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### Management System and Optimization: Life Cycle of Ercan International Airport (Northern Cyprus)

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**Abstract:** The purpose of this research study is to diagnose at which specific stage Ercan International Airport (EIA) is and to determine the evolution of strategies, risks and opportunities for taking timely appropriate management decisions. The study intendeds to provide guidelines to EIA organization on how to facilitate the management and optimization. The method has been approached by the following steps: selection of indicators and their level of life cycle stages; collection and processing information; definition of development trends, analysis of the data on compliance status of the organization at a certain stage; conclusions according to a particular phase of life cycle indicating deviations. Finally, the article gives recommendations on optimization of control system at the “infancy” stage of life cycle of Ercan International Airport and highlights the picture of EIA through management approach. According to the authors’ analysis, three management issues are predominant: a) development strategy, b) financial risks and c) time and project management to identify one or another stage of development of an organization.

**Keywords:** Northern Cyprus, Ercan International Airport (EIA), optimization, management system; life cycles.

#### I. Introduction

Service management is becoming a rapidly moving trend for today’s business world organizations. One of the core issues to survive in the jungle of competitiveness is to introduce more adaptable and in time services to appropriately support customers, businesses and suppliers. Aviation management is growing significantly over recent years and international airports providing services are constantly changing the shifts due to increased business realities, regulatory requirements and new technologies. International airport has to be able to keep pace with control and constantly improving customer services and as any organization consider service management evolving from a focal point to functions through developing this focal point to a strategy based on the “service life cycle”. A number of studies been conducted on the life cycles of organizational development [7], [8], [9], [10], [11]. Without regard to, relatively or very limited literature attempts to demonstrate or foresee the life cycle from the angle of systems thinking on the example of airport. The study focuses on Northern Cyprus case of Ercan International Airport (EIA) to identify its current stage of development in the business life cycle.

The ability to diagnose specific stage of development of the Ercan International Airport (EIA) can assist in the development of strategies, risks and opportunities for taking timely appropriate management decisions currently and in the future. The original essence of the diagnostic steps considering life cycle, in our view is the determination of compliance state of the international airport according to the characteristics of one or another life cycle stage in order to identify trends in its development and opportunities by using management tools that conform to this stage to prevent the negative trends in the development and maintenance of effective functioning of EIA in the long term.

