procedure of the thesis, the core principals of OI are studied to associate the results of value creation through project outcomes.

#### 4.2.2 Case study research method

Grounded on Yin´s (2003) definition, the presented case study is characterized as a multiple case study as it considers the observation of independent case studies, in which each one is an individual analysis.

### 4.2.3 Data collection

The considered data within this case study approach is obtained through the following process: a survey conducting the current implemented projects of the year 2014 in the diverge range of departments at TAP, with functional-, project- and executive managers, performed within the timeframe of 10th of February 2014 till 24th of March 2014.

Additionally, a pre-test phase was implemented within the timeframe of 15th of December 2013 to 20th of January 2014, to receive external feedback to set up the final survey.

### 4.2.4 Survey structure

Aiming to receive a deep understanding regarding the structure of projects implemented within the airline, the survey consists of four parts. In a first step, the personal characterization is questioned. Secondly, the participants are asked to insert the title of the project and enhance it with a brief project description. The third step questions the project characterization. The final fourth step requires per theoretical concept five questions. Apart from the project title and description, all further questions are closed questions with the possibility to select only one answer. Regarding the survey questions per theoretical concept, eight possible answers are given *(table 4)*:

| Answer # | Answer type |
|---|---|
| #1 | I don´t know. |
| #2 | No, the process does not exist. |
| #3 | Yes, the process exists in LEVEL "0 – Ad HOC" (Performance based on personal experience and common sense) |
| #4 | Yes, the process exists in LEVEL "1 – DEFINED" (Written rules, procedures, company manuals and models exist) |
| #5 | Yes, the process exists in LEVEL "2 – STANDARDIZED" (Tasks in a organization are performed equal to defined procedures) |
| #6 | Yes, the process exists in LEVEL "3 – MEASURED" (Indicators such as performance and compliance measure Level 1 & 2) |
| #7 | Yes, the process exists in LEVEL "4 – CONTROLLED" (Control charts focus on time and level, measures are inside the defined boundaries) |
| #8 | Yes, the process exists in LEVEL "5 – CONTINUOUS IMPROVEMENT" (Evidence is collected identifying improvements or overtime changes) |

**Table 4:** Possible answer options
Source: Own creation

In reference to the results presented in *chapter 5*, the columns are presented as in *table 5*:

| Answer type |
|---|
| I don´t know |
| No the process does not exist. |
| LEVEL "0 – AD HOC" |
| LEVEL "1 – DEFINED" |
| LEVEL "2 – STANDARDIZED" |
| LEVEL "3 – MEASURED" |
| LEVEL "4 – CONTROLLED |
| LEVEL "5 – CONTINUOUS IMPROVEMENT |

**Table 5:** Answer type of analyses
Source: Own creation

### 4.3 Orientation of research

As presented in *chapter two*, the rapidly changing and transforming globalized world is in an essential need to focus on knowledge, on leveraging the intelligence of an organization and to create value (Wilensky, 1967; Nonaka and Takeuchi, 1995; Halal, 1998; Albrecht, 2002). Since the first reported steps towards OI, the concept now faces a broad recognition throughout various segments within the economy.

The study pursues to answer the research question by the creation of a connection throughout the theoretical concepts, resulting in value creation within the context of an international aviation organization. Consequently, the creation of value, grounded on the components of new businesses, customer retention, cross-selling and up-selling (Pereira, 2013) seem suitable for an aviation organization, seen as holistic approach.

Therefore the ***key research objective*** is stated as followed: *analyze if the concept of organizational intelligence in an international aviation organization contributes towards value creation measured through the methodology of return on investment.*

# 5. Case study

The present chapter aims, based on the research question and the objectives highlighted in chapter four, to evaluate the value creation process and the perception of value within an international airline. Further, this chapter contains the researched and attained data, bearing in mind the scope of the thesis. Consequently, a brief description of the selected airline and the market conditions of the aviation industry is presented.

## 5.1. A presentation of the organization

As previously stated, an organization within the highly competitive global industry of air transportation is selected to conduct a case study analysis. This chapter presents the selected airline as well as the airlines organizational structure to deeper understand the process of project implementation and the objective to create value. Furthermore, an analysis of the aviation market, including a competitor division and market segmentation, provides an understanding towards the creation of value for the competing airlines.

### 5.1.1 Transportes Aéreos Portugueses

Transportes Aéreos Portugueses (TAP) is a medium size, 100% governmental owned Portuguese national airline, currently confronted with the process of privatization. Since the foundation in 1945, the airline now operates to 196 different destinations, transporting 10.2 million passengers per year and 83.7 thousand tons of cargo and mail from their center point in Lisbon (TAP, 2014). Even though the airline is connected with the "Star Alliance" network, TAP faces on one hand protection due to the ownership by the Portuguese government, but on the other hand, the ownership limits the abilities to individually compete within the highly competitive market of air transportation. In order to achieve a competitive advantage, the airline focuses on a broad product and service portfolio, a diverse price range, a high level of customization and quality standards (TAP, 2014).

### 5.1.2 Aviation industry analysis

Within the aviation industry, airlines mainly provide their service offer to two types of customers: business and leisure travellers. Therefore airlines characterize their offers based on different service and price levels. Based on this differentiated competition perspective, three types of competitors *(fig. 5)* appear in the industry of passenger transportation.


**Figure 5:** Competitor division
Source: own creation

Correlated with the differentiation by competitor type, the aviation market is segmented *(fig. 6)* into leading by cost, differentiation or market niches.

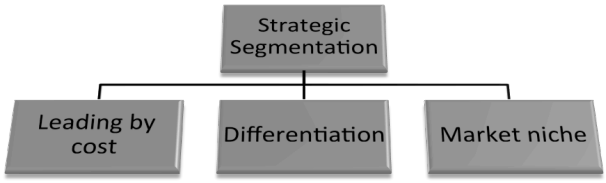


**Figure 6:** Market segmentation
Source: own creation

As presented, organizations focusing on cost leadership, offer low prices to track the customer base of their larger competitors and gain return on investment based on for e.g. high passenger utilization. The low price airlines therefore create an understanding on what service the customer's value as important within the transportation and limit their offer according to the specific needs, resulting in low prices. Airlines competing by differentiation, offer medium and high prices to mainly both type of customer segments in order to reach a wider customer base, which value for e.g. on board service or specific reservation conditions. Therefore, the airlines charge a higher price and create value through customer satisfaction or retention. The strategy for market niche is the least common strategy within the airline market, in which the airlines cut all other possibilities of segmentation and only focus on a specific market.

Through the three different segmentation strategies and the process of globalization, the base for low price airlines continuously increased, tracking the existing customer base of established airlines, resulting in a threat of reduced prices and increased costs. Meaning, that airlines are in need of competing within assorted price segments and a wide range of

competitors in order to sustain their level of market share, while facing operational and financial turnover effects. Besides the increased competition and price-cuttings, airlines face further threats through economic contraction, demographic changes or increased tax rates. On the other hand, new technological innovations, international agreements or strategic alliances provide positive aspects towards the large market of air transportation. Therefore, airlines are in need to differentiate from each other and offer a broader service such as cargo and mail transport, while enhancing the service and quality level of passenger transportation.

Due to the different strategic market and price segments in which airlines operate, a diverse value creation process and value perspective emerges. The value creation process within airlines leading by cost is mainly based on cross-selling and up-selling, in comparison to medium price and high price airlines. These airlines further focus on new business and customer retention. With focusing on cross-selling and up-selling low price airlines offer cheap flights with a minimum service level at a low price, while creating value through for e.g. market share, seat utilization or ROI. In comparison, medium and high price segmented airlines measure value for e.g. through customer satisfaction, customer recommendation or the offered quality level.

In order to deeper analyze the process and the perspectives within the selected airline TAP, a survey approach is implemented within the following chapter.

### 5.2 Analysis of the case study results

This chapter analysis the results accomplished throughout the survey. At first, the personal characterization of the participating employees is analyzed, followed by the titles of the currently implemented projects and completed with a characterization of the projects. The second step, analysis each question by emphasizing main causes and main consequences to provide a profounder understanding. The third step summarizes the results achieved throughout the survey, providing a total comparison of the maturity levels as well as a comparison of theory concepts.

#### 5.2.1 Analysis of personal characterization

The personal characterization identifies several personal characteristics of the participating employees, such as the internal position within the organizational structure, educational background, employment relationship with TAP and years of project responsibility.

Referring to the internal position within the organizational structure *(fig. 7)*, the employees in charge are mainly employed as Project Managers (72,7%) and Functional Managers (13,6%).

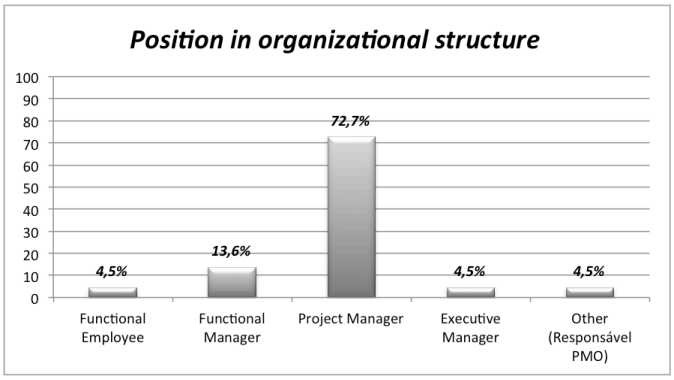


**Figure 7:** Position in organizational structure
Source: Own creation

Analysis of the highest educational background achieved, stated that the main degrees are Bachelor´s degree with 18,2% and Master´s degree with 72,7% *(fig. 8)*.

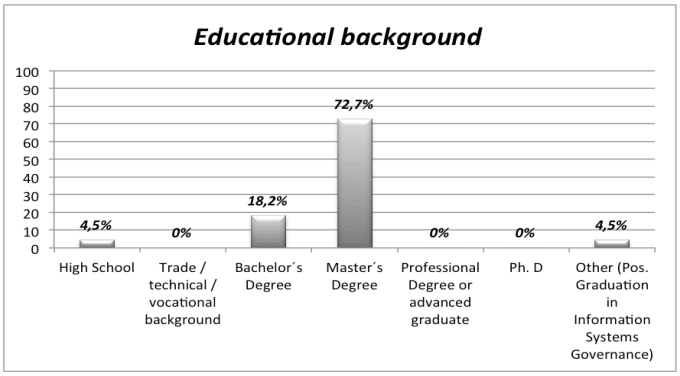


**Figure 8:** Educational background
Source: Own creation

Considering the duration of employment, the results state *(fig. 9)* that the employees are employed for a minimum of 2 – 5 years (18,2%), while particularly most employees exceed employment duration of 5 years (72,7%).

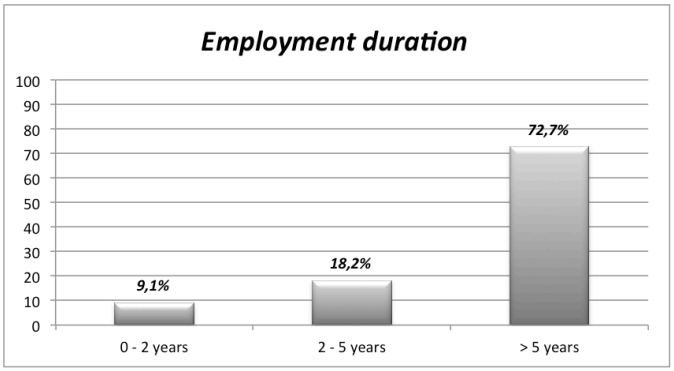


**Figure 9:** Employment duration
Source: Own creation

The final personal characterization questions the years of project responsibility, pointing-out that the employees in charge explore deep knowledge and experience. The responses *(fig. 10)* highlight a 4 – 5 year (22,7%) and further an above 5-year (45,5%) project responsibility.

