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A NEW WAY TO ESTIMATE THE CARTELS' FINES

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Abstract

The EU Guidelines refine the methodology which has been applied so far (since 1998) to set fines for infringements of the competition rules. They provide a revised framework for the setting of fines. As there are a number of factors which need to be taken into account when setting a fine, it is not possible to comment in the abstract on the impact of the revised fines Guidelines in particular cases. However, the main changes incorporated in the notice mean that companies involved in a long lasting infringement in a large market should be prepared to receive significantly higher fines than in the past.This paperis an analysis of the fines' distribution, highlight the economic merits of legal regulation and an estimation of the fines' yearly turnover.

JEL Classification: L4, L5, K210

Keywords: anti-cartel, cartel fines, anti-competitive.

1. Introduction

Competition is a crucial factor for creating proper conditions for economic growth and prosperity. The role of modern competition policy is to ensure that competition is indeed effective. Secret cartel agreements are a direct assault on the principles of competition and are universally recognized as the most harmful of all types of anticompetitive conduct. Facing the challenges associated with the globalization of market economy, competition authorities around the world are increasing their efforts to design and implement modern instruments, effective enforcement procedures and adequate sanctions against cartels.

The setting of fines on cartels is a topical subject. A number of jurisdictions have revised their legislation or guidelines on fines. There is an active debate among competition enforcers and academics about the appropriate level of fines (and other sanctions) necessary in order to achieve deterrence. Increasing numbers of jurisdictions are tackling cartels for the first time, and thus

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confronting issues of how best to determine the fine to be applied. The subject of determining fines was also one of the subjects covered by various cartel workshops. Reports reviewed the different types of sanctions applied to cartels, and considered the issues relating to effectiveness and deterrence of sanctions on cartels. It covered issues such as:

- The objectives of sanctions (for most jurisdictions, the objective of deterrence outweighed that of retribution)
- Theoretical work on what kind of fines are needed to achieve deterrence. In order to achieve effective deterrence and supposing that pecuniary sanctions are the only sanctions available, in theory the total amount of such sanctions should be more than the excess profit achieved by the cartel multiplied by the likelihood of detection. However, the first of these amounts is difficult to calculate, and for the second only estimates exist whose correspondence with reality is impossible to ascertain
- Transparency of fine-setting methodologies. Some jurisdictions adopt transparent mechanisms for setting fines while others prefer to leave an element of uncertainty as to the exact amount of the fine
- The issue of inability to pay and possibly bankrupting companies with a fine
- Non-pecuniary sanctions, such as imprisonment, community service, disqualification from company directorships, and publication of offenders' names in newspapers. For the 2007-2008 ICN year, the cartel working group decided to follow up on that work by focusing on fines, and examining in more detail issues linked to principles and methodology adopted by different jurisdictions for determining fines. It was decided to focus on fines, as opposed to other types of sanctions, because all jurisdictions which prohibit cartels have fines (on companies or on individuals) as one of their sanctions or in many cases their only sanction, regardless of whether the offence is civil, administrative or criminal in nature. Some thoughts about imposing fines are:
    - the starting point for setting the fine will take into account a percentage of the value of sales to which the infringement relates, multiplied by the number of years of participation in the infringement. Under the fines Guidelines in force since 1998, the starting point of the fine is based on a lump sum, depending on the degree of gravity of the infringement, to which a 10% increase is added per year of infringement.
    - the new EU Guidelines create a mechanism of a so-called "entry fee". According to this mechanism, the simple fact that a company enters into a cartel will cost the company 15 to 25% of its annual sales in the

relevant sector. A similar "entry fee" may be applied to other types of infringements.

- the new EU Guidelines foresee a significant increase in the level of fines to be imposed on repeat offenders and, even more, on multiple repeat offenders. In addition, in deciding whether a company is a repeat offender, the Commission will also take into account decisions by national competition authorities adopted under Articles 81 or 82 of the EC Treaty . (The fight against hard-core cartels and the new EU leniency notice, 2007)

2. Cartels

A cartel is essentially an arrangement between competing firms, designed to limit or eliminate competition among them, with the objective of increasing the prices and profits of the participating companies. In practice, this is generally done by fixing prices, limiting output, sharing markets, allocating customers or territories, bid rigging or a combination of these specific types of restriction. Collusive behaviour does not always rely on the existence of explicit agreements among firms: coordination of firms' competitive behaviour can also result from situations where firms act individually but –in recognition of their interdependence with competitors– jointly exercise market power with the other colluding competitors. This is normally described as "tacit collusion".

The theory of "cooperative" oligopoly provides the basis for analyzing the formation power, and members work together to determine jointly the level of output that each member will produce and/or the price that each member will charge. By working together, the cartel members are able to behave like a monopoly by restricting industry output, raising or fixing prices in order to earn higher profits. As long as the firms adhere to the implied agreement or understanding, they can profitably raise their prices above current levels and earn greater profits. This harms their consumers who now pay more and consume less, because in order to raise prices the cartel members must restrict the output. The effects of a cartel are thus comparable to those of a monopolistic market: redistribution of surplus from consumers to producers as well as a welfare loss due to a too small quantity supplied (deadweight loss). Competition law aims at prohibiting such restrictive practices in order to eliminate sources of inefficiencies (Posner, 2001). Collusive conduct of firms can take many forms. Price fixing is any agreement among competitors to raise, fix, or otherwise maintain the price of a product or service. Price fixing can include agreements to establish a minimum price, to eliminate discounts, or to adopt a standard formula for calculating prices, etc. Output restrictions can involve agreements on production volumes, sales volumes, or percentages of market growth. Market allocation or division schemes are agreements in which competitors divide markets among themselves: competing firms allocate specific customers or types of customers, products or territories. In a bid-rigging conspiracy, competitors may agree to rotate winning bids, may divide bids, or one bidder may agree to submit an artificially high or "comp" or "cover" bid in return for a subcontract or payoff. In other words, competitors agree to restrict or eliminate competition for some piece of defined business, be it a sale, a contract, or a project (Defining Hard Core Cartel, 2005).

According to Monti (2001), cartels differ from most other forms of restrictive agreements by serving to restrict competition without producing any objective countervailing benefits. In contrast, a joint venture between competitors, for example, while restricting competition, may at the same time produce efficiencies such as economies of scale or quicker product innovation and development. In these cases, a proper analysis requires that the positive and negative effects are balanced against one another. But with cartels, there are simply no countervailing benefits. By artificially limiting competition, cartel members avoid constrains which generate innovation, product development or introduction of more efficient productions methods. Of all restrictions of competition, cartels contradict most radically the principle of a market economy based on competition and therefore are almost universally condemned. Even those who sometimes criticize the competition law for intervening into the free play of market forces accept the prohibition of cartels as inevitable. The damage caused by cartels to the economy and consumer welfare is substantial. A good indication of the direct and immediate social harm caused by cartel activity is its effect on prices. In 2008, the Commission of the European Communities made some general estimates of the harm to the economy caused by cartels. The Commission services looked at the 18 cartels which were the subject of Commission decisions during the years 2005 to 2007, the size of the markets involved, the cartels' duration and the very conservative assumptions regarding the estimated overcharge. Assuming an overcharge between 5% to 15%, the harm suffered ranges from around EUR 4 billion to EUR 11 billion for these 18 cartels. Taking the middle point of this overcharge range – 10% – gives a conservative estimate of consumer harm of EUR 7,6 billion due to these cartels. Even this figure is probably too low: the economic literature on the subject suggests that the average overcharge in prices can be as high as 20% to 25% (Moran et al., 2009).

3. Legislation and leniency policy

Secret cartels are the most serious violation of competition rules since they invariably result in higher prices. Many competition authorities in all parts of the world attach great importance to the detection of cartels. Without exception, the legal systems of the member states of the European Union include rules prohibiting collusive agreements among competitors. The detection, prohibition and punishment of cartels are among the highest priorities of the European Commission in the field of competition policy. Article 81(1) of the EC Treaty4 prohibits "all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the common market". Article 81(1) provides a non-exhaustive list of practices caught by the above provision, which includes:

- price fixing;
- output restrictions; and
- market sharing.

Article 81(2) provides that any agreements or decisions prohibited pursuant to article 81(1) shall be automatically void and unenforceable without the need for any act or finding of the European Commission (the Commission) or any other enforcement agency or court. Considering the harmful effects of cartels on society and on consumers in particular, it is also generally accepted that the rules prohibiting cartels should be accompanied by effective enforcement powers and sanctions. Since cartels are secret by definition, "the greatest challenge in the fight against hard-core cartels is to penetrate their cloak of secrecy and counter the increasingly sophisticated means at the companies' disposal to conceal collusive behavior"6. In this sense, one of the most significant contributions of recent years to the global fight against cartels is leniency policy designed so as to encourage a cartel member to confess and implicate its co-conspirators with direct evidence about their illegal activities. Although most of the national competition laws have already provided a possibility to reduce fines for companies cooperating with competition authorities during cartel investigation, but the real breakthrough in detecting and fining cartels was achieved when the existing leniency programs were changed so as to guarantee to the first – and only the first – business or individual to cooperate with competition authorities in collusion prosecution, complete amnesty or immunity from sanctions for its conduct. Worldwide, various competition authorities have developed rules on leniency, stating that a successful enforcement of the prohibition of cartels requires an effective leniency program. For the following reasons, the fight against cartels is likely to be far more effective when a leniency program is implemented (Oers, 2000): – cartels often remain undetected because the participants are well aware of the illegal character of their activities and are anxious to conceal all evidence. The programs that encourage participants in a cartel to come forward with inside information allow for a faster, more effective and successful dissolution of secret cartels; – to date, most harmful cartels operate internationally, which makes it even harder for the authorities involved to produce sufficient evidence as they are (partly) located outside their jurisdiction. Parties enjoying the benefits of a leniency program may provide evidence which the authority involved would otherwise be unable to obtain; – the success of a cartel very much depends on the cartel members trusting each other (not cheating) (OECD reports: Hard core cartels, 2000). The mere existence of a leniency program weakens a cartel as it adds an instrument for cartel members to cheat on each other. Creating more tension among its members, a leniency program may effectively hinder the existence of long-lasting cartels. The experience of the United States and the European Commission has shown that a properly structured leniency program can dramatically increase the success of a fight against cartels. There is another, overriding aspect to a successful leniency program: there must be a credible threat of severe sanctions for participating in a cartel. Unless cartel operators are at risk for a substantial punishment in case their agreement is discovered and prosecuted, they will have little or no incentive to enter the leniency program (Hard Core Cartels, 2003).1The statistical analysis of fines imposed by the European Commission on companies that infringe the EC Treaty rules leads to the conclusion that the success of the leniency policy by increasing the number of prosecuted cartels is based on the synergy created by the joint application of the guidelines on the method of setting fines, adopted by the Commission in 1998 in order to enhance transparency as to its fining policy, and the Leniency Notice. Compared with the period 1995–1999, the total amount of fines imposed on the companies in cartel cases increased 12 times.