#### II. Literature Review

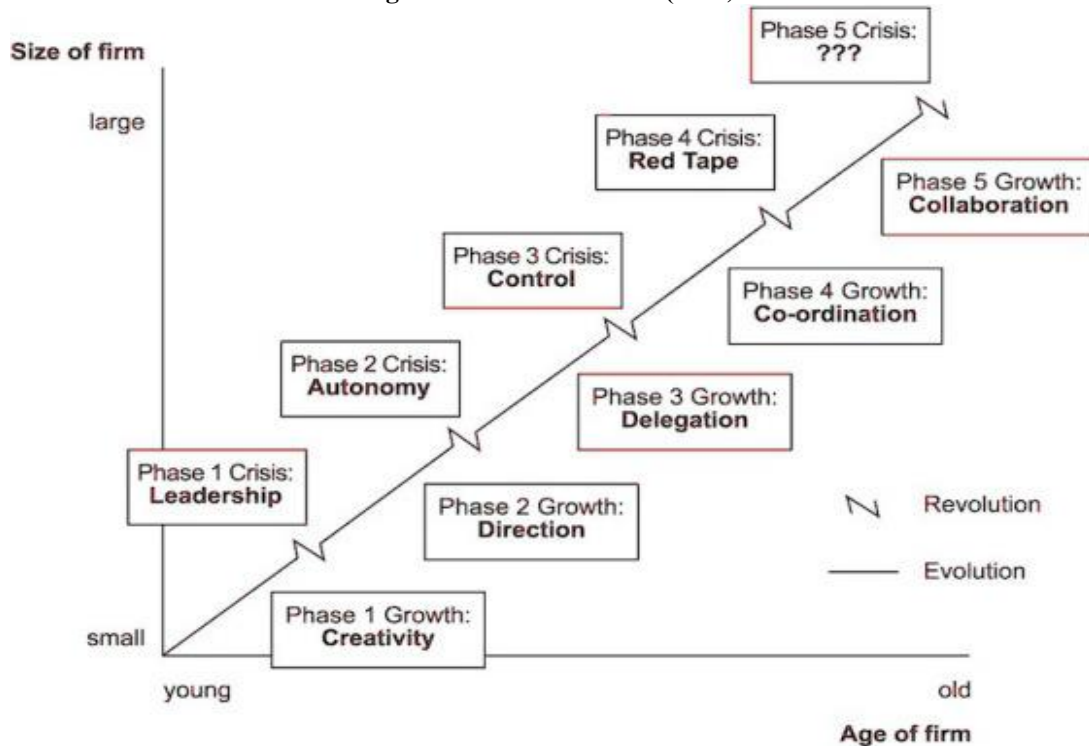
##### ■ Business Life Cycles

The term “life cycle” has long been used in reference to the stages in the life of an item or organization. In this instance, the life cycle is an iterative process of alternation of ups and downs in the economy. Such periods are called phases, the highest point in the cycle is a peak and the lowest is bottom. Business as an economic category also has its cycles which are quite natural in acting. For organization, it is important to be able to distinguish and define the phase cycle for coordinating management, mission and strategy formulation, if necessary, to be ready to change the trajectory of development. Accustoming the original concept from the biological sciences, some researchers prescribe life cycle as a natural way of development from birth to death ([12], [13], [14], [15]. Chandler [8] for the first time coined the concept of stages in life cycle model, where it was argued that as stages changed, so did firms’ strategies and structures and had identified a four-stage model of organization evolution. Greiner [9] contributed on a theoretical part of company’s development as evolution and revolution. Considering application achieved by the scientist, it is argued that organizations pretend to move through five types of growth

each phase containing a relatively calm period of growth that ends with a management crisis. The five phases identified by Greiner are (Figure 1):

1. Growth through creativity, followed by a crisis of leadership
2. Growth through direction, followed by a crisis of autonomy
3. Growth through delegation, followed by a crisis of control
4. Growth through coordination, followed by a crisis of red tape
5. Growth through collaboration; followed by a crisis of psychological saturation among employees

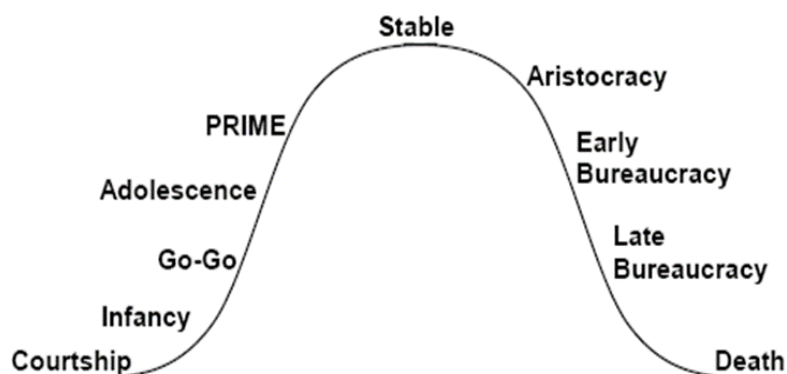
**Figure 1 Greiner's Curve (1972)**



Global economic experience suggests that the business does not operate erratically and acts in accordance with certain internal laws. The particular "case" creates, develops and is gaining its market niche, stabilized, stagnating (not growing and not shrinking, that is in equilibrium with the surrounding unchanged market environment) may be reduced and finally ceases to exist. Thus, we can assume on existence of organizational life cycle of a particular business - dynamic process creation, transformation and elimination.