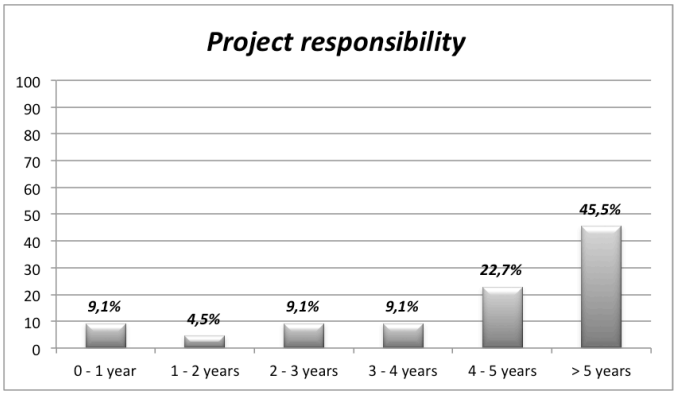


**Figure 10:** Project responsibility
Source: Own creation

An overall summary of the personal characterization *(fig. 11)* of the participating employees states the following results: the highest level of educational background is a Master´s degree (72,7% – *fig. 8*), positioned in the internal organizational structure as a Project Manager (72,7% – *fig. 7*), with an employment duration of above five years (72,7% – *fig. 9*) and delegated with project responsibility exceeding five years (45,5% – *fig. 10*).

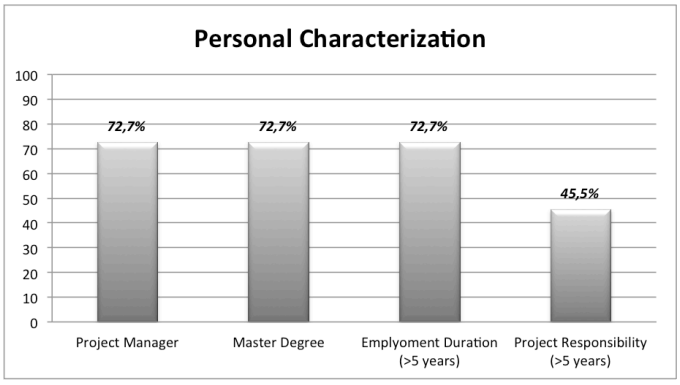


**Figure 11:** Personal Characterization
Source: Own creation

The analysis of the personal characteristics portray the organization with highly educated employees in charge of projects and a long commitment to work with the airline, an important indicator within the aviation industry and the economic conditions in the past years. Bearing this in mind, the employees leading projects established an experience level, which allows them to guide their subordinates and projects through various conditions, resulting in a high level achievement of the predicted and defined objectives.

### 5.2.2 Project titles

Within the year 2014 the managers and their project teams are in charge of the following projects *(table 6)*, which are the base of the survey and the following presented results.

| *Project #* | *Project title* |
|---|---|
| #1 | Migração de dados históricos do anterior sistema de Pessoal (SIIP) em SAP RH |
| #2 | Evolução plataforma tecnológica inform |
| #3 | Migracão da aplicação Hermes |
| #4 | GAP |
| #5 | TAP Mobile / Mobile Roadmap Sprint 6 |
| #6 | Migracão IBPMS Para God |
| #7 | Alojamento GSBIS TA |
| #8 | Novo Track and Trace |
| #9 | Lista de suspeitos |
| #10 | Smile delegações |
| #11 | Gestão de Desempenho para a Groundforce |
| #12 | Dead head crew - DHCS Flystaff 3.0 |
| #13 | Medical Care |
| #14 | HIL – Material request |
| #15 | Last 5 Years Experience in Project Management |
| #16 | Legacy Modernization |
| #17 | ARAMIS |
| #18 | TAP Mobile |
| #19 | GAP |
| #20 | SAP Migration |
| #21 | Business Analysis Office |
| #22 | Vou considerar o portefólio global |

**Table 6:** Project titles
Source: Own creation

### 5.2.3 Analysis of project characteristics

Several characteristics, such as project budget, number of employees in charge, project duration, project source and project objective are questioned within this chapter. The results are in reference to the previously presented projects of 2014.

With the identification of the project budget *(fig. 12)*, all estimated costs (from project initiation up to closing phase) of the currently running projects are summarized. The results state that the main projects are estimated with a project budget up to 50.000€ (45,5%), while several project implementations request a budget up to 250.000€ and remarking that 9,1% of the 2014 projects demand a total project budget above 500.000€.

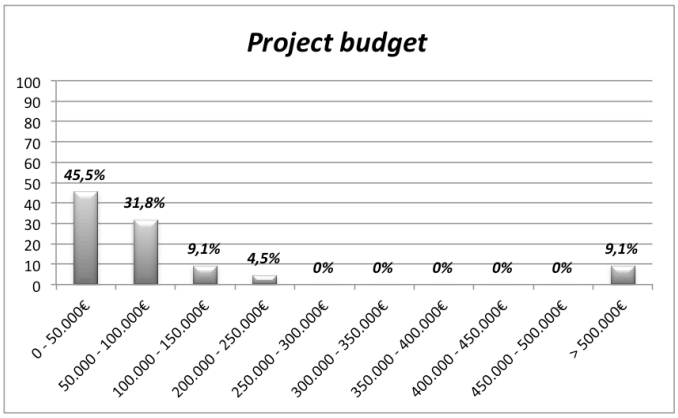


**Figure 12:** Project budget
Source: Own creation

More then 50% of the project teams (*fig. 13*) request a minimum manpower of 10 employees, while 27,3% of the projects are empowered with 10 – 15 employees, bearing in mind that 22,7% request more then 20 employees throughout the project duration.

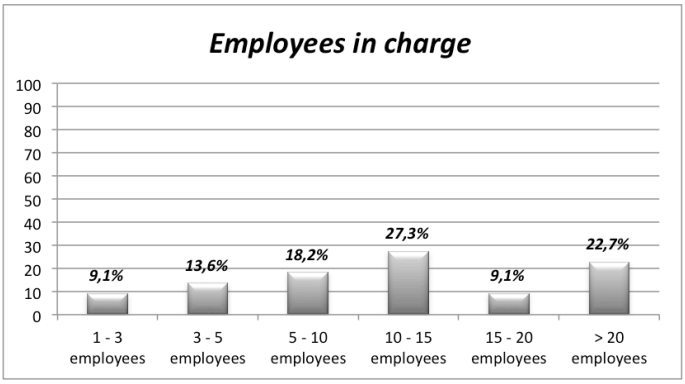


**Figure 13:** Employees in charge
Source: Own creation

The estimated project duration *(fig. 14)* of the currently running projects is primarily classified between 0 – 6 months (72,7%), while depending on the project type a duration of above 36 months (4,5%) for long-term projects is possible.

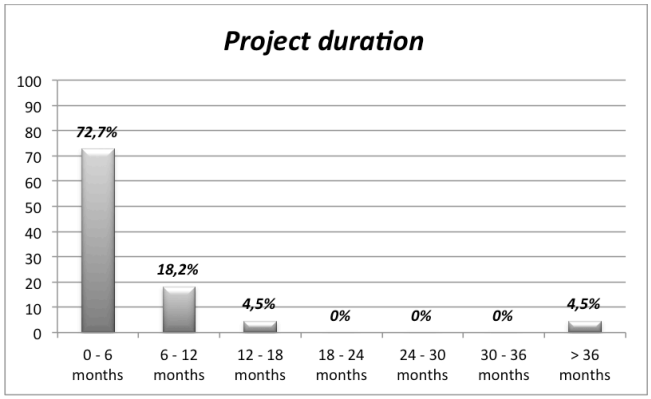


**Figure 14:** Project duration
Source: Own creation

Referring to the project source *(fig. 15)*, a first important identification is that 22,7% refer to customer complaints, requests or suggestions; while 27,3% of the sources refer to a new idea based on a previously implemented project or are an objective of a current management / strategy plan.

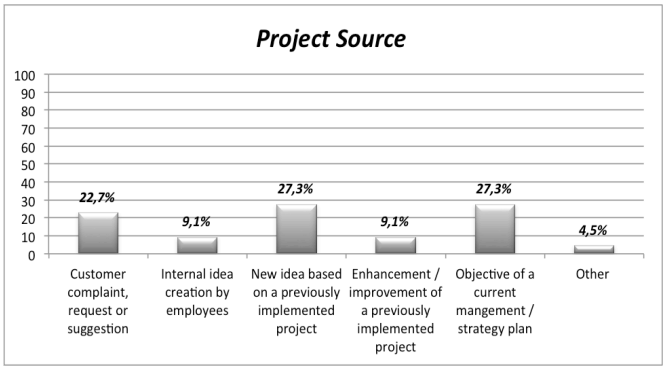


**Figure 15:** Project source
Source: Own creation

The projects objectives *(fig. 16)* are primarily driven by customer objectives (22,7%) and service objectives (31,8%). Additionally, 13,6% of the organizational objectives requests a share of above 10% of the currently running projects.

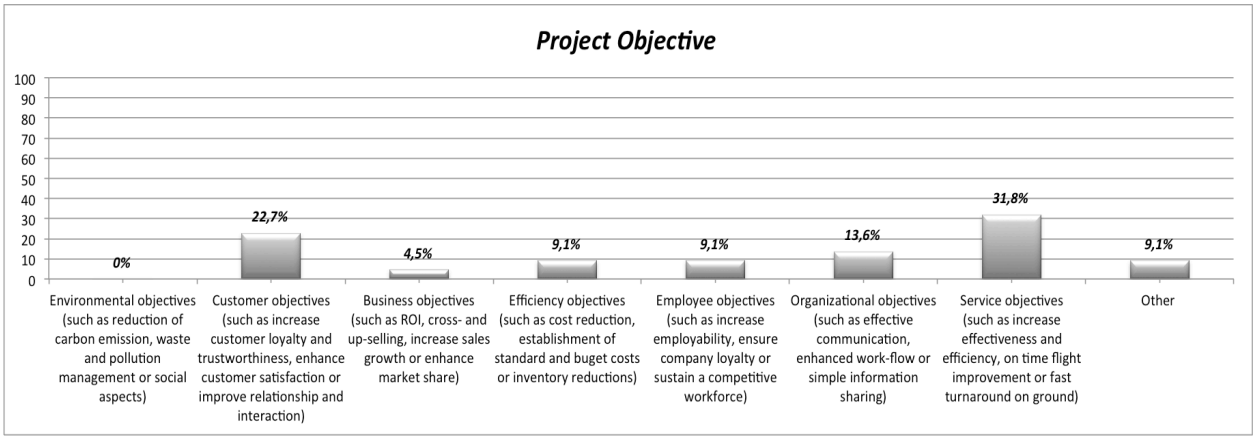


**Figure 16:** Project objectives
Source: Own creation

The overall project characterization *(fig. 17)* states the following results: an overall project budget estimation up to 50.000€ *(fig.12)* and a requested a manpower of 10 – 15 employees *(fig.15)*, within an assessed project duration of up to six months *(fig. 14)*. Additionally, a projects source is equally divided into two main sources, being a new idea based on a previously implemented project or the enhancement / improvement of a previously implemented project *(fig. 15)*. Completing the overall characterization, the projects main objectives are service objectives *(fig. 16)*, such as increasing effectiveness and efficiency or on time flight improvement.

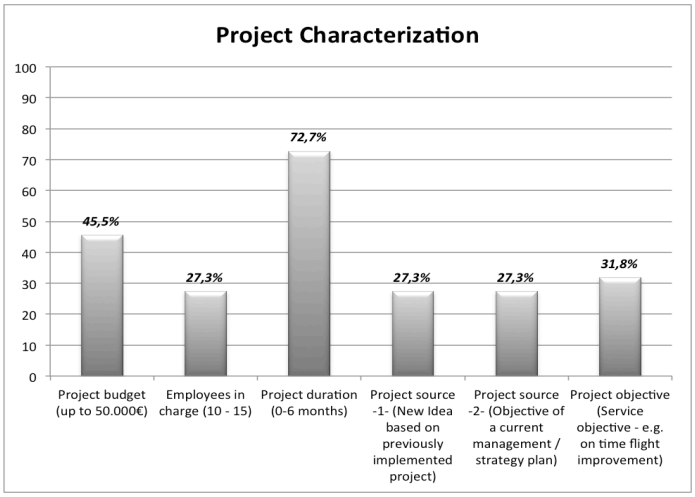


**Figure 17:** Project Characterization
Source: Own creation

With regards to the currently implemented projects, the presented personal and project characterization subsidizes the following results, enabling the author to deeper analyze the maturity levels in the field of project maturity management.

### 5.2.4 Analysis: Knowledge Management

***Question 11:*** The active transformation of tacit knowledge into explicit knowledge is caused through i.e. focus groups, best practices or company blogs, with the objective to create new ideas and concepts. The transformation process is classified with 63,6% in LEVEL 0 – AD HOC *(fig. 18)* and includes a slight clarification of LEVEL 1 – DEFINED. This states that the transformation process is mainly performed by personal experience and common sense. In consequence no standards regarding the information of tacit knowledge towards explicit knowledge exists.

