Reflections on risks of guaranteed departures

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Abstract

Tour operators usually develop programmed departures including confirmed tours with a minimum number of clients, in order to limit their economic risk. However, they often forget some aspects which can cause heavy negative consequences on their management and often the loss of their investments in short time.

Key words: Break event point, guaranteed departures, risk, cancellation of scheduled departures, costs, time and tourist management

Introduction

Among the tools/techniques of Analytical Accounting and Management, the Break Even Point is one of the most used in the preparation of the business plan and it is studied in many high schools and universities.

Through the study of the relationship between the fixed costs (or costs of structure), variable costs and production volumes, this model allows the determination of the volume of production for which the total revenues are equal to the total costs: the so-called break-even point or balance that can be expressed in terms of quantity or revenues. There are several criticisms about break-even point, for example:

- It is applicable to the short term (one year) and refer to production choices that do not involve a material change in the resources of the firm;

- it is a Statistic analysis therefore it not considered flows;

- it supposes costs and revenues with linear trend, but this is not true (increasing the quantity purchased price decreases = greater bargaining power);

- the distinction between fixed costs and variable costs often is not so clear;

nevertheless it is a tool widely used in business planning. This model, although is useful for manufacturing enterprises, in tourism needs some appropriate adjustments. Level of production for manufacturing companies is a variable defined by the company that ideally "pressing a button, choosing a specific production structure, techniques etc. " decides how much to produce also striving to market demand: the excess part of production will boost the value of stocks, and vice-versa (in this case the store seems to be a kind of expansion-compensation. In case of tourism companies, volume of production is not expressed in terms of number of products, but in number of tourists to time instant, depending on market dynamics rather than on internal matter. Official statistics on tourism use different information sources producing values related to time instants: the survey on the capacity of accommodation establishments is a census survey conducted annually, the detection of the movement of customers in hospitality is a monthly census survey, the indices of the turnover of accommodation services are economic indicators produced on a quarterly basis (Italian Statistical Yearbook 2013). Therefore, if the time component is neglected in the break-even point "classic", in fact it's limited in short time, the same can not occur when this model is applied to tourism because, as noted, production in tourism is expressed by the presences related to specific time instant. Hence, in tourism, the introduction of time is, at least, appropriate or necessary and this leads to important impacts on some type of costs: some fixed costs become variable with passage of time, however they don't show the characters of those usually defined CV in break-even model (costs directly related to number of

clients). In particular, some of them decrease with the passage of time. This fact/trend transforms the straight line of the costs in a curve which gradually approaches to the straight line as a function of the total cost of the presences without that part of the fixed costs and activation become 0 with passage of time. In other words, there will be a function of two variables (time and number of tourists) whose trend is on the plane following a straight line. The effects on profit can be interesting, but their analysis is not the object of the present study. Now this brief introduction aims to underline the basic role played by time in tourism studies.

Relationship between costs, time instants and management

Through the introduction of time in break-event point model, in addition to transfer the effects from the linear context to the plan, some interesting consequences, from the point of view of the relationship between costs, time and phases of management, are obtained.

In tourism management, and I would say not only in this, there are, at least, two stages-moments characterized by different degrees of risk and complexity in relation to their cost components: the pre-opening and the opening. Admit that the tourism sector requires the introduction of time (linked to the increase/decrease of number of clients) leads to consider a model which rethinks the nature of the costs as well as a different degree of economic risk in relation to the different stages of management.

Pre-opening

It's the time instant where enterprise is structured, but it cannot function. Suppose a fully equipped restaurant/hotel but closed. Investments in facilities and capital goods are made such as: installations, equipment, furniture and furnishings, intangible - licenses, studies and research, etc. Operating expenses are mainly related to the impairment of fixed assets. Probably, a tour operator developing a catalog with scheduled departures under confirms (minimum number of pax = tourists), represents most frequently concrete case. This is a tourist offer related to a specific instant of management mainly characterized by investments in intangible assets consisting by costs for research, development (design, side-inspections, contacts with suppliers, promotion, etc.) and multiannual promotion-advertising. Most these investments will affect the profit through their depreciation (amortization) when activity will start to run. In case of hotel-restaurants, this phase is mainly characterized by the following categories of costs.

CF (costs of pre-opening) fix costs not related to the number of clients: interest expense on investments in tangible/structure and intangible, bank charges (fix costs of bank account, etc.), depreciation for technical obsolescence (usury is not considered because most investments are not working in this moment/phase) of material goods and intangible, first/little part of administrative costs (accounting, fix/local taxes etc.), costs for security and related to the structures (security, cleaning, insurance, etc.)