Similar to other lifecycle models, the Adizes organizational lifecycle characterizes several phases in the life, from creating and growth through to maturation and decline. The Adizes lifecycle is described in ten phases: Courtship, Infancy, Go-Go, Adolescence, Prime, Stable, Aristocracy, Early Bureaucracy, Late Bureaucracy and Death [1], [2], [3], [4], [5], [6] (Figure 2).

**Figure 2 Organizational life cycle by Adizes (1979)**



### III. Method Implementation

The purpose of the diagnosis phase of the organizational life cycle is to identify the stage of development and the means to develop timely solutions at this stage. The ability to diagnose specific stage of development of the Ercan International Airport (EIA) can assist in the development of strategies, risks and opportunities for taking timely appropriate management decisions currently and in the future. The original essence of the diagnostic steps considering life cycle, in our view is the determination of compliance state of the international airport according to the characteristics of one or another life cycle stage in order to identify trends in its development and opportunities by using management tools that conform to this stage to prevent the negative trends in the development and maintenance of effective functioning of EIA in the long term.

The diagnostic process is proposed to carry out the following steps: selection of indicators and their level of life cycle stages; collection and processing of information; definition of development trends, analysis of the received data on compliance status of the company at certain stage; conclusions on the state of the company according to a particular phase in the life cycle indicating deviations (Table 1).

**Table I Elements of Diagnostic Stages of the Life Cycle of the Organization**

Elements of diagnostic stages of the organizational life cycle
Diagnostic focus – the organization
The purpose of diagnosis - identification of development stage and timely developing means of solving the problems of development at this stage
<p>Main stages of diagnosis:</p> <ol style="list-style-type: none"> <li>1) The choice of indicators and the determination of the dynamics of its level in stages life cycle;</li> <li>2) The collection and processing of information;</li> <li>3) The definition of development trends, analysis of the data on compliance status of the organization at a certain stage;</li> </ol>

### IV. Results

Based on the results of the study, the process of creating (initiating) the EIA and the starting of its life cycle formation is different from described in the classical model. The current identified stage of EIA is infancy level with a strong tendency to go-go stage. In particular, in the process of creating the airport, the state government participated in the formation which determined the main directions of development of the EIA. In addition, the EIA at its early stage of the operation has not been forced to borrow financial resources and thereby assume the financial risks which are the most critical factor for the most of startup companies. Thus, a factor of the EIA origin in the analysis can be taken as significantly influencing on the characteristics of the trajectory of further EIA development (Table 2).

**Table II Characteristics of EIA Trajectory Development (A)**

Diagnose Indicators	EIA	Sabiha International Airport (Turkey)
Purpose of creation	To make country recognized	Profits
Initiative of creation	By the Government of Turkey	Owner (group of owners)
Risks	Competition with South part of Cyprus Political pressure Neighbourhood boundary with South (Greek) part	Deficit of highly qualified personnel Financial lack Innovation lack Competition
The degree of regulation of internal interactions	Low	High
Leadership style	Laissez-Faire	Transactional
Organizational structure	General	General
Organizational image	The focus is on the national tasks of development of civil aviation	The focus is on organization
Main focus of the top management	Implementation of directives	Customer satisfaction
The central problem	Lack of communication with South part of Cyprus Lack of finance	Entering the market Financial resources
The planning horizon	Long-term	Short-term
Management control method	Administrative	Sole

As the data in the table indicates, the parameters of the EIA in its earliest stage - infancy are significantly different from the parameters of the same stage in other business organization on the example of Sabiha International

Airport (Turkey). Thus, there are different approaches in the purpose of creation, risks, management tasks and organization, marketing, planning management. These differences are largely due to the fact that the appearance of EIA has been done in difficult political and economic situation starting from 1974. Even currently, the EIA is under control of the Ministry of Public Works and Transport of Northern Cyprus, and Aviation Authority. Lack of economic independence of the EIA and the impossibility of determining financial objectives was due to the planning of the economy in general at the state level.