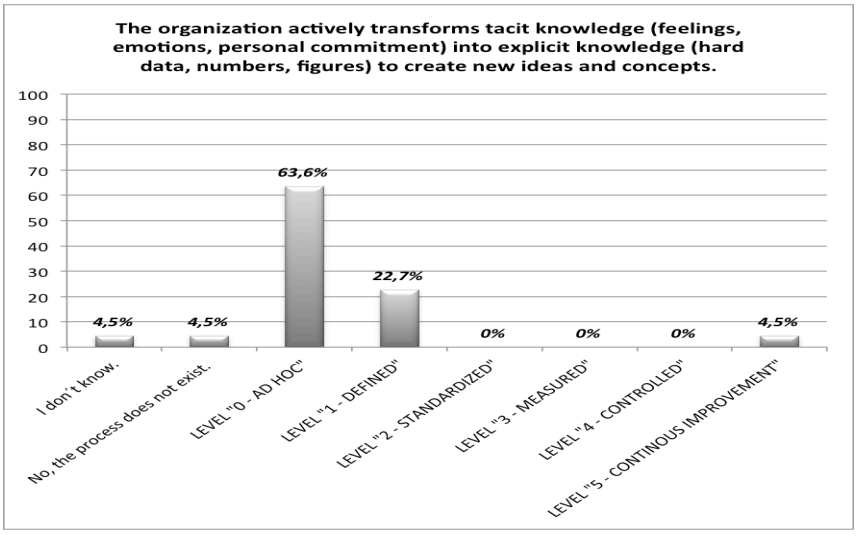


**Figure 18:** Question 11
Source: Own creation

***Question 12:*** Newly gained knowledge of employees is in need of distribution, sharing and transformation within the organizational processes to enhance the overall capabilities of the organization and employees. Within TAP, newly gained knowledge is processed within the organization based on personal experience, in LEVEL 0 – AD HOC (72,7% – *fig. 19*). A certain amount of employees identifies the processes in LEVEL 1 – DEFINED (18,2%), concluding a low impact towards the organizational structure and processes, as the overall perception focuses on processes based on common sense rather then on defined processes.

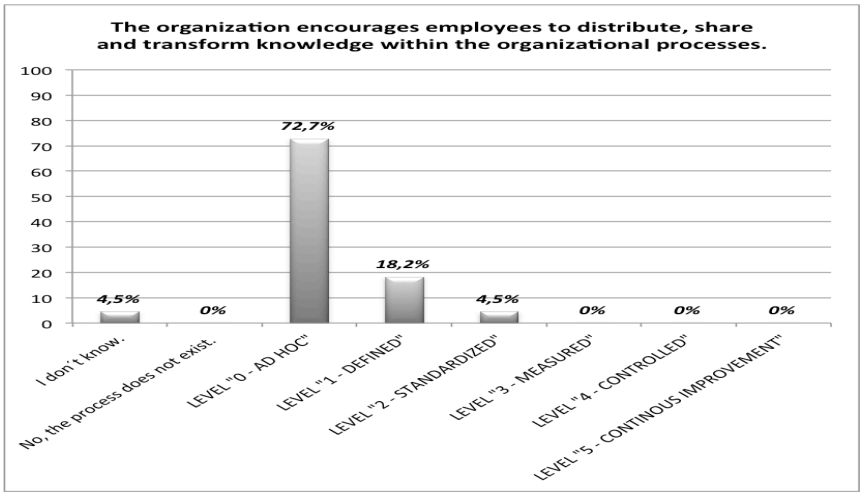


**Figure 19:** Question 12
Source: Own creation

***Question 13:*** The implementation of knowledge sharing systems – such as knowledge portals or the creation of knowledge clusters – improves organizational results and increases the level of customer retention. This type of knowledge sharing within TAP is classified with 81,8% in maturity LEVEL 0 – AD HOC *(fig. 20)*. In consequence, the process of knowledge sharing is not standardized and organization wide communicated, which affects the airlines' abilities to successfully compete in the global business environment.

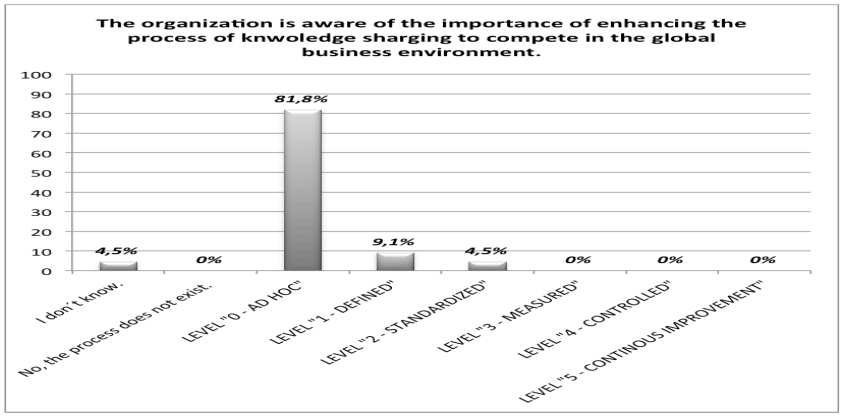


**Figure 20:** Question 13
Source: Own creation

***Question 14:*** Setting a team together with different knowledge backgrounds and experience, contributes towards a projects' success and enhances the implementation of i.e. a knowledge network. Leveraging knowledge during processes and projects through teamwork with various employees is classified in LEVEL 0 – AD HOC (86,4% – *fig. 21*). In consequence, project or process teams are set together based on personal experience and not on company manuals or models, which tends to exclude the participation of the right employee.

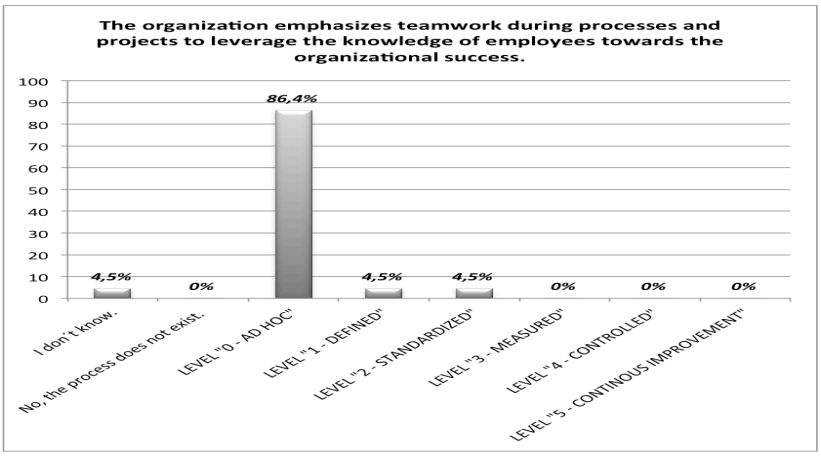


**Figure 21:** Question 14
Source: Own creation

***Question 15:*** With the implementation of rules and structures, such as lessons learned, best practices or evidence reviews, the possibility to achieve a higher outcome within future activities is given. The overall perception (63,6%) states the processes performed in LEVEL 0 – AD HOC *(fig. 22)*, surrounded by 13,6% in LEVEL 1 and 2. This leads to the consequence of a not clear perception regarding rules and structures and questions their existence of implementation with the organization.

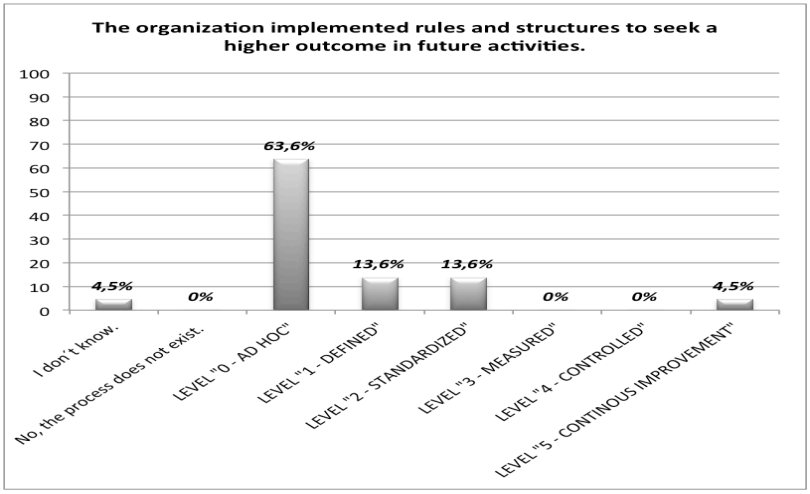


**Figure 22:** Question 15
Source: Own creation

### 5.2.5 Knowledge Management – overall perspective

The concept of KM, which is an essential contributor towards organizational success, focuses on an active sharing, transformation and distribution of knowledge to enhance the overall organizational results. In reference to the above results, the overall perspective of KM states that 73,62% classify the appearance in maturity LEVEL 0 – AD HOC *(fig. 23)*. This perception of the participants indicates the consequence of not defined, standardized or measured systems regarding the flow of knowledge within the airline.

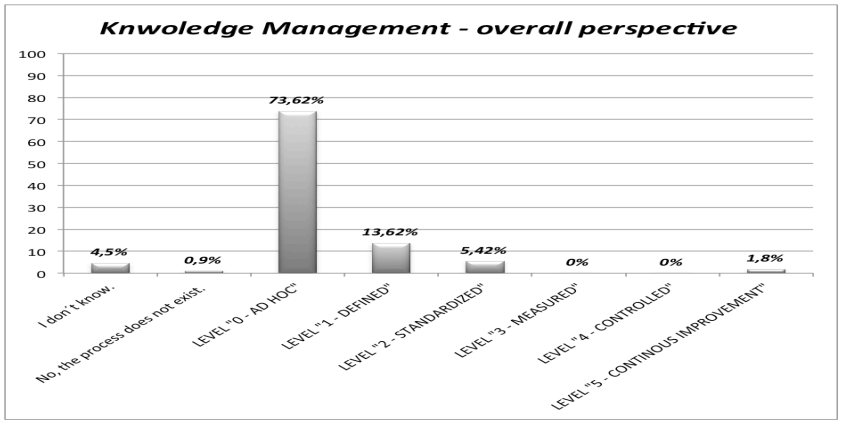


**Figure 23:** KM – overall perspective
Source: Own creation

### 5.2.6 Analysis: Organizational Intelligence

***Question 16:*** Improvement plans and goals for improvement provide employees and organizations with the possibility to continuously enhance their performance and minimize false actions. Classifying continuous improvement plans with 59,1% in LEVEL 1 – DEFINED *(fig. 24)*, results in the circumstance that the currently implemented improvement plans within the organization are not clearly developed nor efficiently communicated throughout all organizational levels.

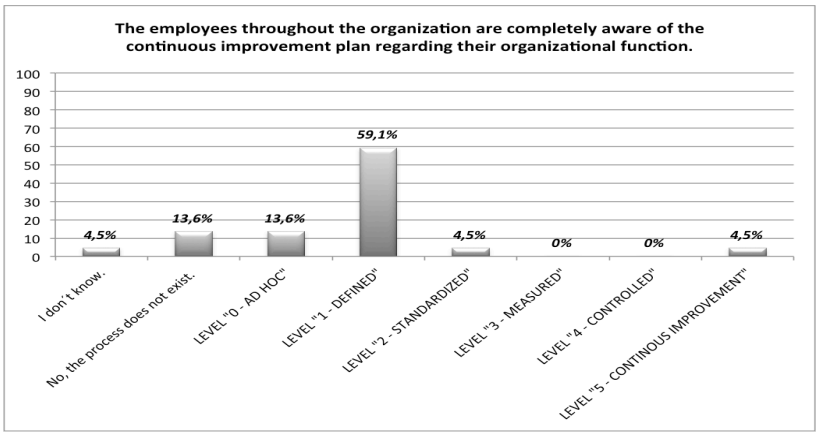


**Figure 24:** Question 16
Source: Own creation

***Question 17:*** In an organization with an open-minded culture and no cultural distinctions, employees experience a positive work climate, resulting in sharing knowledge and ideas. Performing such kind of culture, providing an overall support and encourage the creation of new ideas, the process existence is classified with 72,7% in LEVEL 0 – AD HOC *(fig. 25)*. In consequence, the culture in the departments is set individually and the support towards employees in not defined by written rules and procedures, which minimizes the support and the encouragement towards the creation of new ideas.