Opening

The enterprise can meet their customers: employees take service (reception staff, cleaning, cooking, etc.), goods and general services are available. In case of new tour, these costs can be defined as "costs of travel confirmation": rental bus, commitment with the tour guide, etc. We can assume two hypothesis:

- the opening takes place regardless the presence of customers (the restaurant/hotel is opened or the tour is confirmed, with pax = 0);

- the opening takes place only when a minimum number of clients is reached.

These are indirect costs needed to accept clients. Goods are not included because according to the principle of economic competence, until they are not used, they are not costs, after they will become variable costs. Usually the **CA** (costs of opening) include the following categories: costs of human factor, energy costs, services, maintenance costs, more administration costs (eg. payroll employees, accounting etc.), interest

expense and bank charges on routine operations, depreciation for usury of material goods, etc.

Addition to these two categories there are the costs directly related to clients:

CV: purchases of goods and services (eg. flight tickets, accommodation, food, etc.), more energy costs, more maintenance costs, etc.

The choice of the minimum number of pax to keep or "initiate" the activity, apparently depends on the level of risk accepted by the entrepreneur: high number of minimum pax = low risk of economic loss. This concept seems to be clear, however, it's complex and deserves further study.

The risk of non-confirmation of tourism tour

The effects of psychological aspect on management of tourist enterprises is one of the factors that make tourism one of the most complex economic sectors. In addition to classic economic rules-effects, the planner tourist must consider-analyze-manage the psychological component, both in terms of customers and of suppliers, which often is the most important variable/condition for a good economic result. Hence, the evaluation the operation (eg its feasibility) considering only the negative difference between revenues and costs of a specific operation, neglecting some important/basic aspects, provides incomplete information. Nevertheless, tourism operators often regard this activity primarily from geographical point of view, ignoring-neglecting the several psychological factors affecting it in different ways (some authors suggest to consider tourism as a kind of instrument defense of the psychological health of the individual when he decides to escape from the stress of everyday life). Recently, the rediscovery of the strong relationship between psychology and tourism has led to the introduction of a new discipline called Psychology Studies Tourist whose goal, in nutshell, is the study of man-tourist. There are several examples of the relation between psychology and tourism even in legal field. For example, the European Court of Justice studied-introduced the "damage ruined holiday" in relation to the negative effects on the tourist's failure to perform the journey. In particular, the Court in Directive 90/314 recognizes the existence of a compensation for damage other than personal injury, including moral ones. On this theme, the Italian case law has provided several judgments, among them, those related to the non-pecuniary damage to the "sorrow of having lost an opportunity for fun and entertainment" are the most interesting for the present work. According the interpretation of the judge, the loss of an opportunity for fun and entertainment is a disappointment for the tourist regardless of the responsibility of the tour operator that, in the case of his guilt, will then be required to pay damages. The lack of confirmation of a tour, due to the failure to reach the minimum number of pax, is certainly one of the assumptions of loss of opportunity for recreation and fun, especially when it was informed to tourists close to departure. The travel confirmation with a minimum number of pax, if included in the travel contract, raises the tour operator from liability in case of cancellation, but according to the above considerations, certainly it leads to the deterioration of the relationship of trust with customer that in future, probably, will orient its choices toward more reliable tourism enterprises.

The Cr

In nutshell, the cancellation a trip or opening a local for failing to meet the minimum number of pax, exposes the enterprise:

- *Immediately*, the loss of pre-opening costs, if the product or opening are permanently deleted;

- *In short term*, especially for programmed tours, when the cancellation is repeated, the loss of credibility by customer and supplier. This situation often means great obstacles in offering the same or similar product in future because:

• suppliers are no longer willing to grant options on services

• customers will prefer the confirmed products of other enterprises.