3.1 Hard Core Cartels OECD

The Committee intends to promote effective action against hard core cartels as vigorously as its resources permit. The Committee's choice among particular projects will be made on a pragmatic basis in light of developments within and outside the Committee, and will seek to explore options that take into account. Member countries' differing levels of experience with anti-cartel activity and with international co-operation. (Hard Core Cartels: Third Report on the Implementation of the 1998 Recommendation 2005) The criterion for all such choices may sometimes be difficult to apply but is simple to articulate – what work by the Committee is most likely to provide the greatest benefits to promoting effective action to halt and deter hard core cartels?

4. Setting of fines

We consider that the amount of fine a ($D(x_1,x_2,\ldots,x_n) = a$) imposed on a cartel, does not depend solely on deterministic parameters but on the values taken on by several stochastic parameters associated with the system (e.g. the prevailing political situation, the environmental conditions, the economic crisis, etc) which are only approximately assessed. So there is an uncertainty - randomness in the amount of the fine imposed [Connor, J.M. and al. (2006)]. The impact of the cartel formation and its operation, on the social welfare can be expressed by the function D and depends on a number of variables $x_1,x_2,\ldots,x_n$ (e.g.: x_1 is the price of the product 1 which contributes to the social utility function, x_j, x_{j+1}, x_{j+2}, are variables characterizing the social welfare, x_{j+m} is a variable representing unemployment, and so on).

The penalty imposed on a cartel will not always be alike the penalty imposed on the same cartel at a previous time or to a cartel with similar operation. The penalty will vary due to a variety of causes. Therefore we can consider the penalty u to be a "random" variable. The mean μ of this "random" variable can fluctuate by appropriately modifying the yearly revenue of a company which is a member of the cartel. It will be assumed however that the standard deviation σ is a constant, independent of the yearly revenue. The density function of u, is: $f(u,\mu)$ so that the probability that u lies between u and $(u + du)$ is: $f(x,\mu)dx$. In order to pass inspection (from the competition authority), the penalty u must lie in the interval $[u_1, u_2]$, that means: $u_1 \leq u \leq u_2$. If $u<u_1$ there is no penalty imposed. If $u > u_2$ the decision can be reworked.

If W decisions are taken by the competition authority per year, with an average penalty-price u, the expected number not forced upon the members of cartels is: $\int_0^{u1} f(u, I?)\, du$ (where the integral is simply the probability that the penalty imposed will be less than u_1). Similarly the expected number which will be reworked (with an average penalty u) is $\int_{u2}^{um} f(u, I?) du$ du with u_m the maximum penalty price that could be imposed. The authority of competition does not rework the decisions with $u > u_2$. Instead it hands over these cases to a consultants office at a price of p_1 each, for rework. Each case which passes inspection costs a price $p > p_1$. The cost of labour and the overhead cost for each case which passes inspection is k. It is desired to determine the value of μ which maximizes the expected yearly profit. Thus the expected yearly profit R of the competition authority is:

R(μ) = pw[1 - $\int_0^{u1} f(u,I?)\,du$ - $\int_{u2}^{um} f(u,I?)du$] + p_1w$\int_{u2}^{um} f(u,I?)du$ - wk

The value of μ when R attends its maximum must be:

$\frac{\partial P}{\partial \mu}$ = 0 = -W[p$\int_0^{u1} f(u,I?)\,du$ + (p – p1)$\int_{u2}^{um} f(u,I?)du$]

Let us now assume that u is normally distributed.

Then *f(u,μ)* =$\frac{1}{\sigma\sqrt{2\pi}} e - \frac{(u-\mu)^2}{2\sigma^2}$ and $\frac{\partial \int}{\partial \mu} = \frac{1}{\sigma^2\sqrt{2\pi}} e - \frac{(u-\mu)^2}{2\sigma^2}\ \frac{(u-\mu)}{\sigma}$.

We substitute: $v = \frac{(u-\mu)^2}{2\sigma^2},\ v_1 = \frac{(u1-\mu)^2}{2\sigma^2},\ v_2 = \frac{(u2-\mu)^2}{2\sigma^2}$

We assume that the areas under the normal curve to the left of u=0 and to the right of u = u_m are negligible, so that the lower limit (0) may be replaced by (-∞) and the upper limit u_m may be replaced by ∞. Then we have:

$\int_0^{u1} \frac{\partial f(u,\mu)du}{\partial \mu} = \frac{1}{\sigma\sqrt{2\pi}} \int_{-\infty}^{v1} e^{-v} dv = \frac{1}{-\sigma\sqrt{2\pi}} e - \frac{(u1-\mu)^2}{2\sigma^2}$ and

$\int_{u2}^{um} \frac{\partial f(u,\mu)du}{\partial \mu} = \frac{1}{\sigma\sqrt{2\pi}} \int_{v2}^{\infty} e^{-v} = \frac{1}{-\sigma\sqrt{2\pi}} e - \frac{(u2-\mu)^2}{2\sigma^2}$.

Thus the condition $\frac{\partial P}{\partial \mu} = 0$ becomes:

$$p^e - \frac{(u1-\mu)^2}{2\sigma^2} = (p - p_1)e - \frac{(u2-\mu)^2}{2\sigma^2}$$

or $2\sigma^2 \ln\left(\frac{p}{p-p_1}\right) = (\mathrm{u}_1 - \mu)^2 - (u_2 - \mu)^2$

Hence the unique solution is: $\mu = \frac{u1+u2}{2} + \frac{\sigma^2}{u_2-u_1} ln\left(\frac{p}{p-p_1}\right)$. The solution is unique, so this value of μ must yield the absolute maximum of the expected yearly profit.

5. Conclusions

Every cartel leads to prices above the competitive level. However, the overcharge and thus the damage caused increases in the size of the cartel relative to the market. Of course, this has to be qualified with respect to market conditions. So the impact of a cartel of a given relative size is probably higher in a market with differentiated products that in a market with for homogeneous product. Thus, the joint market share of the cartel might provide a first indication of the damage caused. The damage will be supposedly small if the cartel is small relative to the market

In conclusion, leniency programs together with adequate fining policies have two major effects on cartels: in the short run they facilitate the detection of cartels and thereby reduce the costs of legal enforcement, and in the long run they deter firms from antitrust abuse by discouraging them from continuing or entering into anticompetitive collusion.

The common element to the vast majority of responding agencies is that fines are used as deterrent rather than compensation. In particular, fines are intended to deter the addressees from engaging in the same illicit conduct in the future (i.e. specific deterrence), as well as to dissuade other potential infringers from forming or joining anticompetitive cartels (general deterrence). However, in some jurisdictions, deterrence is not the only objective and the fining policy in cartel cases pursues additional goals (such as retribution, recovery of excess cartel profits, punishment). These goals are not mutually exclusive. Where fines are the only sanction, they must bear the entire burden of deterrence, and a priori may need to be higher than in jurisdictions where they are combined with other sanctions. The position of fines as the only sanction against cartels or one of a panoply of sanctions (together with jail sentences, other sanctions against individuals, civil damages, etc.) can potentially have an important impact on the approach to determining the amount of the fine.

As regards fines imposed on companies, the measure quoted by most of the responding agencies, as a basis for the determination of the fine in cartel cases, is related to the concept of turnover/volume of commerce/affected sales in the cartelised product/service. The advantage of such data is that it is relatively easy to obtain, normally collected and audited and kept as record by the companies. The alternative measure used by a number of jurisdictions is the illicit commercial gains obtained through the cartel conduct. In the majority of jurisdictions that provide for sanctions on individuals involved in cartel activity, fines imposed on individuals are statutorily capped at a lower level than for companies, often at a fixed figure. However, in some jurisdictions the fines are a proportion of the fines imposed on the companies, and therefore related to turnover. In any case we propose an estimation of the fines imposed on cartel so that we can maximize the turnover of the amount collected by the competition authority.

Generally the turnover/volume of commerce/affected sales relate to the value of business in the product/service in the affected geographical area of the party involved in the cartel. The approach adopted in all systems covered in this report is to impose sanctions on the specific undertakings engaged in the unlawful cartel conduct. However, in certain jurisdictions the fine can be extended to the parent of wholly owned subsidiaries that have committed the infringement. Such an approach has an impact on the notion of recidivism, making the parent companies in question responsible for different infringements committed by different subsidiaries.

Fines are in general related to the specific conduct of each participant in the cartel and modulated in broad terms by using a number of factors like the duration of the cartel and/or aggravating and mitigating circumstances attributable to each single participant. Fines can also be reduced for companies that co-operate or settle their cases with the competent prosecuting agencies. The inability of a company to pay a fine appears to be a factor that is generally considered in all jurisdictions, either explicitly or implicitly. In certain jurisdictions it is based on the consideration that the fine cannot be as high as to drive a company out of the market, thus causing additional harm to competition. Other factors, like the fact that the fine would impair the company's ability to make restitution to victims, can in some jurisdictions be taken in consideration as well. Some jurisdictions consider provisions setting a statutory maximum fine as a method of taking the ability to pay into consideration. It appears that in many jurisdictions the level of fines has been significantly increasing over recent years. In certain jurisdictions, there seems to have been an evolution from fining systems based on fixed amounts (for instance linked to the gravity of the conduct) to systems based on a percentage of turnover/volume of commerce/affected sales. Apart from the general principle according to which for conduct to be considered as a crime/offence, there must be a legal provision establishing it and imposing a specific punishment on the perpetrators of such conduct, a certain degree of transparency with regard to the determination of fines appears to be required also with the view of providing the appropriate incentives for companies to co-operate or settle with the authorities.