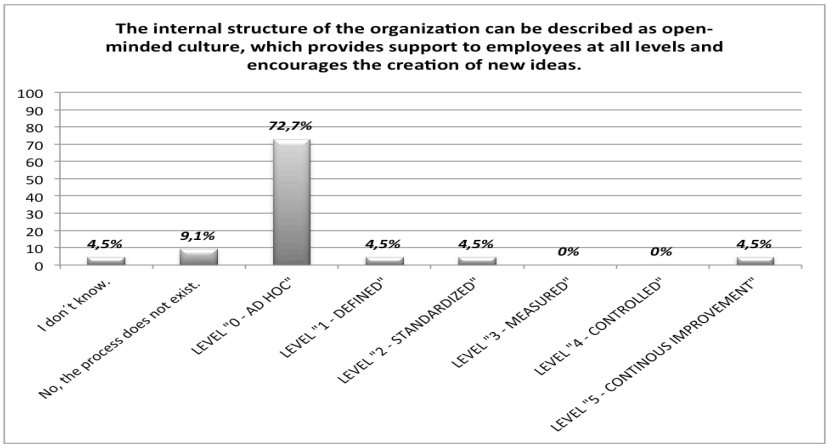


**Figure 25:** Question 17
Source: Own creation

***Question 18:*** A learning organization provides explicit feedback (between teams), cross feedback (between areas) and cross training (between units) in a regular base to improve the contribution towards work. This type of learning organization either does not exist (18,2%) or the process is performed in LEVEL 0 – AD HOC (72,7% – *fig. 26*). With reference to a learning organization, this result means no written rules, defined procedures, measures or control charts to ensure the process of a learning organization are set up.

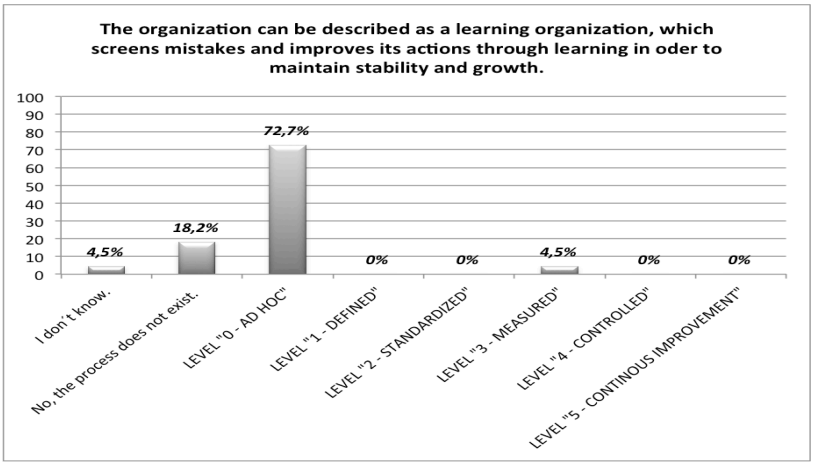


**Figure 26:** Question 18
Source: Own creation

***Question 19:*** A clear, well-defined and communicated mission and vision statement provides an understanding of organizations objectives and goals, and enhances the identification between employees and organization. The employees link their particular effort towards strategic goals based on common sense (54,5%), namely through a process in LEVEL 0 – AD HOC *(fig. 27)*, or such type of process within the internal structure, does not exist (31,8%). Concluding, employees seem aware of the overall objective, but lack the connection between their work and the strategic goals of the organization.

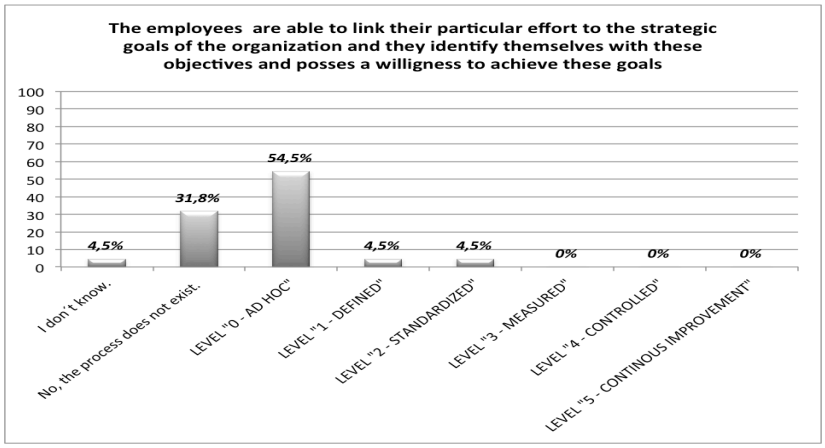


**Figure 27**: Question 19
Source: Own creation

***Question 20:*** Open-minded employees seek work improvements and changes, and contribute towards possible changes to enhance their experience and contribute towards the organizations' success. The performance towards new ideas and improvement is based on personal experience and common sense, classified with 68,2% in LEVEL 0 – AD HOC *(fig. 28)*. As a result, groups and departments respond in a reserved way towards change, as they base their open-mindedness on previous experience.

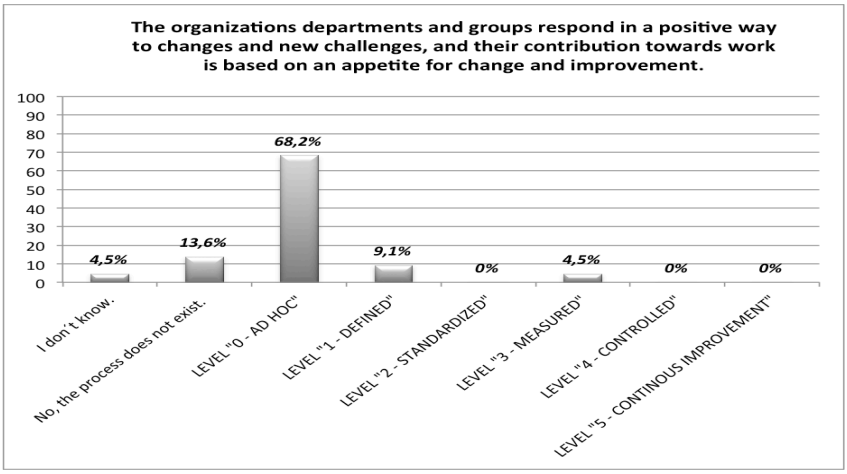


**Figure 28:** Question 20
Source: Own creation

### 5.2.7 Organizational Intelligence – overall perspective

The concept of OI is established on the creation of organizational knowledge and results in a contribution towards successful operations. Effective OI captures knowledge and minimizes a loss of knowledge to sustain established standards. At TAP, OI leads to a diverge result. The core perception (56,34%) states the existence in maturity LEVEL 0 – AD HOC *(fig. 29)*, while the employees additionally state that no process exists (17,26%) and even fewer (15,44%) state a DEFINED – LEVEL 1 maturity. Consequently, the creation of knowledge and the linkage towards work is explored on common sense and personal experience rather than on defined, standardized, controlled and continuously improved processes.

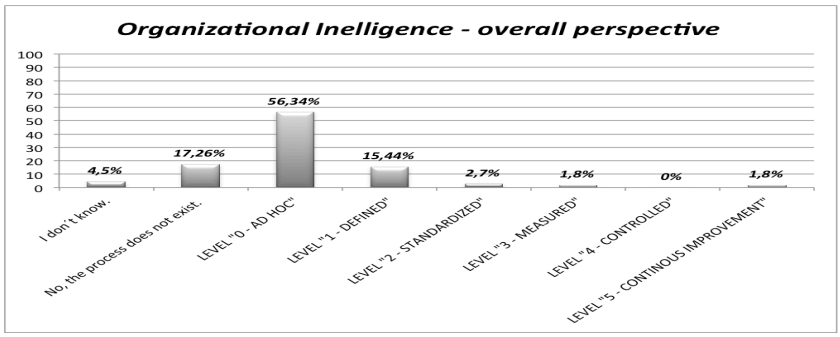


**Figure 29:** OI – overall perspective
Source: Own creation

### 5.2.8 Analysis: Competitive Intelligence

***Question 21:*** Through the implementation of organizational tools – i.e. SWOT-analysis, five forces or benchmarking – organizations establish standards and define parameters to align information within the organizational processes. In reference to TAP, the process is described by 59,1% as LEVEL 0 – AD HOC and with 27,3% as not existing *(fig. 30)*. Consequently, TAP lacks a systematical approach of gathering, analyzing and managing information throughout the entire organization aligned with the operational and strategic decision process.

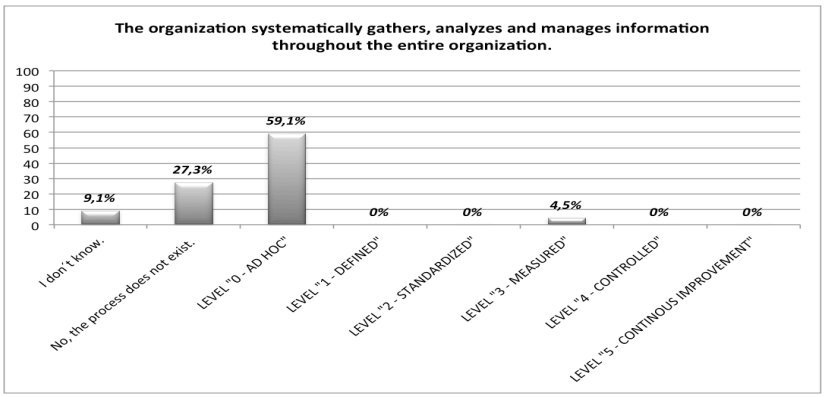


**Figure 30:** Question 21
Source: Own creation

***Question 22:*** Implemented warning systems within the operational process provide preventive or corrective actions, which allow organizations to ensure their objectives, goals and decisions. The main response (50%) states an implemented warning system at LEVEL 0 – AD HOC, while 22,7% state, that the process does not exist or the process is classified in LEVEL 1 – DEFINED *(fig. 31)*. In consequence, the employees in charge are not clearly aware if a warning system exists and the systems' objective and standards seem not clearly communicated throughout the organization.

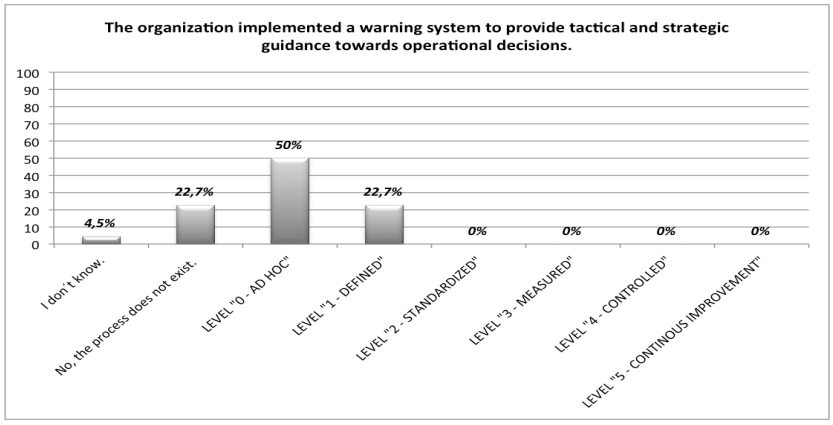


**Figure 31:** Question 22
Source: Own creation

***Question 23:*** The implementation of a process and the linked business planning is an essential need for economic predictions, financial market results or performance measures to ensure a successful implementation and the expected and defined outcome. According to the results, such type of process lacks existence (50%), while 31,8% define the process in LEVEL 0 – AD HOC *(fig. 32)*. Consequently, the organization sets up business planning decisions without conducting information and results of previous and future activities, which leads to a high uncertainty of future results and the achievement of competitive advantage.