Moves from one life cycle stage to another are related to the implementation of the changes. Stage "early growth" or infancy by Adizes [2] is called the most dangerous according to researcher as in this period there is a dramatic growth of the organization compared with the change of management potential. At this stage, usually majority of newly formed organizations fail due to lack of experience and incompetence of its leaders. The main target of the company in this period is to strengthen its position in the market with particular importance attached to strengthening competitiveness. The main goal of the business organization at this stage is to ensure a short-term success and a rapid growth.

Stage of "early growth" for the business is defined by a significant increase in sales which was also typical for the EIA (a significant increase in traffic, the opening of new air directions, and the load on the production staff). A feature of the functioning of business organizations at this stage is to constantly attract new employees due of the high loads problem of the staff turnover (staff personnel are generally minimized). For the development of EIA, this step determines the active personnel policy which was based on the implementation of policy advocacy of major economic problems for the development of air aviation. The priority direction of stimulation unlike the business of the organization is not a material motivation and a fast career growth. At the stage of infancy, staff personnel of the business companies is usually represented by multidisciplinary specialists and demanded by the market. However, the staff of EIA at this time is not determined by the multitasking but by a unique and talented people, their ability to implement economic growth, finding new work horizons and solving the complexity of the tasks set by the management.

A serious problem that may face by the managers at all levels at this stage is interpersonal conflicts that provoke withdrawal of key employees of the company. Basically, conflicts arise between staff having many years of experience in the company and newly hired employees. For the EIA, the problem of organization of professional training has actualized. In an organization which is focused on the breakthrough of air transport development, the improvement of whole staff is vital. Activation of human potential as one of the major factors in the development of the EIA has appeared on the stage of "infancy" as a key element in creating new, both internal and external conditions conducive to a revolutionary breakthrough in the civil aviation of Northern Cyprus. Important national objectives have promoted appropriate opportunities to develop organizational culture that presented a priority to the promotion of a teamwork. The following is the list of possible effects at the stage of "infancy" that was able EIA to form a cohesive team within the departments and the organization:

- a) Mutual aid and assistantship aimed at achieving a common goal;
- b) Priority focus of joint activities; Immaterial motivation of employees of the organization; High personal responsibility of each employee to achieve the common goal of the department, service, etc.;
- c) Readiness to the selfless actions in the interests of civil aviation;
- d) Strict discipline and control staff to ensure reliability;
- e) Open communications; High degree of trust employees to each other, based on the diverse experiences of successful joint actions and the common command history;
- f) Personal responsibility;
- g) Unprecedented efficiency in individual and collaborative activities;

**Table III Characteristics of EIA Trajectory Development (B)**

Diagnose Indicators	EIA	Sabiha International Airport (Turkey)
The purpose of the operation	Increase in air traffic	Sales growth
Structure of Organization	Formalized	Not clear
Development	Unstable	Stable
Financing	Investments	Borrowed funds
Type of growth	Extensive	Intensive

Formation and development of the EIA performed in the period when the activity is apparent contradiction between the conservative rational-bureaucratic control system and the real needs of the company. Accounting for the scientific concept of development of the organization at different stages of the life cycle, which would accumulate all the best from the world experience and practice of management, reflects the national identity, the uniqueness of historical experience on the stage of "birth" and "infancy" was impossible to EIA. This is due mainly to political situation in the region. It is considered that the business organization on the stage of "infancy"