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"SKILLS" IN THE KNOWLEDGE ECONOMY: A CONCEPTUAL FRAMEWORK

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Abstract

The purpose of this study is to provide an overview of the emergence of skills and competences in the economy and the society in the last decades. In addition it attempts to present the special efforts of theorists and policy-makers to investigate and unpack the word "skill" in view of the complexities it is associated with and the impact it has on our professional lives. Finally it refers to the long debated "gap" between the desired and the actual skill level of the workforce and the responsibility of Higher Education to support graduates' employability by enhancing their professional skills.

JEL Classification: J24, I25, M00

Keywords: professional skills, competences, business, Higher Education, development, skills' gap

1. Introduction

The words "skill "and "competence" has been a truism in the literature of last decades. These words have received various meanings and have attracted or created as much problems around them. In addition, one should examine the circumstances under which the terms emerged and the signals they send out to the society. Sometimes they are used interchangeably; sometimes their meanings differ depending on the context and the place they are used.

"Skill" is a multi-dimensional and dynamic concept yet still its meaning is ambiguous. For this reason proxies are used to measure skills. Formal qualifications and occupations are usually used as the most common proxies for skills. For example in UK the NVQ (National Vocational Qualifications) programme and in Europe the EQF (European Qualifications Framework) have categorised occupations according to skills required. In Greece the corresponding NQF (Hellenic Qualifications Framework - HQF – Εθνικό Πλαίσιο Προσόντων) is being finalised recently.

Skill is a concept that seems to have attracted considerable attention from

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the part of theorists and researchers who have been examining it to reveal meanings and more importantly impacts on the workforce and society (Lloyd and Payne, 2010). However, the real meaning of skill in the life of people seems to be more complicated that the dictionary definition implies and ambiguity over meaning is increasing as people in different countries give different meanings to it (Clarke and Winch, 2006).

This paper is structured as follows: Section 2 provides definitions and meanings of the words “skill” and “competence” and investigates how the concept of skill has evolved. Section 3 provides an epistemological overview of skill. Section 4 presents the role of skills in the knowledge economy. Section 5 presents issues related to skills development and the economic performance. Section 6 analyses the work context evolution and the skills’ gap. Section 7 refers to the role of Higher Education to advance skills and competences and support graduates’ employability.

2. The origin and the dimensions of “skill”

The world economy is changing at an unprecedented rate. The forces of globalisation and technological progress are altering the way that people all over the planet live and work. Within this framework of continuous changes the notion of skills has been the centre of research and attracted the attention of many theorists and researchers from a variety of disciplines. Among them policy-makers and educationalists are examining how the development of skills can contribute to increased employability and improved professionalism of Higher Education graduates.

Looking at the definition of the term “skill” the American Heritage Dictionary gives the following definitions: a) Proficiency, facility, or dexterity that is acquired or developed through training or experience b) An art, trade, or technique, particularly one requiring use of the hands or body c) a developed talent or ability: writing skills.

The term “competence” in the American Heritage Dictionary is defined as a) the state or quality of being adequately or well qualified; ability b) a specific range of skill, knowledge, or ability.

The European Centre for the Development of Vocational Training (Cedefop, 2011) defines skill “as the ability to perform tasks and solve problems”. EC (2008) offers clear definition on three interrelated concepts: knowledge, skills and competences as following: “Knowledge” means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. In the context of EQF, knowledge is described as theoretical and/or factual; “Skill” means the ability to apply knowledge and use know-how to complete tasks and solve problems. Skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments); “Competence” means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development. Competence is described in terms of responsibility and autonomy.

Cedefop (2011) for the term “competence” refers to the “ability to apply learning outcomes adequately in a defined context (education, work, personal or professional development). Competence is not limited to cognitive elements (involving use of theory, concepts or tacit knowledge); it also encompasses functional aspects (involving technical skills) as well as interpersonal attributes (e.g. social or organisational skills) and ethical values. It is obvious from the above definitions that the term “competence” is wider from the term “skill” and includes more attributes and a complete picture of what an educated and / or experienced person can accomplish.

The notion of “skill” is far from being unproblematic and it requires extensive and spherical examination. Attewell (1990, p. 422) mentions that apart from sociology the concept of skill is important “in economics, psychology, education, computer science’s “artificial intelligence”, and in the area known as human factors or ergonomics”. Ashton (1999) describes the process of skill formation as a “paradigm shift” involving “the culmination of a number of different intellectual developments” and the movement toward a “genuine interdisciplinary perspective and the abandonment of the restriction on thinking imposed by conventional academic disciplines” (p. 347). Lloyd and Payne (2004) stress the need for a multi-disciplinary approach to analyse skill by “drawing upon the insights from fields as diverse as economics, politics, industrial relations, sociology, history and cultural studies”.

Other theorists believe that “skills” are the new name for some old characteristics of employees that employers always were looking for among job candidates. Grugulis, Warhurst and Keep (2004) refer to the growing tendency to label as skills what in earlier times would be called such as: personal characteristics, attitudes, character traits or predispositions. Examples of these characteristics include leadership, motivation, positive attitudes towards change and authority, politeness, compromise and respect. Evidence shows that as early as 1906 employers were asking from the children of working class in advanced schools of those days to have good character, qualities of subservience and general handiness (Reeder, 1979, cited in Grugulis, Warhurst and Keep 2004, p. 7).

Other theorists connect the word skill to the Aristotelian word techne or technique (Aristotle, 1925). It seems that Aristotle used the word techne with a double meaning (Dunne, 1993); firstly as the rigid application of a rule and secondly as following a rule in a way that demands interpretation, assessment of materials being used and situational awareness. In the latter aspect the word techne is closely related to the word phronesis or practical wisdom (Carr, 2003). The modern notion of technical work implies something more than craft skills in the traditional sense, exercised in a flexible and reflexive way. Modern notion implies as skill the application of a body of theoretical knowledge to a practical problem (Clarke and Winch, 2006).

3. Skill: a multi-disciplinary term

Attewell (1990) states that "at the core of all definitions of skill is the idea of competence or proficiency, the ability to do something well". The word includes both mental and physical proficiency (i.e. skill implies understanding or knowledge), but it also connotes physical dexterity (Polanyi, 1958). Etymological analysis reveals an additional ambiguity. Skill is the ability to do something, but the word also connotes a dimension of increasing ability. While skill is synonymous with the word "competence", it also implies that the person with a specific skill also possesses expertise, mastery, and excellence. Therefore, for Attewell, it is unclear whether the term indicates mere adequacy or superior, extraordinary ability. He notes that this distinction is not trivial. "Distinguishing between skill as mundane accomplishment and skill as virtuosity can give us theoretical insight into the mechanisms that underlie skilled activities. Not distinguishing between these two senses of the work can lead to conceptual confusion" (p.423). The concepts of skill, competences, knowledge, qualifications, need to be addressed very carefully since they have different foundations and implications for the relationship between occupations and wages in each nation (Clarke and Winch, 2006). European Union has recognised these implications and in the framework of Lisbon Agreement (2000) set the targets for comparing different national vocational frameworks.

Policy-makers and theorists, Educational Ministries in many European and other countries (CBI, 2003; Council for Industry and Higher Education, 1996), European Commission (EC, 2006; EC, 2010) and international organisations (OECD, 2011), have approached the notion of skill assuming there is a single, objective "logic" of skill waiting to be discovered, measured and used for cross-national and historical comparisons. Other theorists approach the concept of skill as a social phenomenon that develops in specific social contexts, for example in between groups, and is not the possession of a specific person (Brown and Duguid, 1991; Fenwick, 2006).

Attewell (1990) provides the epistemological and ontological basis behind these two approaches. For him the "positivistic" view is the school of thought that treats skill as a feature which is open to quantitative measurement and believes that this attribute or quality has an objective character independent of the observer.

Positivists have to answer two questions: First, should skill be treated as a measurable attribute of persons or of jobs/tasks? Second, how can somebody measure obviously different skills? Is there a common yardstick that underlies varied skills? Creating a common yardstick proves to be a very difficult problem, considering the demands of positivists for reliability and validity concerns. The positivists risk to end up either with a measure which is too narrow or too wide and critics argued that what appear to be rigorous measures of skill in fact involve arbitrary or unreliable judgments. Positivists ended up with the notion of complexity in their effort to measure and compare skills possession among individuals.

At the opposite side lies the "ethnomethodological" paradigm arguing that all human activity, even the most mundane, is quite complex. Ethnomethodologists insist on observational research in which the researcher thoroughly immerses in the details of the daily work while resisting the worker's "natural attitude" of allowing the knowledge and skill from becoming invisible and taken for granted. This takes much longer than conventional interviews. Ethnomethodologists reject the positivists' belief that skill equals complexity and argue that one should study members' practices for conferring on an occupation the title of "skilled work".

A third paradigm is that of the "Neo-Weberian" or "social constructionist" school. This school of thought attempts to understand and explain the conditions under which occupations are socially considered as skilled and the processes by which some jobs result to enjoy a higher status than others. In Weberian analysis, occupations compete for power and prestige. They employ several ways to achieve this. Some of them include the effort to gain power by restricting entrance to the profession (from medieval guilds to modern-day credentialism), the right to limit competition among qualified practitioners, the legal authority to discipline errant members of the occupation (Collins, 1979). Even where legal monopolies cannot be obtained by the state, social closure may be partially attainable through trade union insistence on closed shops and control over apprenticeship (Turner, 1962) or via non-legally mandated educational credentialism.