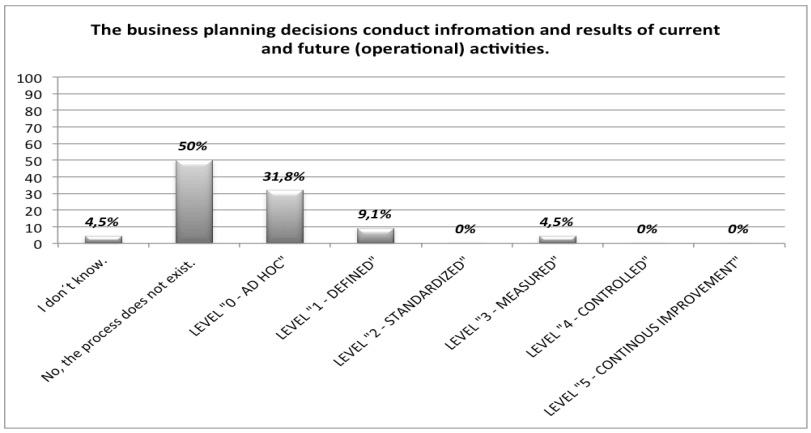


**Figure 32:** Question 23
Source: Own creation

***Question 24:*** A project defines explicit goals, complies with reasonable results and after finalization explores a measurement by an internal audit. The audit identifies a projects achievement level, which defines its overall result. 54,5% state, that the process of high quality planning does not exist, while 27,3% state a process existence in LEVEL 0 – AD HOC *(fig. 33)*. These results point out a gap existence in project planning. Resulting in no clear defined, standardized, measured and continuously improved standards for project planning is set up, which from the basis, diminishes the objective of high quality planning.

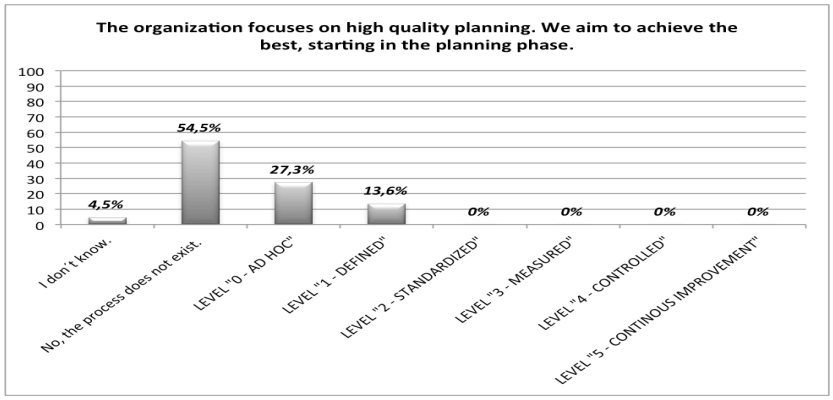


**Figure 33:** Question 24
Source: Own creation

***Question 25:*** Targets, in specification budgeted and calculated ones, request continuous measurements and control – i.e. through risk analysis or budget and time estimation techniques – to ensure ongoing project control. The results state a process existence with 50% in LEVEL 1 – DEFINED and describe the existence in LEVEL 0 – AD HOC with 31,8% *(fig. 34).* As a consequence, cost and schedule control tools exist in defined company manuals or models, but a gap between the existing tools and a performance based on personal experience diminishes the positive effect achievable within these types of tools.

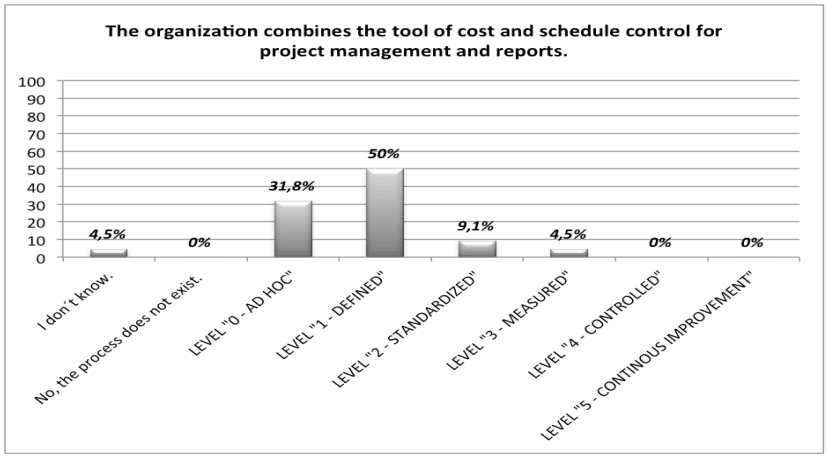


**Figure 34:** Question 25
Source: Own creation

### 5.2.9 Competitive Intelligence – overall perspective

The creation of competitive advantage, by managing knowledge, distributing and organizing intelligence throughout an organization, is the core objective of the CI concept. Their internal alignment results in a positive contribution towards the organizational objective. Within the organizational structure of TAP, the clarification regarding CI includes three main pillars. The lowest with 19,08% states a existence in LEVEL 1 – DEFINED, while 30,9% on the other hand clearly state no process exists and the main responds with 40% state an existence classified in LEVEL 0 – AD HOC *(fig. 35)*. This leads to the point that the creation of a competitive advantage is minimized through several factors, as i.e. no clear structure to manage knowledge exists, nor is the process of knowledge sharing standardized. Performance based on common sense without the existence of standardization and continuous improvement, leads to a loss of competitiveness, market share and competitive advantage; which represents a high price in the highly competitive market of air transportation.

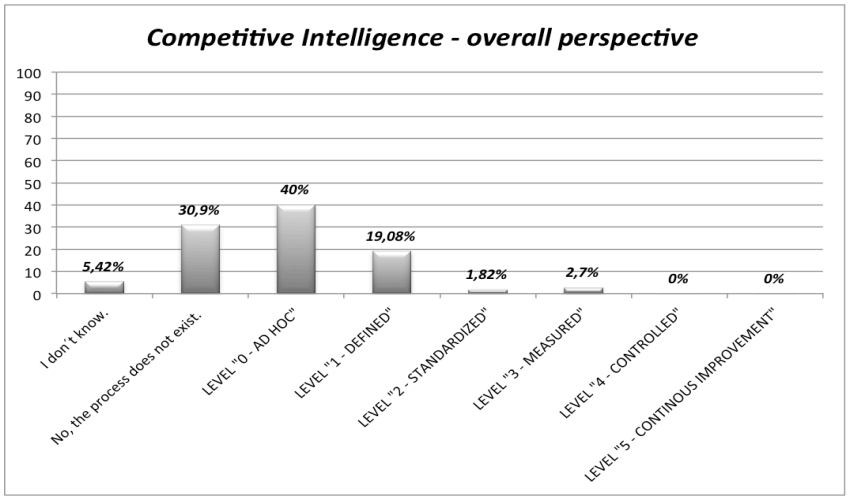


**Figure 35:** CI – overall perspective
Source: Own creation

### 5.2.10 Analysis: Value Management

***Question 26:*** Enhancing a project idea by life cycle phases – such as initiating, planning, executing, monitoring and controlling, and closing – a project receives a classification enhanced with an improved project control plan. Through this, any phase of a project can be located and identified. The core existence of this process with 59,1% is LEVEL 1 – DEFINED, while even 18,2% express the existence in LEVEL 2 – STANDARDIZED *(fig. 36)*. Consequently, the organization set up written rules and company manuals, and the tasks are performed based on equal defined procedures, but offers a certain possibility for improvement regarding measurement and control as well as continuous improvement.

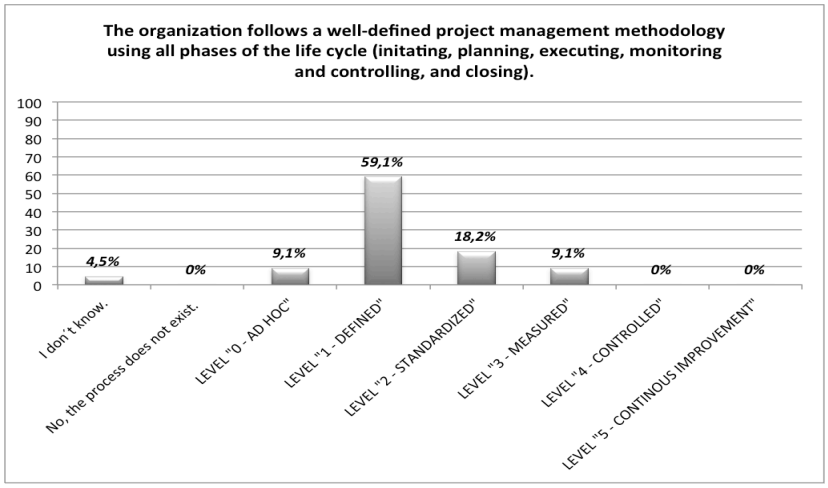


**Figure 36:** Question 26
Source: Own creation

***Question 27:*** With i.e. business process re-engineering diverge stages of a business are directed, managed and tracked to enhance a projects' outcome in order to ensure the achievement of economics of scale. Mainly 63,6% identify the process existence in LEVEL 0 – AD HOC, while 13,6% locate a LEVEL 1 – DEFINED *(fig. 37)* existence. As an outcome, employees implement effective resource planning to minimize costs and contribute towards a project results, but based on common sense and not on defined standardized internal procedures and company manuals.

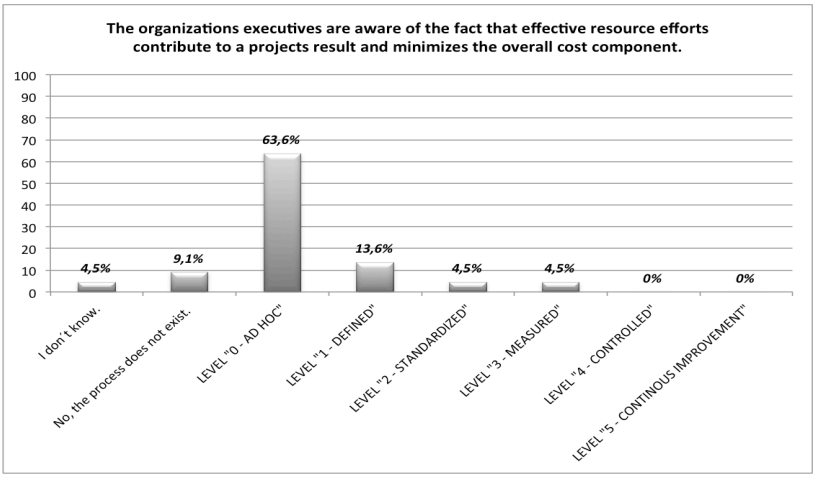


**Figure 37:** Question 27
Source: Own creation

***Question 28:*** Services or products deliver particular results towards operational activities of an organization. With the implementation of tools – i.e. scorecards or cause-effect-analysis – the "why" of specific circumstances, allows a deeper understanding. With a result of 63,6% in LEVEL 0 – AD HOC *(fig. 38)*, such type of analysis is performed based on common sense and personal experience. Therefore, no pre-defined measures to constantly manage the

business environment are set up, which diminishes the ability to figure out a clear cause analysis and implement corrective actions.

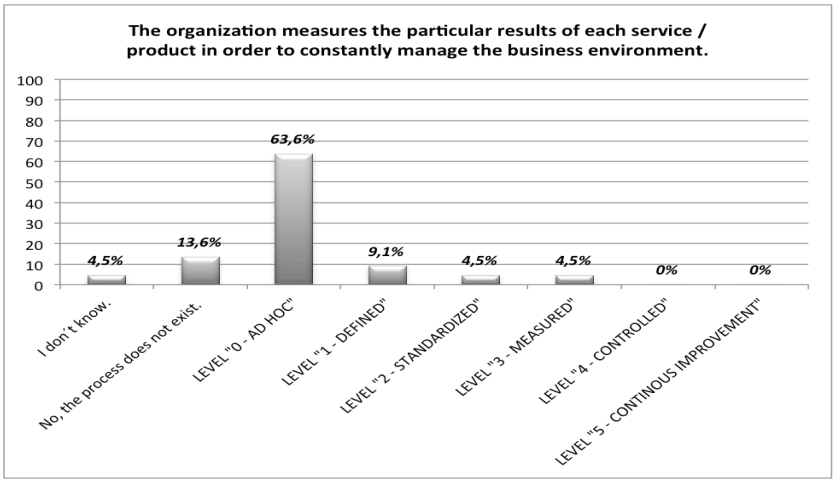


**Figure 38:** Question 28
Source: Own creation

***Question 29:*** Communication with customers and the gathering of feedback through tools – such as surveys, interviews or online communities; enhances an organizations' abilities and identifies areas to improve. Experiencing 72,7% in LEVEL 0 – AD HOC *(fig. 39)*, states that communication with customers is performed on a level of personal experience and common sense. Consequently, TAP has no implemented procedures and control tools to continuously improve the communication process with customers, resulting in a lower customer identification and satisfaction with the airline.