From the economic point of view, a process that gradually reduces the profit will be activated. In fact:

- costs of production will increase due to the reduction of the company's bargaining power with its suppliers. In case of organized tours, it can lead to the impossibility to revive the tourism product due to the lack of options on the services by suppliers. Experience teaches that options on services are often a basic condition for tour operator management, but these options (eg. term option, number of places, of rooms etc.) depend on the credibility and image of the tour operator/travel agency;

- trade costs as well as costs of promotion will increase. The firm will be forced to spend much resources in order to recover the number of past/lost clients (market share). Usually, enterprises activate:

• discounts and/or bonuses to clients (revenue reduction)

• advertising campaigns (increased costs)

• increase the number and / or quality of services offered at the same price of sale (Increased cost-reduction of revenues)

In short time, it's reasonable that the cancellation of programmed tour will mean lower revenues, higher costs as well as great problems/obstacles in management. These negative economic aspects will be represented by the cost **Cr** (it is the cost to recover the lost market share as well as the trust/consideration of suppliers) in the following pages. It is unnecessary to state that the reduction the number of minimum pax increases the likelihood of confirming the trip. Earlier, it was said that the choice between different degree of risk can be only apparent. In fact, the question should not be placed only in terms of level of risk (we don't forget that risk is the basis of the concept of entrepreneur), but it must be considered related to the type and nature of risk accepted by the firm as well as the relevant time horizon:

- immediate = with the confirmation of the trip,

- in short-term = with the cancellation of the trip.

It must be noted that, the condition "pax minimum = 0" doesn't ensure the execution of the trip (eg. there not clients interested this products)) with the consequent reduction of bargaining power with suppliers (of course in this case the risk of the "sorrow of having lost opportunity leisure and fun "does not exist): the risk related to non-confirmation is never = 0, but can be changed only in its values and/or in its time horizon.

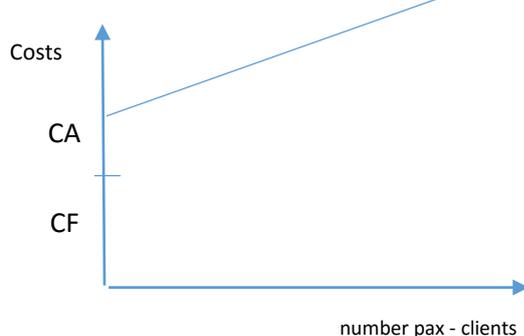**Confirmation - Opening with pax = 0**

Expenses CF and CA are fixed costs

Fig. 1

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Opening occurs regardless of the presence of customers (pax = 0) then we will certainly have the fixed costs (CF) and cost structure in order to receive the customers (CA).

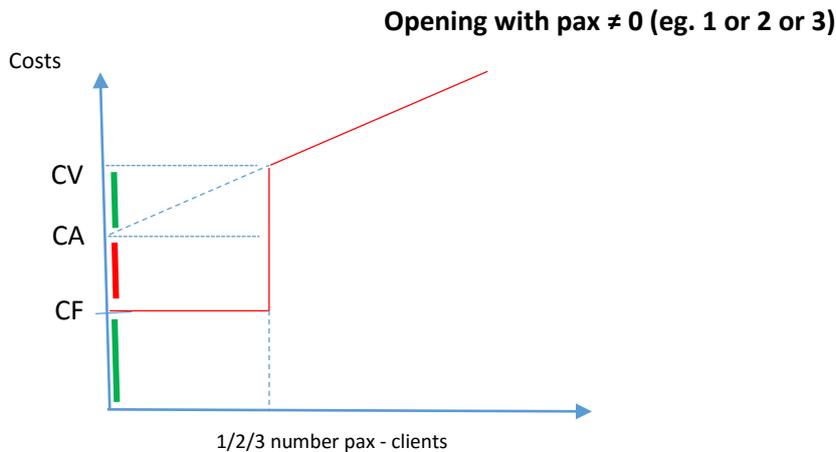**Opening with pax ≠ 0 (eg. 1 or 2 or 3)**

Fig. 2

In this case, opening depends on a certain number of presences. For presences = 0 the costs will be only the CF, the opening will activate at 1/2/3 which corresponds to a level of cost given by CF (independent of the presences) + CA (independent of the presences) + CV (the latter related to 1/2/3). From this number of appearances on the line will retain the usual behavior as a function of the CV.
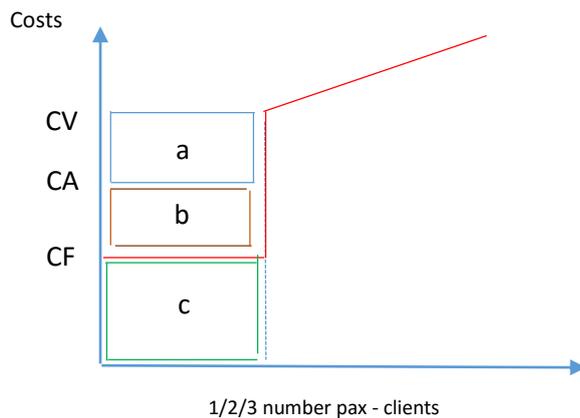

Fig. 3

Experience shows that, with the same number of clients (pax minimum) these three areas **a**, **b**, **c** are characterized by a different degree of business risk also associated with a different psychological propensity of the entrepreneur.