Collins (1979) argues that restriction of entry into an occupation not only brings economic rewards to practitioners but assists the claims of that occupation to high skill and consequently to high status. The lengthy periods of apprenticeship or training help build a public image of a profession that requires exceptional knowledge and preparation. "Backstage" occupational practices are kept hidden, particularly those that "demonstrate the uncertainty or confusion of practitioners or the routine nature of some work, while publicly visible displays are stage managed and portrayed as highly complex. Thus crafts (or mysteries as they are once known) develop jargons with which to impress their customers. For example, doctors prefer to describe symptoms in Latin (Attewell, 1990, p.436).

The social importance and perceived skill of a profession are usually viewed as depending on the capacity of the occupation to protect itself from market competition and control training and socialization into the occupation. This behaviour of occupations raise doubts whether the elevated status and claims to skill are purely a matter of social construction and supply/demand or whether they rest on real technical skills or task complexity (which are then exaggerated for purpose of occupational self-growth).

Ashton and Green (1996) refer to skills in terms of social attributes, general education, training, qualifications and technical skills. Mournier (2001) considers three dimensions or "logics" into skills notion embedded in historically specific economic and political settings. Under this perspective the primary question and the focus is not anymore whether the skills requirements are increasing but what role can skill play in economic and social renewal (Buchanan, Watson and Briggs, 2004). Mournier (2001) argues that the notion of skill should not be approached through a substantivist viewpoint. Efforts to provide a homogenous definition of skills produce a single logic that neglects the social process of defining skills and assumes that skills can be compared through time and space. Mournier defines the logic of skill as social force (the interaction between social actors, institutions and social values and norms) acting in a given direction. The three major components that constitute skill are: a) Technical, related to the exercise of labour power, and determined by equipment and productive methods b) Behavioural, related to the subordination aspects of employment relationships, and reflecting the "personal qualities of the worker to deal with interpersonal relationships in dependent and subordinated labour; and c) Cognitive, related to the level and kind of general education and training undertaken by a population to help it understand and act in the world. Inherent in Mournier’s’ theory are the terms of citizenship and employment. This approach to the definition of skill emphasises the interface between skill and work, education and social structures as a skills regime.

Relevant is the notion of skills’ ecosystem (Finegold, 1999) that refers to high skill regions underpinned by interlocking networks of firms, markets and institutions. Buchanan et al., (2001, p. 21-22) referred to “clusters of high, intermediate or low-level competencies in a particular industry or region” and reinforced the emphasis on the interlocking networks of firms, markets and institutions, conceived as a form of “interdependence”. Such ecosystems do not settle at some level of equilibrium but continue to “evolve and adapt in respond to external and internal stimuli”.

Additionally one should not ignore the connection of “skills” to the notion of “emotional intelligence” (Goleman, 1996). Kathy (2001) argues that emotional intelligence is a set of measurable and learnable skills essential for success in school, work, and life. Considering the number of economic, health-related, ethnic-racial, cultural, geopolitical and environmental challenges within societies it is indispensable for citizens to possess not only well-developed intellectual abilities, but also equally impressive social, interpersonal, emotional skills as well as the ability to get along effectively with others (Birwatkar, 2015). Businesses today continually need employees and leaders who are adaptive, work effectively, who constantly improve systems and processes and are customer focused (Lisa, 2007 cited in Birwatkar, 2015).

4. The role of skill in the knowledge economy

As technology progressed the last decades the society and the working conditions have been transformed. Manufacturing has given more space to service industries and white-colour workers outnumbered the blue-collar workers (Aron, 1962; Bell, 1974). But most importantly power is not any more derived from property and position but from knowledge and more specifically from theoretical knowledge. The financial –industrial elite is being replaced by a professional-scientific elite. Entrepreneurs are being replaced by scientists, engineers and technicians.

Education is playing a crucial role as is the means toward the attainment of technical skill. Skilled jobs require “perceptual and conceptual skills” that need to be renewed if workers want to maintain employability. Knowledge and learning are the means to continuous upskilling and consequently the “learning force” (has been) already greater than the workforce” (Trist, 1974, p. 112). Stehr (1994) described the changing nature of economic activity within industrial societies as a series of shifts from a material to a monetary and ultimately to a symbolic economy. According to Stehr, people live in both a knowledge society and a knowledge economy.

Castells (1999) argued about the “network society” that included a highly skilled, creative and increasingly autonomous labour force which would become the fundamental source of creativity and competitiveness, concerned with the generation and processing of knowledge and information. Although some theorists argued long ago that modern work and the scientific-technical revolution is leading to deskilling of workers (Braverman, 1974; Zimbalist, 1979; Kraft, 1979; Baldry, Bain and Taylor, 1998), the idea of the “new knowledge economy” and the potential of the new technology and the upskilling associated with it, has excited scientists and policy-makers. The new economy is dominated by ICT and knowledge-intensive companies. It uses intangible inputs, ideas and knowledge and produces intangible outputs, services and know-how (Leadbeater, 2000). Levy, Sissons and Holloway (2011) define the following changes as the drivers toward the irreversible growth of the knowledge economy: a) The rise of knowledge and technology intensive jobs and economic activity b) Investment in knowledge-based assets or ‘intangibles’ outstripping c) investment in the increasingly well qualified and educated workforces.

The importance of the knowledge economy is an inescapable economic reality. It is possible that the shift to the knowledge economy may have caused uncertainties to people without the higher-level skills that this economy demands. However, the solution to these problems does not lie in turning back the clock, but in turning the power of the knowledge economy to everyone’s advantage. The challenge is to create a knowledge economy that provides jobs for everyone, both high and low-skilled population. Action should be taken to secure the fundamentals of knowledge economy like skills and knowledge. In the future high growth firms will not be held back by systemic weakness in management and leadership skills because they will have at their disposition a world class pool of knowledge workers (Levy, Sissons and Holloway, 2011).

5. Skills development and economic performance

The current policy – makers’ rhetoric on skills is based on the assumption that there is a linkage between economic performance, competitiveness and skills development in relation to the workplace conditions. The “political economy of skill” is related to the concept that a new era of capitalist development is coming, different from the old one, which promises a new progressive paradigm of work. Within this context three broad positions are taken by theorists and can be labelled as “the knowledge economy optimists”, “the knowledge economy pessimists” and “the sceptics” (Lloyd and Payne 2004).

The notion that the workforce is the “key” to competitive success makes some theorists very optimistic in relation to our society itself. A variety of disciplines such as economics, management science, organisational strategy and organisational behaviour (Drucker, 1993; Hamel and Prahalad, 1994; Nonaka and Takeuchi, 1995; Hammer, 1996; Boisot, 1998) have recognised and introduced the idea that knowledge and skills of firms’ workforce represents the new source of wealth for industrial economies.

For example, Carnoy (1998) claims that the transformation of work has “created the basis for reintegrating the individual into a highly productive, more egalitarian social structure”. Leadbeater (2000), argues that “our economies could become more humane…and our children will make their livings through creativity, ingenuity and imagination”. The ever increasing competition between the globalised enterprises and the rapid advancement of technology is said to require a new kind of organisation which searches for continuous improvement in product quality, design and product or service innovation. Organisations will need to become “flatter”, less hierarchical and more “trust-based” in their effort to empower the human recourses potential that “holds the key to competitive success” through higher discretion on their jobs and higher thinking levels (Lloyd and Payne 2004, p. 209). The changing work conditions do not leave the educational field unaffected. New production concepts create opportunities to develop the talents and capabilities of all (Bentley, 1998; Young, 1998; Brown and Lauder, 1999; Albrecht and Sack, 2000). New working demands shift the economy towards a new model, the “knowledge-economy” that will raise the level of skills, will improve educational methods, will support and will demand the upskilling of the entire workforce. The high-skills equilibrium in a nation results in a win-win-win situation (Clarke and Winch, 2006); employers provide high-wage and high-skill employment; employees are employed with relatively high levels of skill and remuneration; and consumers have a supply of high-specification, high-cost but affordable (for them) goods and services. Low-skill equilibrium represents the converse.

5.1 The “high skills” challenge

There are commentators who argue about important obstacles associated with the creation and effects of “knowledge” or “learning economy”. One of their points is the very limited number of workers who will manage to find high skills jobs in the high skills economy (Crouch, Finegold and Sako, 1999; Green and Sakamoto, 2000; Brown and Lauder, 2001). Even people who will remain in the low-skills sectors will have to develop the "soft" or social or behavioural or generic skills, like teamwork, communication, initiative, self-motivation, ability to deal with customers and other skills.

Westwood (2004) states that service-oriented skills and attributes are commonly referred to as "soft skills" – itself suggesting less importance than those skills described as "hard". Work conditions and career structures in service jobs like bars, restaurants and shops, fitness clubs, hotels, coffee houses, all became increasingly sophisticated.

Soft skills are evolving and in some workplaces they make up what Warhurst and Nickson (2001) have described as the demand for "aesthetic labour". Employees in such workplaces should present themselves in such ways so as to engage customers' senses – they have to "look good" and "sound good". According to the authors "aesthetic labour" will feature heavily in future job growth. To some extent, it is also applying to more traditional employers such as financial services, sales and parts of the public sector as well as amongst more long-standing retailers such as Marks and Spencers, Tesco and Asda.

Aesthetic labour is about image. Employers are looking for staff that can embody the image and experience the company is trying to sell. Aesthetic skills are likely to be a merge of characteristics like accent, voice modulation, appearance, presentation and most importantly confidence and motivation (Warhurst and Nickson, 2001). Aesthetic skills are closely related to social skills: communication, interpersonal abilities, teamworking etc. Region, gender and ethnicity are additional factors that employers take into consideration when determining the aesthetic requirements in their businesses. Brown (1999) argues that employers "harness the emotional and creative energies" of employees in order to produce quality goods and services.