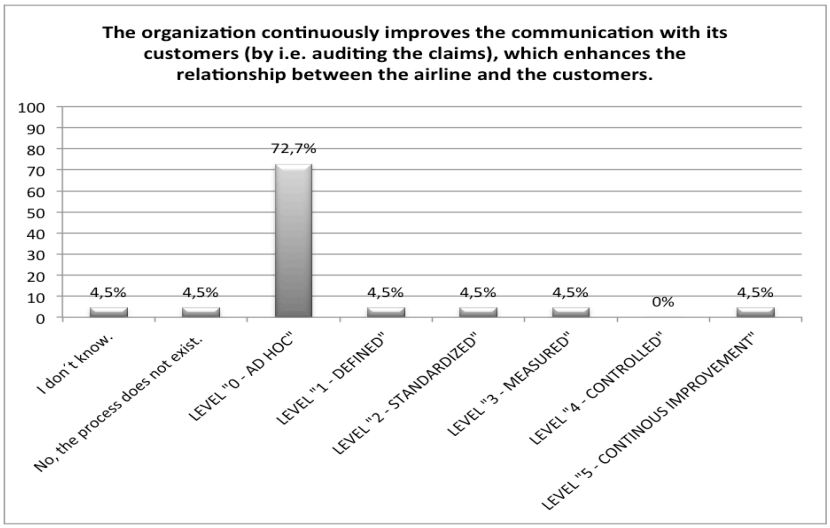


**Figure 39:** Question 29
Source: Own creation

***Question 30:*** Business maturity is achieved through a long life cycle duration, which is based on how clients and markets respond to specific conditions (i.e. satisfaction, price issues), measured through auditing standards. With 63,6% these processes exist in LEVEL 0 – AD HOC *(fig. 40)*, and employees perform based on their personal experience. Leading to no existence of explicit processes to improve the life cycle of the offered services aiming for business maturity, which minimizes the client loyalty duration.

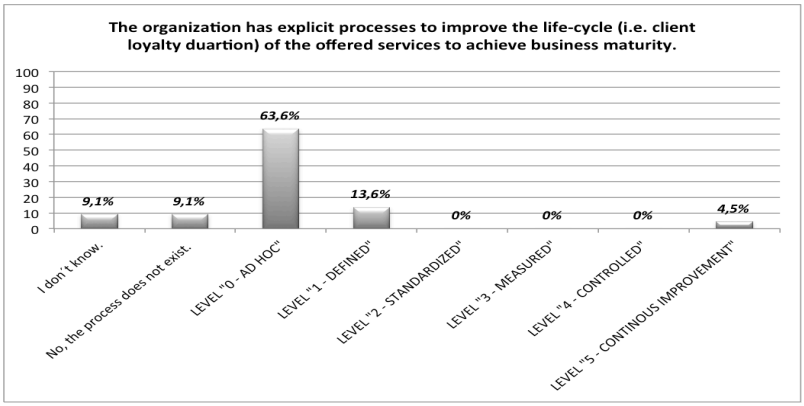


**Figure 40:** Question 30
Source: Own creation

### 5.2.11 Value Management – overall perspective

The concept of VM defines the perception of value with regards to TAP, implementing a process of value creation through successful implementation of projects. The analysis indicates that the overall measurement of value (based on the methodology of ROI) is classified in a performance process, based on personal experience (54,52%), namely LEVEL 0 – AD HOC *(fig. 41)*. Depending on the process and objective, a certain level (19,98%) of written rules and procedures (LEVEL 1 – DEFINED) exist. As a result, value is not specifically defined and communicated, which results in a lack of standardization and control, and diminishes the possibility for continuous improvement.

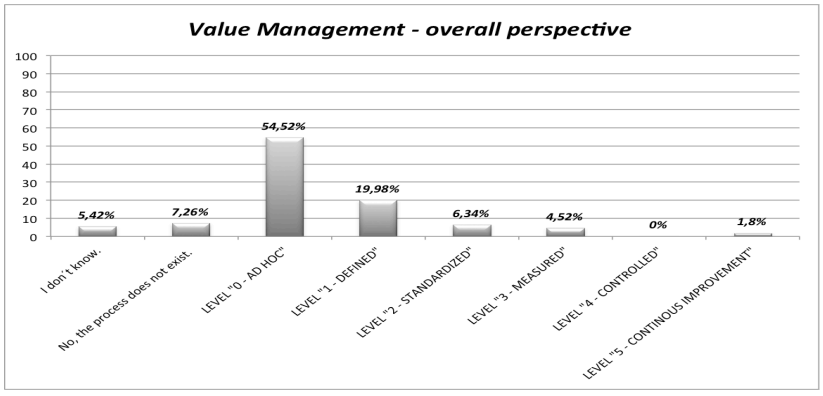


**Figure 41:** VM – overall perspective
Source: Own creation

### 5.2.12 Summary Maturity Level

The definitions of business process management and in specification process maturity, are essential components to provide an understanding of current structures and process flows. The analyzed concepts are individual concepts, which in sum lead through a theoretical process with the objective to create value in an organization.

As presented, the survey questioned each methodology with reference to process maturity. The total comparison of the theoretical concepts and their identification within each project maturity level, is presented in the following steps *(fig. 42)*.

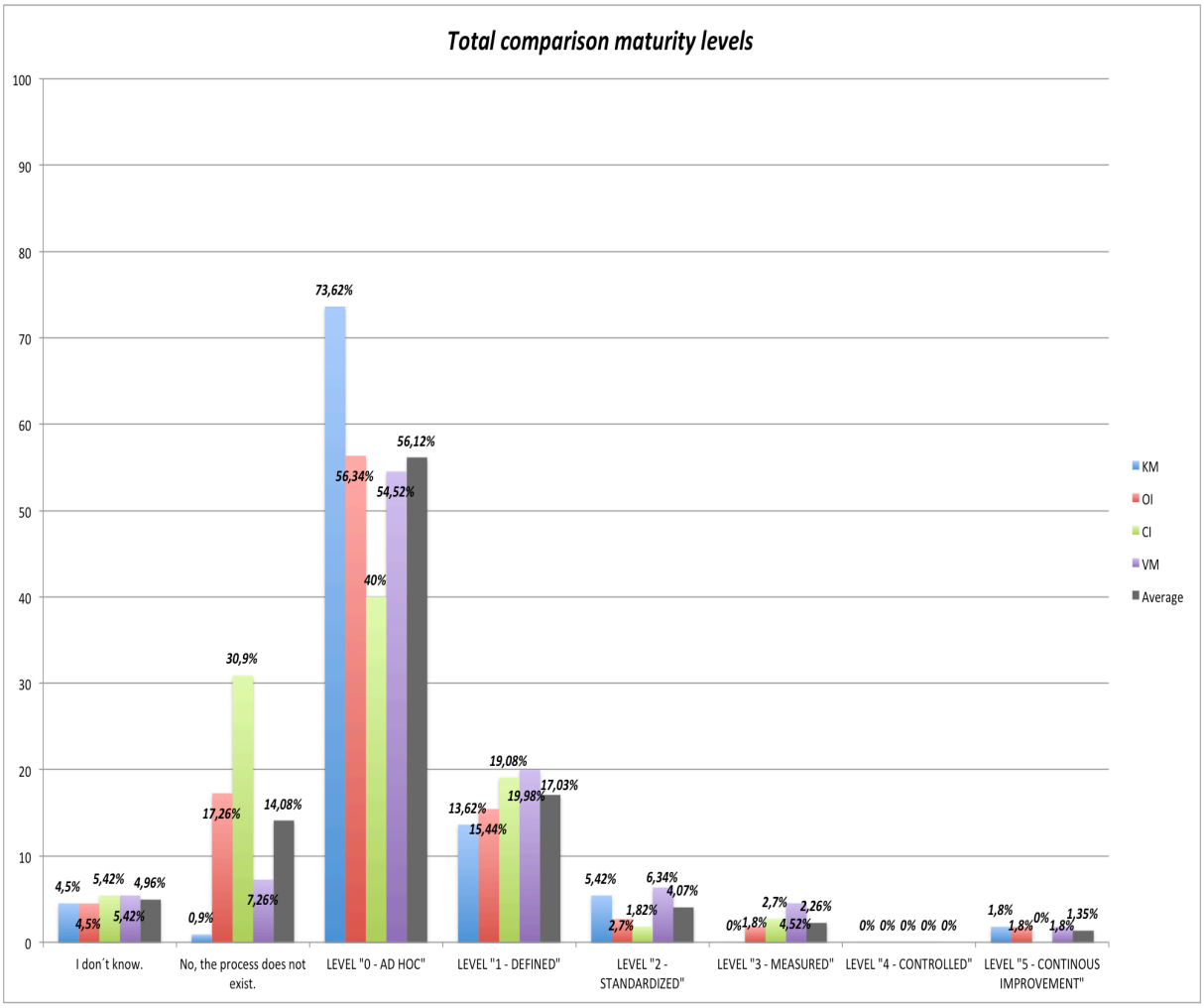


**Figure 42:** Total comparison
Source: Own creation

The overall comparison emphasizes the results achieved throughout the survey, by comparing of each methodology aligned with possible maturity levels. The results are enhanced by an average result per maturity level.

The results of the above figure clearly state that the processes – no matter what type of theoretical concept – are performed in LEVEL 0 – AD HOC. All concepts exceed the level of

50%, besides the concept of OI, which mainly classified with no process existence (30,9%). Within the following step, a global maturity level regarding the existing process maturity levels is presented *(fig. 43)*.

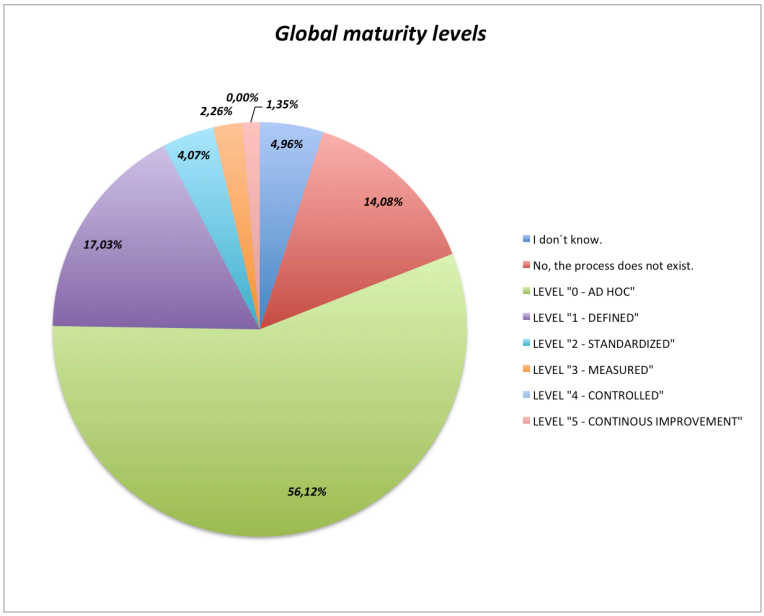


**Figure 43:** Global maturity levels
Source: Own creation

The total comparison *(fig. 42)* and the global maturity levels *(fig. 43)* lead towards a final comparison of each theoretical concept aligned with the maturity levels. *Figure 44* clearly points out the differences between the analyzed concepts.