Area c

It was shown that this phase is mainly characterized by investments in fixed structure and intangibles when the enterprise is in stand-by situation. Certainly, these is the most expensive phase, however most resources are spent for investments, which, usually, are considered by entrepreneurs as a basic factor for business growth. With passage of time, these investments will become costs due to their depreciation (amortization), but in this instant of management this aspect is not usually so important for the entrepreneur: the concept of investment prevails on the costs related to the pre-opening phase. In short time, often this phase is not related with a potential loss by entrepreneurs.

Area b

It includes the costs for enabling the facility to receive customers. Unlike the first area that includes costs related to the acquisition and/or maintenance of the facilities or the development of specific products, the area b is made up of operating costs in services and purchases that constitute a loss of income immediate for the entrepreneur, when they are non-productive (eg. because there not clients). While interest on investment are still linked to material goods/assets (the durable/fix structure of the firm) resources spent in staff and services do not generate any return for the company, and also purchases of goods, since it is particularly food and beverages, are perishable in the short term and they are transformed quickly into a loss. These costs show the highest level of economic risk.

Area a

It includes variable costs directly related to clients. It is certainly the area characterized by the lowest level of economic risk because it linked to a real income: it says "you buy on sold." Usually this phase doesn't affect the minimum number of pax for the confirmation of the tour.

Reasonably, the choice between confirmation/opening with pax = 0 and pax ≠ 0 mainly depends on the costs of area b. Excluding the case of opening with pax = 0, the other one can comprise two hypotheses:

- the minimum number of pax is sufficient to cover the total costs: fixed costs, activation fees and variable costs. Hence, from the economic point of view, we have already stressed in the immediate as the opening is neutral, cost = revenues. Obviously, this is a quite unrealistic assumption.
  In the following formulas PV represents the sale price.

$$PV \cdot X = CV \cdot X + (CF + CA)$$

- the minimum number of pax does not cover the above costs, then the firm will assume a risk

$$PV \cdot X < CV \cdot X + (CF + CA)$$

From the equation $PV \cdot X = CV \cdot X + (CF + CA)$ the following graph is obtained:
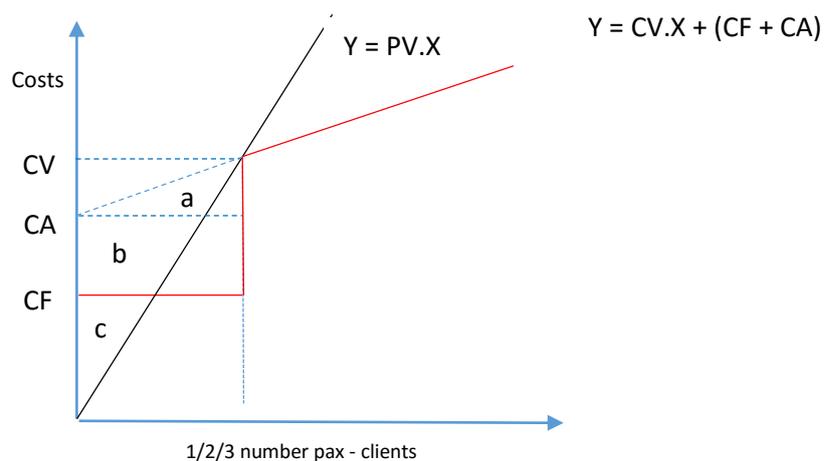

Fig. 4

Consider a minimum number of pax to start the operation, it means to find a new range of definition of the equation (old range was from 0 to infinity) new range is 1/2/3 to infinity.

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The minimum value of the x-axis (or point 0) will be 1/2/3 and the graph will become:

Y = PV.X

Y = CV.X + (CF + CA)
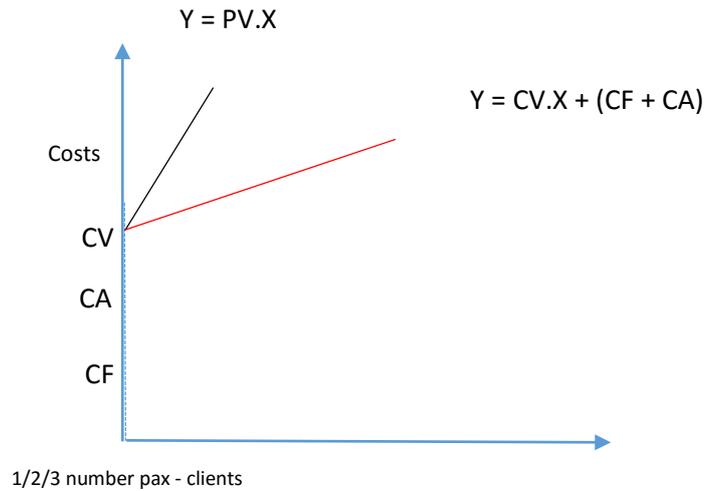
Costs

CV

CA

CF

1/2/3 number pax - clients

Fig. 5

This graph shows only the area of useful (profit), but this is true if the time component and so the negative economic effects related to the annulment of opening or travel are not taken into account. According to the goal of the present study, the case certainly more interesting, is the minimum number of pax ≠ 0, however it has already been shown that, even for the condition, minimum number of pax = 0, the risk of cancellation of the trip is ever = 0 due to the decrease in the credibility and bargaining power with suppliers.

In the immediate, the firm is not exposed to the risk/less Cv + CA + CF, but in short-term, the risk related to the cancellation of a programmed travel can completely change the shown situation. Suppose a tour operator with a schedule of some programmed departures per year (minimum 20 pax) able to confirm only 1 of them. In the first departures probably it will not detect any cost, but over the year it is reasonable to consider a moment from which the effects of the lack of confirmation of travel will lead to some new costs: the graph of costs translates upwards in the cost corresponding to this new negative element (in the graph, Cr). Therefore, the balance requires a greater number of pax to which there corresponds, however, an increase, of risk of non-confirmation. This further increases the value of Cr, the graph will move further to the upside triggering a out of control process when Cr is higher or equal to the unit margin of contribution (PV-CV).
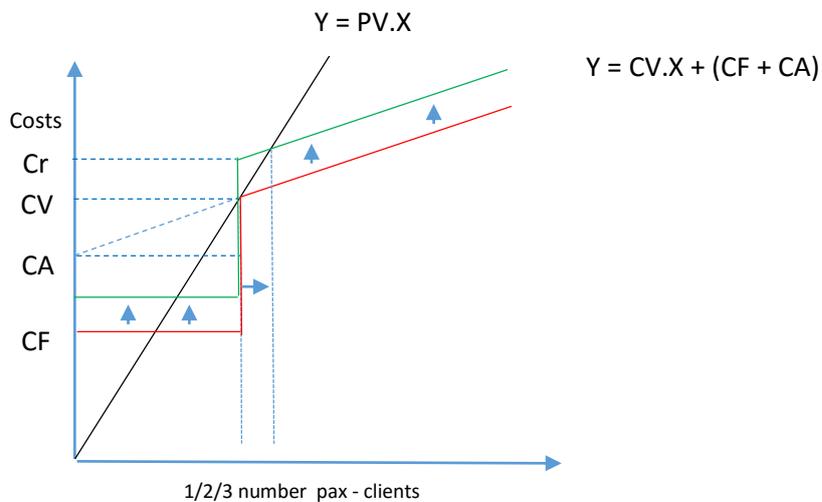
Y = PV.X

Y = CV.X + (CF + CA)

Costs

Cr

CV

CA

CF

1/2/3 number pax - clients

Fig. 6

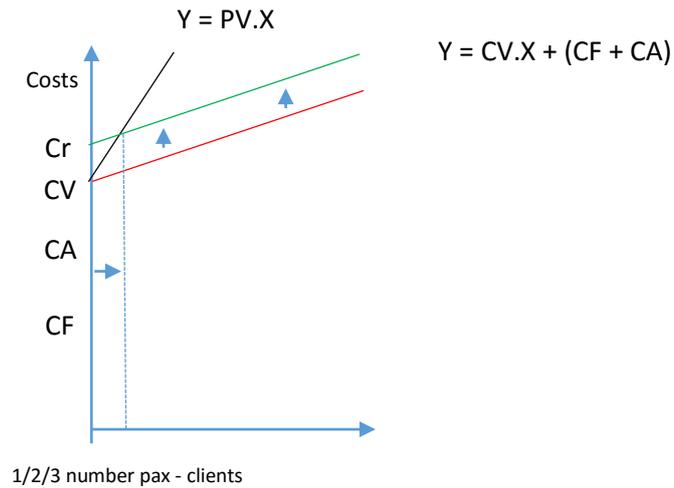Dott. PhD Fabio Cotifava – Mantova (Italy) f.cotifava@gmail.com

Fig. 7

An example may clarify this concept.