Ashton and Green (1996) and Keep and Mayhew (1998) claim that "high skills" route to competitiveness and profitability for advanced economies is not a panacea. Still exist other ways like growth through takeovers, shifting investment abroad, cost-cutting, etc. And there is a large range of sectors that prefer to compete by using low skill, low wage and casualised workforce through low price and standardised goods and services (Lauder, 1999; Green and Sakamoto, 2000).

5.2 Shortcomings in the "high skills" environment

Sceptics stress the possibility that the new workplace practices do not have necessarily a positive impact on the workers’ quality of working life. The variations in the definition, rational and implementation can provoke a series of negative impacts. Research has shown that teamworking can cause work intensification and more menacing forms of control (Marchington and Grugulis, 2000), peer pressure, increased stress, undermining of trade unions and the use of peer pressure to control workers (Godard and Delaney, 2000; Geary and Dobbins, 2001).

The vision for a “high skills” economy aims in blocking-off a market for “cheap, standardised goods and services, and engineering a Scandinavian-style broad “high income consumer base” to support more expensive, quality-based production” (Keep, 2000a). Lloyd and Payne (2004) argue that behind the skills debate hides an older debate concerning the relative economic decline in UK, the complex relationship between industrial and financial capital and the absence of an industrial policy to modernise the Britain’s manufacturing base. The issue is, given the radical institutional changes in need to pursuit the “knowledge-driven” and “high skills” society, where change will come from and who will be the agent of change.

Commentators who talk about a political economy of skill stress the need for a more holistic, “societal” approach to skill formation issues. In this framework a shorter linkage is required between government agencies, the education and training system, labour market regulation, employment structures, and systems of finance and industrial relations that shape the skill trajectory of a given economy.

Buchanan, Watson and Briggs (2004) argue that reforms have not resulted in a demand-driven system in Australia, but instead a system of business welfare: employers have merely shifted training costs to the state, not improved their contribution to skill formation (Hall et al., 2002; Watson et. al., 2003). In following Mournier’s (2001) framework of three dimensions or logics (technical, behavioural, cognitive), they state that skills are important for defining humans as a collective force in production and in politics (at work and in society).

Technical skills are important however should not neglect the importance of the other dimensions. The behavioural dimension defines people as workers and not merely as “labour”, whereas the cognitive dimension deals with people as citizens not merely as productive beings. The workplace context is equally important and if neglected then the management could end up controlling most of the key processes and outcomes associated with skill development and use. The authors suggest that the debate on the skills should move from preoccupations about “labour” and “economic development-growth” to the ideas of "sustainability" and "promotion of fair and enduring social relations". In this endeavour education can support the idea of a rewarding life without aspiring to ever higher levels of consumption. A vision of life is needed beyond productive activity to guide political calculation and mobilisation. Skills should escape from the restricted notion of technical competences to the broadest possible sense of behavioural and cognitive capabilities (Lane, 2000).

An important shortcoming of the skill concept, already mentioned above, are the differing connotations attached to it that impact comparisons and common policies in the European level. Clarke and Winch (2006) highlight the different meanings of skill between the Anglo-Saxon and the continental Europe nations and the implications these may have in industrial relations and the workforce wages. The authors argue that the main characteristics of the Anglo-Saxon concept of skill are: a) skill tends to be regarded as an individual attribute or property b) It is associated with tasks and jobs rather than occupations set within an industrial context c) It is associated with physical / manual mastery or ability d) It has no particular association with a knowledge base. They also argue (p. 263) that there is no German equivalent to the Anglo-Saxon concept of skill. The equivalent of a "skilled" worker is "ein qualifizierter Arbeiter" who is assumed to possess very different characteristics, having: a) a particular social and legal status and b) The ability to apply theoretical knowledge in a practical industrial context.

The previous differences have a great impact on remuneration and employment of skilled workers between European nations. The biggest differences exist between the Anglo-Saxon model and Germany and Scandinavian model especially in relation to the cooperation between the societal partners (employers, trade unions and the Government) (Clarke and Herrmann, 2004).

The European strategy for smart, sustainable and inclusive growth (Europe 2020) in an effort to overcome the above problems affirmed the development of a common language between education/training and the world of work. Within this framework "ESCO" classification system is currently being setting up. ESCO is the multilingual classification of European Skills/Competences, Qualifications and Occupations. ESCO identifies and categorises skills/competences, qualifications and occupations relevant for the EU labour market and education and training, in 22 European languages. It provides occupational profiles showing which competences and qualifications are relevant for an occupation. ESCO is using a competence-centred approach that can enable a better job matching allowing for the flexibility needed on the labour market.

Polarisation of skills is one more issue of concern. Polarisation entails jobs requiring higher skills on one end and jobs requiring lower skills on the other end of the market. Tomé (2007) found that in Portugal (a low skills economy) there exists polarisation of skills. High skills, high tenure and high skills education seem to generate employability. However since Portugal has a very dual labour market, low skills, low education and low levels of tenure also generate employability on the other side of the market requirements. Hilton (2008) expresses fears of sociologists, economists and other theorists on the polarisation of skill requirements in U.S. and the resulting wage disparities in the society. In Greece there are no "polarisation of skills" phenomena as there is a mismatch between "the spectacular demand for higher education and the relatively weak demand of the Greek economy for highly qualified workers" (Liagouras et al., 2003, p. 424). This paradox may mean that Higher education's structure may not be so guilty for the high rates of graduates' unemployment.

6. Work context evolution and the "skills' gap"

Intense knowledge advancement tends to dominate certain sections of the economy however there are significant imbalances according to employers and policy makers, between the workforce capabilities and skills to keep up with the working environments' constant flux and evolutions. Among the reasons of the imbalances, researchers include the globalisation of the economy, the technological advancement and the changing work process. Globalisation has caused industries to operate on a much shorter timescale. We notice a faster pace in every aspect of business life, from the private to the public sector. In the private sector, stockholders expect better returns on their investments, much more information and press managers to achieve short-term performance targets (Keep, 2000a). In the public sector, the changes include the demands of voters to receive greater services with lower costs (taxes).

Organisations are better organised through teamwork and work discretion. Hammer (1996) argues that in the post-industrial era, in a process-centred organisation, self-managed workers are responsible for both performing work and assuring it is well-done. "There is no longer a great divide between "doing" and "managing". Management is no longer an esoteric and inaccessible skill reserved for remote and privileged elite. It becomes part of everyone's job" (p.43). In the past workers and professionals would stay in the same job perhaps for a life-time. Today the firm needs to quickly adjust to the changing market conditions and become "a flexible firm" that will hire the skilled personnel that can respond to the firm's needs.

On the other side, the employees themselves want to be prepared for their next job and try to acquire the necessary skills for this. Under these conditions within the flexible firm only a portion of the total people employed in a firm still falls into the primary core group of workers. Herbert and Rothwell, (2005, p. 25) argue that every person is more or less a semi-permanent employee.

Handy (1990) coined the term “portfolio worker” to describe the person that takes responsibility of his own career, seeking opportunities and developing the right skills that will prepare him for the next stage of his working life. Two terms describe very well the post-Fordist working environment; “delayering” and “empowerment”. “Delayering” is the word that reflects the process of restructuring by taking layers of management out of the organisations’ chart. In this way more people are doing rather than supervising, but those doers should be able to supervise themselves.

As Hammer (1996) argues there is no place for the conventional supervisor in the new working environment. He also states (p. 42) “…no supervisor or overseer can “supervise” an individual or a team performing the wide range of tasks that constitute a process”. “Empowerment” reflects the culture of giving more responsibility to workers who should have greater discretion on how they manage their job. Both terms imply that workers can work in self-directed work teams which are appraised by the target outcomes of their performance rather than being told exactly how to do the job with constant supervision (Herbert and Rothwell, 2005).

In the new environment workers are having greater discretion at work and the opportunity to show personal autonomy and the authority to make decisions. “Process –centred jobs have virtually nothing in common with traditional industrial era jobs, whether blue, pink, or white collar. They do have a great deal in common with the kinds of jobs normally held by professionals. The inevitable consequence of process-centering an organisation is professionalising its work”. The professional must be a problem-solver able to cope with unanticipated and unusual situations without running to management for guidance. This requires a reservoir of knowledge, grounding in the discipline that underlies the job as well as an appreciation for how this knowledge can be applied to different situations (Hammer, 1996, p. 47). Therefore workers in post-industrial era are transformed to professionals that need constant learning and training. We witness the transition of traditional industrial firms from a task-centred to a process centred approach. Within this framework of change the consequences are big and affect all people working in a firm, either manager or worker. An engineer that works for product development must understand production, customer service, and everything else associated with developing a product and how they fit together.

Total quality management, business process reengineering, activity based costing, balanced score card are examples of continuous processes that require a wide range of hard and soft skills of the personnel at all levels. Current surveys (PwC, 2015) reveal that business recruit for a wider range of skills, they foster innovation-friendly cultures and value diversity differently. Businesses adopt new thinking models and pair Producers (the ideas people) with Performers (those who convert good ideas to good business).

The relationships of globalised operations and industrial innovations have shifted the need for a different set of expectations by the workforce. This is perceived by a gap in the skills and competencies of the workforce in order to fully support the industries. Several authors describe anomalies in the capitalist economies that are to a lesser or higher extend connected to workforce skills gap.

Livingstone (1999) and Cook et al. (2004) noticed in Canada that trade liberalisation and globalisation of markets has been accompanied by skills shortages, underemployment, and continued precarious, low-wage employment. A number of factors were identified as responsible for the changing environment like actual worker shortages due to massive retirements, increased worker mobility, unrecognised credentials and changing youth expectations (Guo, 2005).

Other factors like technological reshaping of operations, new literacies demanded by implementation of internationalised standards, accelerated innovation in product and process to compete globally are directly related to the skills transformation of the workforce (Belfiore et al., 2004). Barrett, Burgess and Campbell (2005) describe the major problems in Australia to be skills shortages, underemployment, hidden unemployment and unpaid overtime. These factors are perceived by the industry leaders and by the policy-makers as skills and knowledge gaps between what existing workers can do and what is desired performance. Policy-makers, employers and commentators point to the education’s main contribution to the skills development. Further Education, Higher Education and Adult Education have been targeted as the channels for filling the skills gap.