use methods of price competition, aggressive methods of advertising and other typical management. EIA on the stage of "infancy" is already considered as one monopoly entity in the Northern Cyprus. Currently, the EIA operates 4 million passengers per year and only one airport in the country. Describing the conditions for the functioning of EIA on the stage of "infancy" should be noted that there is a strong influence of external factors (political dilemma, appointment of airport management, approval and interference of its structure by the state controls). It suggests, that the number of companies formed in this transition economy period including EIA has effected on formation of life cycles of all Northern Cyprus. Companies created "from zero" in the market environment are developing in accordance with the traditional model of life-cycle, from simple organizational structure to a more complex, from the informal style of decision-making to a more formal processing. Companies organized since 1974 in newly established part of Cyprus have significant differences in the characteristics of the life cycle of the market organization, such as a more complex process of establishing, a high level of formalization, the global goals to address major economic problems, centralized management level. At the modern time, the functioning of airports has changed significantly and continues to be transformed rapidly. Going through the stages of development of the market economy, the main activity of airports and airlines, including the EIA is the introduction of measures to ensure their competitiveness in the domestic air transport market. Independent research and planning of consumer qualities of service for the passengers has started recently only. New approaches and proposals to improve the quality of service for passengers in the airport has been initiated recently. It is the fact that the EIA is the only one operating airport in the Northern Cyprus with its growing passenger traffic. The dynamic development of air passenger market is complicated by problems associated with the poor state of air transport infrastructure. The main reason of this, that EIA has been associated with the already mentioned lack of investment volume, the small amount of funding for the development and maintenance of airport by the state and the scarcity of effective management. In this situation, the subjects of the market for airport services are faced with insufficient common approaches, criteria and methods for assessing the level of quality of airport services and as a consequence the need to develop independent mechanisms of regulation of service activities. The high level of quality service to all consumer segments means satisfying the expectations, however, if the creation of competitive advantages are key to long-term effective functioning and development. For further development of the services in the airport is necessary to make a number of changes to the legal activities of the organization. This applies to the expansion of government guarantees, development methodology of standardization of risk assessment, establishing a system of independent evaluation projects. It should be noted that currently the field of airport services regulatory framework in the area of quality is not responding to modern conditions for the functioning of the customer-oriented approach to management. In this connection, the development of methodology for assessing service quality of airport services is necessary. One of the priority tasks of improving the efficiency of the airport is the shortening of cycle time for passenger service.

## V. Conclusion and Discussion

The study aimed to explore and diagnose the management system through Life Cycle of Ercan International Airport located in Northern Cyprus. The findings revealed that the current stage of Ercan International Airport's development is infancy in its life cycle model. In respect to the diagnostic use, a comparative framework was considered by observing Sabiha International Airport in Turkey in both the beginning and current stages. At this stage of the life cycle, the EIA, according to analysis still in its early physical existence after birth; even over 40 years passed since its creation. The organization operates workers, interacts with customers and improves business processes. This stage of the struggle for survival under conditions of constant crisis (political or economic), where the standpoint of the effectiveness of the organization management is postponed until better times. The EIA, requires financial support to improve its weak cash flow control system. The management style is autocratic and directive that is explained by regulatory role of central Government. The possible reasons for the collapse are clearly seen "death in infancy" comes when infancy delayed, the enthusiasm and dedication of the founders to its child is drained and the resulting irreparable losses of liquidity. However, it was observed, that even taking into account the long lasting staying in the infancy stage, the EIA has a growing perspective to expansion and easily may overcome this deep-rooted stage. The infancy stage ends at the moment when the cash flows are stabilized and there is some systematization in the performance of business processes and the organization continues to step of the life cycle to a go-go level.

Overall, the study provides an important insight into the practical aspect of management system and optimization at the example of Ercan International Airport. The findings suggest that greater emphasis should be placed on fastest way to reach the next stage at the life cycle. Organizations like EIA can exist for very long time. The generation of owners, managers, employees will be changed through which the organization lives and thrives. For EIA, time is a key factor that influences its condition. There are many cases where organizations die young in age, quickly describing the life cycle curve. And there are examples of companies living and developing for centuries, which currently are young in their state. Such organizations tend to go through periods of ups and downs, aging and rejuvenation but in general they support themselves constantly "to stay in a good shape". Thus, the organization is aging from miscalculations and errors of the management. Therefore, the problem of



professional management is the vital idea to managing the current and future lifecycle of Ercan International Airport.

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