Suppose a tour operator with 7 programmed departures, confirmed with a minimum number of pax. Determine the trend of the equilibrium point assuming that does not confirm any departure due to an insufficient number of tourist (one less than the minimum number).

PV 5€, **CV** 2€, **CF** 10€, **CA** 5€ and **Cr** (unit cost for not confirmed travel, it is the cost that the company incurs to retrieve the lost customer, etc.). The *unit contribution margin is PV-CV = 3.*

From the equation x = CF + CA / PV - CV, considering 4 different values of Cr and a series of departures deleted, the following table is obtained:

Number of clients – equity/balance point			
departures	**Cr = 0**	**Cr = 2**	**Cr = 3**	**Cr = 4**
I	5	5	5	5
II	5	7	9	10
III	5	9	13	17
IV	5	10	17	26
V	5	11	21	38
VI	5	12	25	54
VII	5	12	29	75

Table 1

The table shows that when Cr is lower than the unit margin of contribution, in the example PV-CV = 3, the model finds its balance point (in the example, 11 persons), instead when it is equal or greater than Pv-CV, the lack of confirmation of departures leads to the gradual increase in the number of pax needed to achieve economic balance (there's not limit). The trend depends on this relation:

$$X_n = \frac{CF + CA}{PV - CV} + (X_{n-1} - 1).\frac{Cr}{PV - CV}$$

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Hence:

$$X_n = K + X_{n-1} \cdot \frac{Cr}{PV - CV}$$

The first departure is in balance (cost-benefit) with 5 pax. If only 4 pax are reached, the departure is canceled and the company needs to consider the cancellation cost (Cr) for each of the 4 tourists. Therefore, the second departure to be in balance requires a greater number of pax and so for the third and so on. According to the initial hypothesis, if no departure is confirmed, because the minimum number is never reached (for one unit), the series 4(5),9(10),16(17),25(26),37(38),53(54), etc is obtained (only the case of the column Cr = 4 is shown).

I	(10 + 5)/3	5
II	(10 + 5 + 4.4)/3	10
III	(10 + 5 + 9.4)/3	17
IV	(10 + 5 + 16.4)/3	26
V	(10 + 5 + 25.4)/3	38
VI	(10 + 5 + 37.4)/3	54
VII	(10 + 5 + 53.4)/3	75

Table 2

From the mathematical standpoint, this is a recurrence, iterative, sequence of first order of the type:

$$X_{n+1} = a + rX_n$$

where

r = Cr/(PV - CV)   and   a = K = (CF + A)/(PV - CV) - Cr/(PV - C V)

Its solution is: $X_n = Ar^n + B$

the mathematical name is "linear recurrence relation of first order with constant coefficients, non homoge neous case".

Hence:

if   *r = Cr/(PV – CV)* is < 1 we have a geometric sequence and its limit is B.

if   *r = Cr/(PV - C V)* is > 1 the sequence is going to infinity and does not have finite limit.

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Conclusion

A large number of tour operator include programmed departures in their catalogues in order to have much more varied tourist offer and increase their market share. However, this choice should be made very carefully because the cancellation of some of these departures can mean heavy losses for the firm, even in case of departures linked to a minimum number of clients (pax). Often, tour operator think that, thank the minimum number of pax, they will be always save from losses, but it's not true. In short time **the cancellation of programmed departures forces the firms to incur costs in order to recover lost market share as well as the trust/consideration of suppliers.** In early pages this cost/negative element has been represented by Cr.

In addition, another and much more interesting consequence/risk, related to the shown mathematical rule, must be pointed out, in fact: **especially when the unit contribution margin is equal or lower the (Cr) cost to recover market shares and trust/consideration of suppliers (promotional, advertising, discounts, more/better services etc.), the cancellation of the scheduled departures leads to a continuous increase of the number of pax needed by the financial balance, and the operation becomes quite impossible and/or uneconomical.** Quickly, the tour operator will be unable to confirm the trip due to the new minimum number of participants, hence the product will be removed from the catalog with further loss of all initial investments in research, development, promotion, etc. In nutshell, it can be stated that the number of minimum pax for the confirmation of a travel is a choice going well beyond the simple comparison of costs and immediate revenues. Risk is a character of business and it's impossible to reduce it to zero, in present case the matter is to decide between two different types of risk: immediate and defined when pax = 0, future and often undefined in the other cases.

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