7. Skills in Higher Education

Within Higher Education framework, EC (2008) has recognised three pillars that can promote graduates employability: knowledge, skills and competences, and work-placements. Education and training systems are already going through a paradigm shift. Increasingly, we observe that this shift has impact on the way teaching, training, assessment and validation are organised. By using the learning outcomes approach Higher Education Institutions (HEIs) increasingly describe qualifications, qualifications standards and curricula in terms of knowledge, skills and competences. This shift to learning outcomes is reflected in the European Qualifications Framework (EQF) and the development of qualifications frameworks in all Member States. EQF is a translation tool that helps communication and comparison between qualifications systems in Europe. Its eight common European reference levels are described in terms of learning outcomes: knowledge, skills and competences. This allows any national qualifications systems, national qualifications frameworks (NQFs) and qualifications in Europe to relate to the EQF levels. Learners, graduates, providers and employers can use these levels to understand and compare qualifications awarded in different countries and by different education and training systems” .

Education and training are considered vital and relevant research shows that Higher Education should and can help in this direction by adjusting teaching approaches students’ assessment methods work-placements, service learning, educational tools, use of ICT and other innovative ideas (Knight and Yorke, 2003; Hassall and Milne, 2004; Tonge and Willett, 2009; Devlin and Samarawickrema, 2010; Crossouard, 2010; Drake, 2011; Marriott and Teoh, 2012; Wilton, 2012; Stes et al., 2012; Barabasch and Watt-Malcolm, 2013; Apostolou, Dull and Schleifer, 2013).

Conclusion

The term “skill” is considered a multi-disciplinary, still ambiguous, highly needed quality of today’s workforce, either for managers, employees or workers. Whether skill is an ability that can be acquired or it is the result of the context that a person lives and works in, it is recognized as a main component of the knowledge economy and the knowledge society. Sceptics despite the difficulties and negative comments still believe that “the high skills route” remains a viable and desirable option, given the social and distributional outcomes. The “high skill route” offers “a substantial expansion of freedoms that accrue to a well-educated and highly trained population” (Ashton and Green, 1996, p. 191). Moving to a high skills trajectory however requires major shifts in the “demand for skill” as part of a proactive industrial policy (Lloyd and Payne, 2004). Renewal of the professional skills (either soft or hard) requires constant effort in order to keep pace with the globalization effects and the ever changing technological advances. Educationalists and policy-makers have undertaken important tasks in this direction however surveys indicate that business society expects more to be accomplished in the future (PwC, 2015).

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THE ABILITY OF PREDICTIVE ANALYSIS OF FINANCIAL TOOLS IN FUTURE EARNINGS

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Abstract

This study focuses in researching the predictability of future earnings through the interpretation of financial analysis tools. The analysis is based on quarterly results of financial ratios derived from the quarterly published financial statements of companies in the oil and gas industry. The results show that the course of future profits can be predicted from the study of financial analysis tools both individually in a company of such industry and the sector as a whole.

JEL Classification: M40, M48

Keywords: Future earnings, predictability analysis, financial tools

1. Introduction

It is well known, the profit level of a firm affects in many ways its financing options and play an important role in making an investment decision. Therefore, according to Lewellen (1969) and Malkiel (1981), the estimate of future profits affects not only the internal environment of the firm but the external environment of the persons who are interested in this, for example investors, bankers etc.

Significant on this subject is the opinion of Graham et al. (1962), who characterize future profits as «...the most important parameter for determining the value of shares...», and of Bernstein (1974) who supports that «...the investment analysis, the analysis of solvency of enterprises and most of the other forms of financial analysis, give so much weight to future earnings, so that he present and historical profits have value only because they help in the assessment of future profits».

Many researchers have dealt with either the same prediction of profits, with the purpose of estimating the amount of future profits, or with the capacity of selected variables to interpret the future profits. Some argued that there is a

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possibility of prospective capacity, with the pioneering work of Fama (1965), who was the first who noticed that profits do not follow a random course of action (Random Walk). Some have questioned this conclusion, believing that the historical earnings, are regardless of the future earnings.

The purpose of this study is to examine if the financial statements, and especially the financial analysis tools (financial ratios) present important traits of prospective capacity regarding the course of future profits, and therefore are reliable tools for conducting, mainly short-term, prediction.

It should be noted that most studies in the bibliography of the financial sector are focused on forecasting future profits, giving attention to the predictability of future stock returns.

The rest of this study is organized as follows: The second chapter reviews the bibliography associated with this particular study. The third chapter approaches theoretically the methodology and the analysis steps which were used on this research. The fourth chapter, continues with the applied practice and comments on the results produced by the analysis tools, and finally the fifth chapter, presents the conclusions of this study.

2. Reviewing the Bibliography

According to (Ou & Penman, 1989), with the analysis of accounting statements we can predict next year's profits and predict future stock returns.

D. Henraat, G. Georgakopoulos, P.Kalantonis & M.Rodosthenous (2013) explored the most widely used methods for capitalization of the operational leases.

Fama (1965) realised that by analyzing and understanding the historical values, we can predict the future behaviour of a stock return. In order to predict the future profitability Beaver (1970) and Lookabill (1976) relied on Fama's (1965) study.

Green & Segall (1967) assessed the predictive ability of accounting (financial) statements for the first quarter, in a sample of 46 firms for 1964. They concluded that the predictions based on semi-annual and quarterly financial statements do not far outweigh those of annual data.

Brown P. & Niederhoffer V. (1968) assessed the predictive ability of quarterly financial statements. In their final conclusion they realised that the quarterly statements are useful in the prediction of annual earnings and that the predictive capacity increases progressively with each new quarterly accounts.

Studies, such as Ou and Penman (1989), and Abarbanell and Bushee (1997), focused their research on the predictive capability given by the financial data.

By using multiple regression models, they studied the internal relationship between future earnings and fundamentals of Financial Statements. They formed a series of financial tools (financial ratios) and by measuring the influence on accounting profits, they concluded that the financial tools have important traits of predictive capability.

Another important study is this of Elgers and Lo (1994). They argued that the forecasting of profits are possible, by using regression models. They observed that changes in profits tend to be reversed from one year to another. Indeed they concluded that negative changes in profits reverse more quickly than positive changes.

Fama and French (2000), in a similar survey, stressed that the biggest part of the predictive power of the profits is obtained by observing the trend of the past profits. Finally, they point out that it is possible to predict even greater volatility of profits from what the one they achieved in their research, by proposing a series of amendments.

Callen et al. (1996), by using simple linear models and neuronal networks, in a sample of 296 companies listed on the Athens Stock Exchange in New York (NYSE), went on an estimate of future profits. Then they compared their results with the actual earnings. As they approached more accurate earnings, forecasts for the corresponding period for most companies in the sample they concluded that the simple linear models gave better estimates than the neural networks. They also realised that their results show that the method of neuronal networks may not be suitable for analysis and forecasting financial variables, as the data showed significant weakness in estimating future profits.

On the other hand, Schniederjans (2004) who studied a similar sample to that of Callen et al. (1996), included 289 companies listed on the Athens Stock Exchange in London. He examined the predictive abilities of four methodologies (simple and multiple linear models, simple & multiple neural networks) to predict (quarterly) future profits. Within the multiple models he used variables derived from the published financial statements of the Companies. He concluded that the neural networks in their simplest form lack their predictions against simple linear regressions and show good estimations of future quarterly profits. But when we compare multiple models (linear models and neuronal networks), the results generated by multiple neural networks are similar to the estimates calculated from the linear. However, it failed to show that the neural networks prevail in predictive capabilities of linear regressions.

3. The structure of the research

3.1 Purpose of this research

The purpose of this study is to explore whether it is feasible to forecast future profits through financial analysis tools (financial ratios).

3.2 Methodology

This study is based on the methodology of Abarbanell & Bushee (1997). We are interested to check if there is a relationship between the financial "ratios" and future earnings, by using regression models. Our study, however, differs from the study of Abarbanell & Bushee (1997) in the following points:

1. Abarbanell & Bushee (1997) used annual financial statements to index the calculation of the ratios. We, from our side, used quarterly financial statements, based on the point of view and study of Schniederjans (2004) which state that "......the quarterly statements enable more accurate predictions than those of the semi-annual and annual because they reflect more often within an annual use the behaviour of profits, increasing the chances for a more reliable econometric result."

2. In contrast with the study of Abarbanell & Bushee (1997), who used a sample of nine in total indicators as variables, they concluded through the analysis of the simple and multiple regressions. In this study we use a larger volume of variables, based on the indicators of Cortis's (1987) research and do not use simple regression. From the use of multiple regression we ended up with a linear multivariate model with one dependent (future profits), and several independents (indicators).

3. Although Abarbanell & Bushee (1997) used companies from various industries, we concentrated on one industry and researched the prediction of both corporate profits, and profits on a sectorial level.

3.3 Sample

The selection of the indicators used was based solely on accounting figures collected from the Published quarterly statements (balance sheets and income statements) of companies in the oil and gas industry listed below for a period of 10 years (2004-2013). The collection of data comes from the database of the A.S.E through the website (www.ase.gr), as well as the official websites of the selected companies.

3.4 Stages of the research analysis

As mentioned above, based on the methodology of Abarbanell & Bushee (1997), as well as the methodology of Schniederjans (2004), multiple linear regression models where used to examine whether ultimately the dependent variable, "future profits", is influenced by some independent variable (financial ratios), and if there are one or more indicators which can give a reliable result regarding predictability.

As independent variables at time, t (where, t = quarter), based on the study of Courtis (1978) on the available accounting information from the quarterly financial statements which were used, we calculated 61 indicators.

As a dependent variable in the form of Future profits we will always use Earnings before taxes (EBT). The Earnings before taxes (EBT) have a dual meaning. They are used as a single dependent variable and as an independent variable under the name "Historic Earnings" (Et) which differentiate as follows:

1. As Future Earnings, we define the EBT, which are a time after, i.e. (t + 1), (where t = a quarter) of the independent variables of the model.