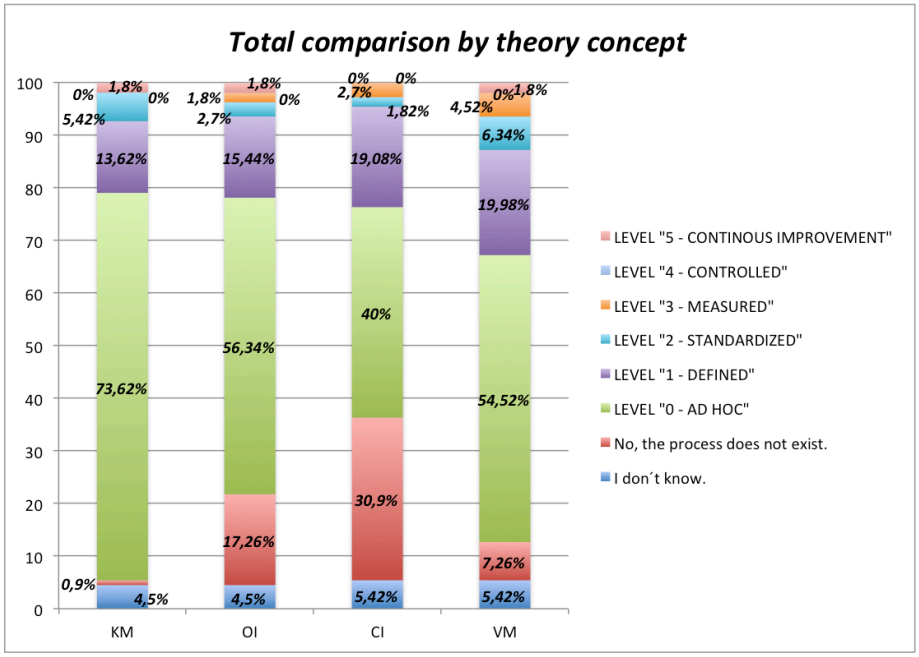


**Figure 44:** Total comparison by theory concept
Source: Own creation

Bearing the results and the above presented figures in mind, the multi-analyses of the maturity levels emphasizes the following overall results: according to 14,08% no processes throughout the concepts exist, while 17,03% state a process existence in LEVEL 1 – DEFINED, and the overall opinion with 56,12% classifies a process existence in LEVEL 0 – AD HOC *(fig. 43)*, performed through personal experience and common sense. With regards to the existing maturity levels, their appearance is categorized in such a low appearance and minor implementation, which barely affects the overall results.

With the results in mind, a clear overall assumption is possible. Within the organization of TAP, the existing processes are grounded on individual performance and not on defined rules, standardized procedures nor measured and controlled indicators, which in consequence diminishes the ability for continuous improvement and value achievement.

Aiming to enhance the airlines' abilities, maturity levels are in need of implementation, to establish organization-wide procedures and models, which allow TAP an overall standard of equal performance based on defined procedures. These models and procedures allow performance and compliance measurement, which enhance the airline with control actions, based on their pre-defined boundaries. Constant changes and possible improvements lead to continuous improvement, which enables TAP to redefine processes, react to new circumstances and in conclusion, enhance the overall business maturity by increasing the level of value.

# 6. Research analysis

The core objective of this thesis was to analyze if the methodology of organizational intelligence aligned with process maturity in an international operating airline results in effective business process management and the creation of value.
Therefore, hypothesis and a survey were set up to analyze if the processes within the implementation of projects refer to certain pre-defined circumstances and allow the measurement of value creation. The projects delivered a clear perception regarding their performance within certain process criteria and offer future research possibilities in connecting their results with defined ROI perceptions.
Within the following final chapter, the above-mentioned circumstances and analyses experience a final assessment and the research question is reevaluated in the perspective of the research results. Further, the results are validated and the hypotheses are verified.

## 6.1 Research definition

The intention, which directed the presented research considered previous research on the application models of the methodologies of KM, OI, CI and VM. As no previous research with direct application towards the aviation industry was found, the purpose of the study was to evaluate, whether the application models were valid towards the specific aviation organization in the presented investigation.
Therefore, the author set up a literature guidance to analyze the essential components within an organizational structure and align a survey connected with each theoretical concept. Aiming to receive detailed information response through the survey implementation, each concept was specifically analyzed with certain questions and independent consideration. The defined research question, which the present work aimed to address, was:
**RQ:** *How does the organizational intelligence of a company contribute to the creation of value in an organization?*
The previously presented research analyses and the following research conclusions, underline the alignment of research questions and results, and provide the presented work with detailed information regarding the implementation of the theoretical concepts within management processes.

### 6.2 Result validation

The developmental process of the research, confirmed a validated theoretical background of the application of Organizational Intelligence to organizations, in specific to the aviation industry. Albrecht (2002) highlighted the importance of intelligence towards organizations as a core aspect of an organizational objective, to further ensure, according to Nonaka (1994) the right way of sharing and developing knowledge; thus the author indicates these aspects as a possible center for further development and improvement.

The significance of applying the presented theoretical concepts are supported by Choo (1995) and Liebowitz (1999), who state the importance of knowledge towards organizations; as well as the process of sharing knowledge and information (Nonaka, 1994), enhanced by the combination of gathering, processing and communicating information (Wilensky, 1967), results in the ability to leverage and center knowledge and information to achieve an organizations' mission (Albrecht, 2002).

In the perspective of contributing towards OI and value creation, the findings of the present research comply with the results from achieved research. Yet, the present research allowed the substantiation of the impact of knowledge management within organizational intelligence in terms of creating value within an airline. The particular situation was analyzed within the identification of the organizations' project implementation, an area of low consideration in previous research. Concluding, the presented research proposed in *sub-chapter 2.5,* the diverse maturity levels aiming to identify the current situation within the airline to detect possible areas for improvement.

Finally, the present research proposed in *chapter 3* an overall connection between the selected theoretical concepts and their objective of value creation. Following the overall connection, each concept is in need of the subsequent concept to ensure a successful creation of value.

### 6.3 Hypotheses verification

Besides the analyzed survey results in the previous chapter, the thesis consists additional hypotheses defined in chapter 4.1. Bearing the previously presented survey results in mind and considering the overall comparison of the theoretical concepts with the maturity levels, the following statements regarding the hypotheses is set up.

> **Hypothesis 1:** *The way of creating value in the selected company has a high level of uncertainty.*

With a clear value perception, organizations define their target and align processes and projects in a way to achieve strategic objectives. Due to the circumstance of a limited

definition regarding internal procedures and communication of information, the selected organization lacks a clear approach of value creation. Therefore, the defined hypothesis number 1 is true.

**Hypothesis 2:** *The discipline of Knowledge Management is not integrated and defined within the selected organization.*

The results referring to the theoretical concept of Knowledge Management state, that the organization deficits to explore it´s existing internal knowledge. Within the organization, knowledge achievement, communication, distribution and transformation lacks defined standards and objectives, as well as a clear company wide communication process. Therefore, the defined hypothesis number 2 is true.

**Hypothesis 3:** *The maturity levels of the processes within the organization explore a low maturity / definition.*

Facing well-defined standards, working according to defined procedures, in which the performance is measured, controlled and continuously improved is the objective of high maturity. The survey results state throughout all the theoretical concepts, that the process definition of the organization can be defined with a low maturity (Level 0 – Ad Hoc), in which the employees operate based on experience and common sense. Therefore, the defined hypothesis number 3 is true.

Bearing the results of *chapter 5.2* and the above-presented hypotheses in mind, the organization of TAP is in essential need for intensive improvement, regarding their internal structure towards a successful future. Within the following chapter, recommendations towards the future operational objectives and improvement referring to the organizational structure of TAP, are presented.

# 7. Research Recommendation

The results presented in *chapter 5* and the above verification of the hypotheses guide the paper towards the following research recommendation, grounded on the research objective. This chapter aligns the presented analysis to provide the airline with recommendations towards their future operational activities.

Presenting a solid recommendation towards the future operational process, which ensures the implementation and transformation of knowledge within the organizational structure, the following two strategic advices represent a solid base towards the final indispensable recommendation:

- The organizational structure requests the implementation of an integrated value chain. Apparently no value chain is integrated, meaning the organization operates on one side according to a strategic plan, while on the other hand lacks a defined perception of what and how certain objectives should be achieved. With the integration, processes as well as projects find their way through certain defined criteria's, completing a defined value preposition and participating towards the pre-defined value perception.
- With a clear value chain, a common vision is an essential component. Ensuring the essence of a common vision, communication and sharing throughout the entire organization is essential. A common vision is seen as guidance towards employees and provides them with the possibility to enhance their connection with the airline, towards the future objectives.

The two recommendations guide towards the core research recommendation, which is due to the importance of capturing knowledge within the internal organization, a inevitable recommendation: *the implementation / creation of a Knowledge Management Office (KMO)*. As the organizational structure of TAP lacks a clear internal structure to align their knowledge perception, the office / department is in crucial need to establish standards, processes and functions which define internal perceptions, create clear structures, measure the results and provide improvement in the future. The following aspects provide a precise perception regarding the general need of a KMO, a definition and mission aligned with objectives; team and responsibility explanation; reporting objectives and possible chances.

- *General aspect:* The paper highlighted the importance of KM and the achieved results underline the essential need to ensure a clear commitment and alignment of KM with

the strategic objectives. Meaning, the implementation of a KMO represents an internal organic interaction, focusing on internal objectives and settings, establishing communication and involvement of all processes throughout the entire organization (Pereira, 2011).

- *Definition, mission and objective*: The author defines the KMO, as an individual department within the organizational structure, in charge of the internal management of the organizations' knowledge. Therefore, the KMO aims to follow a mission of promoting KM within an organizational operation, bearing in mind the critical aspects aligned towards sustainability and development (Pereira, 2011). In example, the objectives include:
  - Define key roles and responsibilities;
  - Define methods and techniques to support the creation, management and analysis of data, information and knowledge;
  - Implement methodology and tools (i.e. best practices, processes, procedures, manuals, work improvement plans);
  - Definition of control and measurement tools to detect variances;
  - Define continuous improvement plans;
  - Manage and network the intense flow of internal knowledge efficiently;
  - Define and establish knowledge as a essential resource;
  - Create a community of practice with knowledge sharing processes, informal meetings and voluntary participation;
  - Enhance KM with suitable investment in diverse training and technology.
- *Team and responsibility:* The office is managed by the Chief Knowledge Officer (CKO), ensuring the successful implementation of the mission aligned with the coordination of the knowledge activities (Pereira, 2011). Further, the CKO manages organizational knowledge effectively, creates a culture of learning and change, and manages the KMO team members. Within his team, knowledge managers, knowledge workers or knowledge management consultants support the objectives and work of the KMO. The tasks of the team members are aligned with the specific requirements and objectives of the organization.
- *Reporting*: Pereira (2011) stated, that reporting supports the objective of a KMO and enables an organization to manage the operational risk. Further, the collected data of i.e. finance, people or markets provide the possibility to convert information into successful future projects and assess and improve processes to create, share and

integrate KM within TAP, resulting in the creation of value. Additionally, the KM strategy is developed, monitored and updated towards the organizational objective.

- *Chances*: A successful KMO implementation results in various future possibilities, which align the strategic objectives with the implemented projects towards the organizational success. Efficiency could be improved, new marketing opportunities could be created or new diverse value-adding information and knowledge systems could be identified.

The above presented research recommendation and an implementation of a KMO, enables the airline to analyze the results from a different perspective, aligned with the overall organizational view and diminish the loss of value. Effective KM provides contribution towards the strength of the organizational systems, the principles and practices of KM as a fundamental aspect of operations is endorsed and TAP is seen as a leading and knowledge sharing organization.

# 8. Research conclusion

Within the final chapter, research limitations and possible future research alternatives are indicated towards future research objectives. The limitations specifically refer to the presented research and the future research alternatives offer suggestions towards detailed various possibilities, within the area of research.

## 8.1 Research limitation

The cited results are influenced within the structural conditions of the main limitations of this research and especially within the parameters of the case study. These limitations are related with critiques of the selected qualitative research methodology and relate to the selected research study design. The author acknowledges the appeared limitations and throughout the research the limitations were minimized to ensure a low impact. With this in mind, the findings of the presented thesis are solitary relatable to the survey and the hypotheses detected in the context of the Portuguese national airline TAP. In reference to Yin (2003), the findings of the case study allow generalization merely to the theoretical prepositions.

A key limitation of this research paper is being a first approach in combing the recent topics, named Knowledge Management, Organizational Intelligence and Competitive Intelligence aligned to achieve Value Management, measured in Return on Investment. Related to this, the paper focuses on a specific organization in a specific type of industry.

Related with this type of limitation, was the given information by the organization. The author faced limitations in a difficult sample selection and participant reactivity. Recognizing the limitations, the author anticipated the possible shortcomings and adjusted to the circumstances, indicating that the paper is based on the specific context of an international aviation organization.

Within this research, the point of currently implemented projects limited the possibility to define a clear measurement regarding ROI. Therefore, the presented research focused the first step on management processes. Additional research regarding the achievements of the implemented projects is considered within the future research alternatives.