2. With the term "Historic Earnings" we mean EBT which is found a time before the dependent variable, ie the time t.

Through a multiple regression model we will examine whether specific independent variables satisfy all the necessary conditions and ultimately correlate, and thus can predict future earnings initially for each company individually, and in end for the industry.

The model of the multivariate regression model used in our study both at company and sectoral level, is expressed by the following relationship:

$$Y = \beta_0 + \beta_1 X_{t1} + \beta_2 X_{t2} + \ldots\ldots\ldots + \beta_\kappa X_{t\kappa} + u_t$$

Where:

Y: The dependent variable (future earnings)

X_{t1}, X_{t2}, …,$X_{t\kappa}$: The financial lag tools (independent variables)

β_0: The fixed term, which is not affected by the independent variables

β_i: The Coefficient of the independent variables X_{tk}, for i = 1,2,3……, and

u_t: The statistical error (bug)

Having as basic assumptions for the coefficient β_0 και β_1:

H_0:β_i= 0 there is no correlation (and thus predictive power) between the dependent variable (future profits) and a range of financial tools, which take the place of the independent variables.

Against the alternative hypothesis:
H_1: $\beta_i \neq 0$ there is correlation between the dependent variables and the independent variables.

Where:
i= 1,2,….,k

Basic assumptions that should be applied for the reliability of the regression, which is necessary to examine the validity and the appropriate management of the offense are:

1. $E(e_t) = 0$ for every t = 1,2,3, …,
2. $e_i \approx N(0,\sigma^2)$ i.e. the variables of the random error which follow a normal course.
3. $Var(e_t)=Var(Y_i)=\sigma^2$ for every t = 1,2,3, ….., which means that the price fluctuations of the random error is constant, ie there is the same gender variations (homoscedasticity) to be equal fluctuations. The violation creates the problem of the opposite of the aforementioned (heteroscedasticity).
4. $E(e_i e_j)$ for every $i \neq j$ which means that the values of the random error are not related to each other. The violation of this case raises the problem of autocorrelations.
5. The independent variables $X_{t1}, X_{t2}, \ldots, X_{tk}$ are independent with each other. The violation of this case raises the problem of multicollinearity.

The analysis and control regularity of financial indicators, enables us to proceed to the formation of multiple linear models for each company separately. From the study of these models we will examine whether or not the correlation and impact of financial tools lag (independent variables) in future earnings (dependent variable) at the corporate level. This will be the demonstration of argument which is supported by the study, namely that the use and study of specific historical variables can give us useful information to predict the future path of earnings, demonstrating thereby the predictive ability.

Then, having examined the predictive ability of financial analysis tools at the individual level (ie. Per company), we will attempt to see if "it is possible to predict the profitability of the sector and, if so, then what are those" financial ratios "showing predictive abilities.

As independent variables, we used those indicators showed predictive power individually to at least 2 of the 3 companies in the industry. I created a new database, which will include the quarterly average prices of selected variables weighted to Total Assets of each company. This weighting helps considerably the objectivity of output, since it should be taken into account in the summation of the average values of the significance of each company, depending on the size.

Thus, the weighted, quarterly value of each variable is calculated using the following formula:

$$X_{t/4} = \sum \frac{TA_{b \cdot t/4}}{TA_{t/4}} * x_{b \cdot t/4}$$

Where:

$X_{t/4}$: The aggregated quarterly value of the variable, weighted with respect to the Assets;

$TA_{bt/4}$: Total Assets of each company in the sample, on a quarterly basis;

$TA_{t/4}$: Total Assets of all companies in the sample, on a quarterly basis; and

$X_{bt/4}$: The quarterly value of the variable for each company in the sample.

Finally, based on the same modelling logic, that we implemented and on the personal / business data, we will seek to form in a sample, multivariate linear model, aiming to show here that there are some indicators related to future earnings, and thus increasing the interpretative / predictive ability.

4. Results from applied practise

4.1 Predictive ability of financial ratios at corporate level

Hypothesis: If there is a correlation of the dependent variable (future earnings) with the independent (financial ratios), hence predictive power

To begin with the company of this industry "ELINOIL", after checking a) regularity where the variables that do not follow a normal distribution removed (sig. <0,05), b) multicollinearity, where the variables that give us the same information of other variables removed, c) autocorrelation of the residues, d) omoskedastikotitas and e) linearity, we resulted with the improved model, where the dependent variable gets statistically influenced in a significant level by 12 variables and the form of the predictive equation earnings are:

FUTURE EARNINGS = 6,340E6 + 8,193E4 * (365 * Inventory / Cost of Goods Sold) - 3,355E7 * (Current Liabilities / Sales) - 3,099E7 * (Net Profit / Equity) - 6,103E7 * (Current Expenses / Sales) - 7,462E6 * (Current Assets / Current Liabilities) + 4,318E7 * (Long-term liabilities / Equity) - 3,371E7 *

(Debt / Current Assets) + 2,451E7 * (Debt / Fixed Assets) + 4,442E7 * (Sales / Receivables) + 2,119E7 * (Sales / Fixed Assets)

By observing the coefficients of each independent variable we can see the positive or negative influence on the dependent, and the amount of influence. It appears that those who exercise the greatest amount of influence is the variable «365* Inventory / Cost of Goods Sold» which exercises a positive influence and the variable «Current Assets/ Current Liabilities» negative. By saying the level of influence we mean that if the variable increases «365*Inventory / Cost of Sales» by one unit, the earnings of the next quarter will increase by 8,193E4 units, provided that the other variables remain constant. In the same manner and in accordance with the rate the variables will change if you change the dependent and the other independent.

Table 1: Interpretative ability of the linear model

Table ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	2,792E13	10	2,539E12	55,772	,000[b]
	Residual	1,188E13	28	4,399E11		
	Total	3,980E13	38			

Table Factor Assay Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	,838[b]	,702	,780	6,63215E5
Durbin-Watson test → P – Value (Sig) = 2,037				

By checking the explanatory power of the model (Table 1), it was found to be statistically significant (sig (Table ANOVA) = 0,000) and shows an explanatory power at the rate of 70,2% (R^2 = 0,702). This means that the model is quite adequate and the selected variables correlate strongly with the dependent.

To continue with the company "MOTOROIL" by following the same steps as before, it is important and we select (10) variables for the model, whereas the linear regression equation obtained, has the form:

FUTURE EARNINGS = - 5,817E7 + 4,943E7*((Current Assets – Inventory.) / Current Liabilities) - 1,170E6*(365*Demands / Sales) - 8,352E8*(365*Inventory / Cost of Sold Goods) + 6,272E9*(Current Assets / Current Liabilities) - 7,951E7*(Equity/ Total Liabilities) + 3,749E7*(Net Profit / Same Assets) + 5,302E7*(Current Assets / Total Assets) - 4,252E7*(Long-term liabilities /Same Assets) + 1,260E7* (Sales / Demands) + 3,506E7*(Total of Assets/ Equity

Table 2: Interpretative ability linear model

Table ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	1,015E17	10	4,178E15	115,493	,000[b]
	Residual	4,084E14	28	3,617E13		
	Total	1,422E17	38			

Table Factor Assay Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	,891[b]	,794	,787	3,88105E6
Durbin-Watson test → P – Value (Sig) = 2,273				

The model (Table 2) presents the interpretive capacity of approximately 79,4% (R2 = 0,794). Also, the value of F = 115,493 is considerably larger than the value of the distribution F (from 10-28) and the P - Value of the model equals to zero (sig. = 0). From all this we could conclude that the model is quite adequate and the selected variables correlate strongly with the dependent.

Finally, for the last company in this industry "GREEK PETROLEUM" by following again the same steps, it is identified that the variables that constitute the final best model, from which emerged the linear regression equation is in the following format:

FUTURE EARNINGS = 6,497E8 + 7,916E8 * ((Current Assets - Inventories) / Current Liabilities)) - 3,075E6 * (365 * Demands / Sales) - 8,720E8 * (stock / current liabilities) - 3,754E8 * (Current Assets / Current Liabilities) +

1,653E9 * (Current Assets / Total Assets) - 1,145E9 * (Debt / Fixed Assets) - 6,072E8 * (Sales / Demands) + 4,276E7 * (Total Assets / Equity)

Table 3: Interpretative ability linear model

Table ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	1,789E17	8	2,236E16	94,806	,001c
	Residual	1,396E17	30	4,653E14		
	Total	3,185E17	38			

Table Factor Assay Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	,928c	,862	,845	6,82135E5
Durbin-Watson test → P – Value (Sig) = 1,901				

From Table 3 we observe that P - Value (0,001) of the model argues that we have a statistically significant relationship. While from the coefficient of determination (R2), which equals 86.2%, we get a very high percentage of future profit interpretation from the independent variables.

4.2. Predictive ability of financial indicators at a sample level

As already mentioned, the choice of variables used in the industry, is based on the analysis of individual companies. The variables used were those that were statistically significant in the final linear regression model in at least two of the three companies, after weighing up to the Total Assets of the companies concerned. These variables are as follows:

1. (Current Assets - Inventories) / Current Liabilities.
2. 365 * Demand / Sales
3. 365 * Inventory / Cost of Goods Sold
4. Cash / Current liabilities
5. Net Profit / Equity

6. Current Assets / Current Liabilities
7. Current assets / Total Active.
8. Long-term Liabilities / Equity
9. Debt / Fixed Assets
10. Sales / Claims
11. Total Assets / Equity

It should be stressed once again that although these variables are those that showed statistical significance and high correlation with individual / corporate level, this does not mean that it will be compatible to be implemented as a whole and will present same characteristics and in the industry. For this reason, we excluded those variables that either pose a problem to the objectivity of the resulting conclusions (ie. Non-compliance with normality and linearity, multicollinearity, autocorrelation and heteroskedasticity) or do not enhance the explanatory power of the multivariate model (ie. Not help maximizing R2).