For the conducted aviation organization, the findings of this research can provide perceptive data. Additionally, the results, explicitly excluding a generalization, may offer understandings towards experts or researchers aiming to study further data regarding the clarification of

organizational intelligence, linked with the creation of value in the highly competitive aviation industry.

The author advises the ability to generalize was not the intention of the presented study, as a general framework to anticipate knowledge is exposed to assess and apply in other contexts.

### 8.2 Future research alternatives

The concept of OI appears as a new theory, processing a great research value combined with a wide application connotation, in which literature in reference to airlines is negligible. The intention of investigating the potential of the methodology of OI, linked with value creation to the specific aviation airline defines the objective of the present research. Reflecting this, a continuous method with additional research implementation steps to study a holistic and broader approach of the methodology of OI to the aviation industry, should be considered.

With regards to the principles of the presented methodologies and in specification to OI, the concepts offer the possibility towards an aligned design adapted towards the aviation industry. Facing this approach, the author stresses that the aviation industry and the operating airlines face a precise characteristic specification, which possess a high differentiation from other industries.

Throughout the research, questions regarding possible future research arose:

- How do achieved and completed projects provide value in form of ROI?
- Is a general definition of value (and value creation) applicable throughout all industries?
- Does the perception of customer value comply with the perception of an airlines perception of value?
- Should information be aligned with organizational programs to ensure success?
- Is the creation of value specifically depending on information or knowledge flows?

At present Organizational Intelligence is still not at a mature level yet and an essential need for further research throughout various disciplines is essential. Therefore, the methodology offers a large potential to achieve a great value to the diverse disciplines and finally provides organizations with innovation and improvement towards their strategic objectives.

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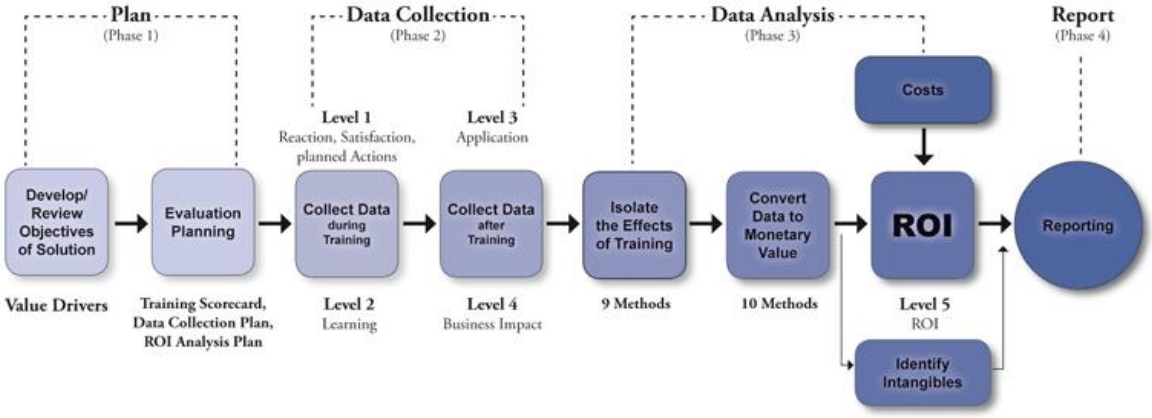
# Annexes

## Annexes I – ROI Methodology



Annexes II – Survey Question –1–

| Personal and Project Characterization –1– | |
|---|---|
| 1. Please identify – your position in the organizational structure of TAP. | Functional employee<br>Functional manager<br>Project manager<br>Executive manager<br>Other (please specify) |
| 2. Please identify – your highest educational background. | High school<br>Trade / technical / vocational training<br>Bachelor´s degree<br>Master´s degree<br>Professional degree or advanced graduate<br>Ph.D<br>Other (please specify) |
| 3. Please identify – how long you´ve been employed with TAP. | 0 – 2 years<br>2 – 5 years<br>> 5 years |
| 4. Please identify – since when are you in charge of projects. | 0 – 2 years<br>1 – 2 years<br>2 – 3 years<br>3 – 4 years<br>4 – 5 years<br>> 5 years |
| 5. Please insert in the first column the title oft he project and in the second column a brief project description. | 1. Title of the project:<br>2. Main objectives: |
| 6. Please classify the project budget (including all estimated costs). | 0 – 50.000€<br>50.000 – 100.000€<br>100.000 – 150.000€<br>150.000 – 200.000€<br>200.000 – 250.000€<br>250.000 – 300.000€<br>300.000 – 350.000€<br>350.000 – 400.000€<br>400.000 – 450.000€<br>450.000 – 500.000€<br>> 500.000€ |
| 7. Please identify – how many employees are in charge. | 1 – 3 employees<br>3 – 5 employees<br>5 – 10 employees<br>10 – 15 employees<br>15 – 20 employees<br>> 20 employees |

Annexes III – Survey Questions –2–

| Personal and Project Characterization –2– | |
|---|---|
| 8. Please identify the estimated project duration, form initiation phase till project closing. | 0 – 6 months<br>6 – 12 months<br>12 – 18 months<br>18 – 24 months<br>24 – 30 months<br>30 – 36 months<br>> 36 months |
| 9. Please identify the SOURCE of the project you are currently implementing. | - Customer complaint, request or suggestion.<br>- Internal idea creation by employees.<br>- New idea based on a previously implemented project.<br>- Enhancement / improvement of a previously implemented project.<br>- Objective of a current management / strategy plan.<br>- Other – please specify. |
| 10. Please identify the OBJECTIVE of the project you are currently implementing. | - Environmental objectives (such as reduction of carbon emission, waste and pollution management or social aspects).<br>- Customer objectives (such as increase customer loyalty or trustworthiness, enhance customer satisfaction or improve relationship and interaction).<br>- Business objectives (such as ROI, cross- and up-selling, increase sales growth or enhance market share).<br>- Efficiency objectives (such as cost reduction, establishment of standard and budget costs or inventory reductions).<br>- Employee objectives (such as increase employability, ensure company loyalty or sustain a competitive workforce).<br>- Organizational objectives (such as effective communication, enhanced work-flow or simple information sharing).<br>- Service objectives (such as increase effectiveness and efficiency, on time flight improvement or fast turnaround on ground).<br>- Other – please specify. |

Annexes IV – Survey Questions –3–

| Survey Questions | |
|---|---|
| 11. The organization actively transforms tacit knowledge (feelings, emotions, personal commitment) into explicit knowledge (hard data, numbers, figures) to create new ideas and concepts. Example: Explicit processes in the organization – such as focus groups, best practices, learning reviews, community of practice or company blogs – enhance the knowledge transformation. | - I don't know.<br>- No, the process does not exist.<br>- Yes, the process exists in LEVEL "0 – AD HOC" (Performance based on personal experience and common sense).<br>- Yes, the process exists in LEVEL "1 – DEFINED" (Written rules, procedures, company manuals and models exist).<br>- Yes, the process exists in LEVEL "2 – STANDARDIZATION" (Tasks in a organization are performed equal to defined procedures).<br>- Yes, the process exists in LEVEL "3 – MEASURED" (Indicators such as performance and compliance measure Level 1 & 2).<br>- Yes, the process exists in LEVEL "4 – CONTROLLLED" (Control charts focus on time and level, measures are inside the defined boundaries).<br>- Yes, the process exists in LEVEL "5 – CONTINUOUS IMPROVEMENT" (Evidence is collected identifying improvements or overtime changes). |
| 12. The organization encourages employees to distribute, share and transform knowledge within the organizational processes. Example: Employees gain new knowledge (i.e. through advanced training, brainstorming, simulation tools), which they actively distribute, share and transform through conversations within colleagues. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |
| 13. The organization is aware of the importance of enhancing the process of knowledge sharing to compete in the global business environment. Example: Previous experience of sharing knowledge (i.e. knowledge portals, creation of knowledge clusters or groupware systems) resulted in improved results or customer retention. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |

Annexes V – Survey Questions –4–

| Survey Questions | |
|---|---|
| 14. The organization emphasizes teamwork during processes and projects to leverage the knowledge of employees towards the organizational success. Example: Employees with different knowledge background and experience levels from several departments contribute (i.e. knowledge network, group decision support system or summative evaluation) in a team towards the projects' success. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |
| 15. The organization implemented rules and structures to seek a higher outcome in future activities. Example: Possible rules and structures are i.e. lessons learned, best practice collection, regular feedback sessions, evidence reviews or after action reviews. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |
| 16. The employees throughout the organization are completely aware of the continuous improvement plan regarding their organizational function. Example: Improvement plans, goals and timelines to improve or a tracking process (control processes) exists. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |
| 17. The internal structure of the organization can be described as open-minded culture, which provides support to employees at all levels and encourages the creation of new ideas. Example: There is no distinction between cultural background, religion or gender and any employee is open to share new ideas, thoughts or knowledge. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |

Annexes VI – Survey Questions –5–

| Survey Questions | |
|---|---|
| 18. The organization can be described as a learning organization, which screens mistakes and improves its actions through learning in order to maintain stability and growth. Example: Employees receive regular explicit feedback (between teams), cross feedback (between areas) and cross training (between units) in order to improve their work contribution. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |
| 19. The employees are able to link their particular effort to the strategic goals of the organization and they identify themselves with these objectives and possess a willingness to achieve these goals. Example: Employees throughout all organizational levels are aware of the mission and vision statement and identify themselves with these objectives. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |
| 20. The organizations departments and groups respond in a positive way to changes and new challenges, and their contribution towards work is based on an appetite for change and improvement. Example: The employees are open-minded to receive work improvements and changes, and further actively contribute towards possible changes. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |
| 21. The organization systematically gathers, analyzes and manages information throughout the entire organization. Example: SWOT-analysis, PESTLE-analysis, five forces, competitor analysis, competences gap analysis or benchmarking are possible analysis, which the organization implements. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |
| 22. The organization implemented a warning system to provide tactical and strategic guidance towards operational decisions. Example: The company has a explicit warning system to check variances in the field to implement preventive or correction actions. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |

Annexes VII – Survey Questions –6–

| Survey Questions | |
|---|---|
| 23. The business planning decisions conduct information and results of current and future (operational) activities. Example: The objectives of a project can be linked to economic predictions, financial market results, market observations, online databases or performance measures. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |
| 24. The organization focuses on high quality planning. We aim to achieve the best, starting in the planning phase. Example: The projects have explicit goals and after finalization comply with reasonable results, measured through an internal audit. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |
| 25. The organization combines the tool of cost and schedule control for project management and reports. Example: Continuous measurement and control (i.e. risk analysis, criteria weighted techniques or budget and time estimation techniques) is implemented to ensure the budgeted and calculated targets. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |
| 26. The organization follows a well-defined project planning management methodology using all phases of the life cycle (initiating, planning, executing, monitoring and controlling, and closing). Example: The initiation phase starts with a project idea, while the planning i.e. sets up a budget and project plan. Further, the execution phase builds up the deliverables such as cost and scope, which are controlled and measured before a project closes after goal achievement. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |

Annexes VIII – Survey Questions –7–

| Survey Questions | |
|---|---|
| 27. The organizations executives are aware of the fact that effective resource efforts contribute to a project result and minimizes the overall cost component. Example: Each stage of the business is conducted, managed and tracked to positively impact the project outcome (i.e. through business process re-engineering, process mapping or cost benefit analysis). Therefore the management controls the stages to achieve economics of scale. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |
| 28. The organization measures the particular results of each service / product in order to constantly manage the business environment. Example: Tools, such as scorecards, dashboards or cause-effect-analysis are implemented to analyze the "why" of results. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |
| 29. The organization continuously improves the communication with its customers (by i.e. auditing the claims), which enhances the relationship between the airline and the customers. Example: Surveys, interviews, feedback sheets, trend analysis or online communities are effective tools to identify areas to improve. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |
| 30. The organization has explicit processes to improve the life-cycle (i.e. client loyalty duration) of the offered services to achieve business maturity. Example: The company audits the reasons why clients or specific markets (i.e. low satisfaction, price issues) have a short life-cycle duration and no business maturity is achieved. | - I don't know.<br>- No, the process does not exist.<br>- LEVEL "0 – AD HOC"<br>- LEVEL "1 – DEFINED"<br>- LEVEL "2 – STANDARDIZATION"<br>- LEVEL "3 – MEASURED"<br>- LEVEL "4 – CONTROLLLED"<br>- LEVEL "5 – CONTINUOUS IMPROVEMENT" |