Considering the above, the control regularity, found that the variables a) cash / short-term obligations and b) long-term debt / equity do not follow a normal distribution (sig <0,05), when it was deleted. The rest were used in the case of multiple linear regression, to find to best model.

Table 4: Optimal model of multiple linear regression

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
6	(Constant)	1,253E8	1,124E8		1,115	,273		
	(Current Assets - Inventories) / Current Liabilities	-1,805E8	7,725E7	-,669	-2,336	,026	,216	4,639
	365*Inventory / Cost of goods sold	7,007E5	3,572E5	,309	1,962	,058	,711	1,406
	Net Profit / Equity	2,696E8	1,334E8	,394	2,021	,051	,466	2,147
	Total Assets / equity	-2,783E8	8,157E7	-,944	-3,412	,002	,231	4,333

a. Dependent Variable: FUTURE EARNINGS before taxes

From Table 4 we see that the independent variables that explain the most objective and accurate way reciprocating the variable, ie the weighted average future earnings of the sample is "(Current Assets - Inventories) / Current Liabilities", the "365 * Stocks / Cost of Sales ", the" Net Profit / Equity "and" Total Assets / equity. "The linear form of the equation is as follows:

FUTURE EARNINGS = 1,253E8 -1,805E8 * ((Current Assets - Inventories) / Current Liabilities) + 7,007E5 * (365 * Inventory / Cost of Goods Sold) + 2,696E8 * (Net Profit / Equity) -2,783E8 * (Total Assets / equity)

The second column of the table shows the negative and the positive influence of independent variables on the dependent. The variable holding the largest positive influence is the "365 * Inventory / Cost of Goods Sold." The increase of this variable in (1) unit implies earnings growth next quarter in 7,007E5 units. Similarly, the same happens with the other variables, but to a much lesser degree of influence.

Table 5: The linear model's interpretative capacity

ANOVA[g]						
Model		Sum of Squares	df	Mean Square	F	Sig.
6	Regression	7,591E16	4	1,898E16	55,660	,001[f]
	Residual	1,140E17	34	3,353E15		
	Total	1,899E17	38			

Model Summary[g]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
6	,894[f]	,800	,729	5,79070E7	1,642

From Table 5 we get information on the coefficient of determination (R^2) of the linear model, which equals 0.8. We conclude that this model presents explanatory power of 80%. Also, the value of F = 25,660 is considerably larger than the value of the distribution F (from 4-34) and P - Value of the model is equal to zero (sig. = 0). From all this it can be concluded that the model is quite adequate and the selected variables correlate strongly with the dependent. And therefore can predict the. While the P - Value of «Durbin - Watson» take a value equal to 1.642 <2.5, thus rejecting the hypothesis of existence of residual autocorrelation.

Thereafter, executing and monitoring of cases a) omoskedastikotitas, where it was found that there is no heteroskedasticity problem, and b) linearity, which showed that there is a linear relationship between the dependent with the independent variables.

5. Conclusions

The objective of this study was to demonstrate that the financial analysis tools have statistically significant predictive power characteristics of the course of future profits.

From the research carried out by examining the overall results obtained from the multiple analysis, it was found that there is a predictability of future profits, both individual / corporate level and sectoral. In separate tests, the satisfactory rates interpretative capacity showed the final linear regression models in the range of 70.2%, 86.2%, and 80% for each company in the industry (ELINOIL, MOTOROIL, GREEK PETROLEUM), respectively, and for industry 80%, we conclude that we have succeeded in greatly increasing the predictive capacity of future profits. The use of financial instruments in multiple models demonstrated that the combined use of those indicators show individual / corporate level that are related to future earnings may be related and sectoral level.

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THE RELATIONSHIP OF DESTINATION IMAGE WITH CONSUMER BEHAVIOUR, HUMAN RESOURCES AND THE CONTEXT OF TOURISM MARKETING

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Abstract

A study of the academic literature on tourism reveals continuous but scattered references on issues of destination image and its components and categories, aspects of consumer behavior and human resources issues, as well as, their correlation with tourism marketing and regional economic development. This study will attempt to collect these references trying to offer firstly a historical overview of these efforts and secondly to construct a context which will indicate the correlations and impacts in order to help in the creation of a conceptual framework able to be incorporated into the theory and act as a basis for the expansion of the discussion in the future. The contribution of this article lies in selecting and presenting several important elements of the literature and reviewing them in ways that reveal their correlations and interdependency. This approach adds to the theoretical framework and offers guidelines for future research.

JEL Classification: M31, O15, R10

Keywords: Tourism destination image, human resources, consumer behavior, regional economic development, tourism marketing

1. Introduction – tourism destination image

The various scattered mentions on image, starting from the groundbreaking work of Mayo (1973) and Hunt (1975), have led through the years to various approaches regarding the concept of image and its importance for marketing, management and policies regarding regional economic development. While viewed from different perspectives and for the purposes of diverse researches the concluding idea is that image is integral to the marketing process and its components. As time passes and theory evolves the mentions about image increase and research supports the beliefs of many on its importance.

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Especially, on the subject of marketing in tourism and destinations, image plays a vital part to their success as it is associated with a multitude of issues, such us human resources, in the form of personnel, aspects of consumer behavior and regional development strategies. The motivation for this paper was the need to correlate the above mentioned concepts in a unified form and respond to the theory needs.

Destinations are complex products consisting of a series of goods, services and interacting enterprises which contribute to the development of local economies and define their characteristics and perspectives. Hunt (1975) has long argued that it is possible for the images, as perceived by the tourist market, to contribute to a dynamic tourism development of a region, more than the resources and the particular characteristics of the tourism product. Additionally, several scholars (Chon, 1991, 1992; Baloglu and Brinberg, 1997; Chacko, 1997) claim that the most important criterion for choosing a destination is its image. At this point it should be noted that the types of images projected for a region are able to steer the development process, since the latter is the result of the interaction between supply and demand (Pike, 2002).

According to the WTO (1979) the specialists give to the word image three different types of definition, specifically: the artificial imitation of the apparent form of an object; form, resemblance, identity; idea, conception. In general, the term 'image' refers to a compilation of beliefs, and impressions based on information processing from a variety of sources over time, resulting in an internal accepted mental construct (Crompton, 1979; Gartner, 1993). In general it is considered as an attitudinal construct comprising an individual's mental representation of knowledge (beliefs), feelings, and general impression about an object or destination (Baloglu, 2001).

According to Gunn (1972) images are formed on two levels, the organic and the induced. Moreover, Gartner (1993) expands to unsolicited organic (information about the destination generated by persons who have knowledge or experience of the region) and requested organic (information sought by the prospective traveller from a reliable source). Concerning the induced image he classifies it as overt induced (information delivered by marketing efforts or tour operators and travel agents etc) and covert induced (information influenced by promotional activities which appears as unbiased source). Also, the image which is based on promotional campaigns can be categorized as projected. The image which is formed, in the mind of the individuals and/or potential travellers, before the visit to a tourist destination is characterized as secondary or naïve and the image which is formed, in the mind of the individuals/tourists, after the visit is characterized as primary or reevaluated (Phelps, 1986; Selby and Morgan, 1996). These are the image's basic categories.

Crompton (1979) considers that tourism destination image is an important aspect for powerful marketing and tourism development. The marketing mix with its variables is the basis of national and regional tourism marketing business plans and is therefore the means to implement the scientific theory of regional and economic development.

Several scholars (Hunt, 1975; Crompton, 1979; Dadgostar and Isotalo, 1992; Chen and Kerstetter, 1999) associate the importance of tourism image and its management with the development of a tourism area. Other researchers attribute its importance to the impact it has on issues of supply (Calantone et al, 1989; Baloglu and Brinberg, 1997; Walmsley and Young, 1998; Baloglu and McCleary, 1999; Chen and Kerstetter, 1999; Hyounggon and Richardson, 2003, Lee et al, 2005; Pike 2009; Qu et al, 2011). Moreover, other scholars attribute the importance of image to the impact it has on issues of demand and especially on marketing matters related to consumer behavior and the decision making process (Mayo, 1973; Hunt, 1975; Crompton, 1979; Mayo and Jarvis, 1981; Fakeye and Crompton, 1991; Alhemoud and Armstrong, 1996; Dann, 1996; Baloglu and Brinberg, 1997; Mac Kay and Fesenmaeier, 1997, 2000; Chen and Hsu, 2000; Gallarza et al, 2002; Yoon and Uysal, 2005; Chen and Tsai, 2007; Chi and Qu, 2008; Yuan and Jang, 2008; Shin, 2009; Prayag and Ryan, 2012; Assaker and Hallak, 2013; Zhang et al, 2014). Moreover, Milman and Pizam (1995) proposed a framework, suggesting three components of destination image: the product (e.g. level of cost and quality), the behaviour and attitude and the environment (e.g. landscape, weather, scenery). However, the concept of behavior has several dimensions. Specifically, these dimensions concern the consumer, the employees in the tourism sector (and the image that stems from their behavior and attitudes) and the local residents. Namely, the approach is associated with the human resources of the tourism destination.

This paper aims to expand on the consensus of the scientific literature regarding the impact of image on consumer behavior and add an extra dimension by focusing on the behavior of the tourism employees as an image creator for the destination. The dual approach to behavior, consumer and employees, as well as to the context of tourism marketing, contributes to a holistic understanding of the issue.

2. Tourist-consumer behavior and tourism destination image

A large number of scholars argue that one of the key factors affecting tourists and shaping their consumer behavior towards products and tourism destinations, is their image and their constituent elements (see examples in Gunn, 1972; Goodrich, 1978; Woodside and Lysonski, 1989; Um and Crompton, 1990; Gartner, 1993; Selby and Morgan, 1996; Prayag and Ryan, 2012; Assaker and Hallak, 2013).

Mayo (1973), in his early study on the image of areas and its relation to travel behavior, stressed that the destination image is a key factor in choosing the place and consequently the package tour that includes it. He concluded that independently of whether or not an image is a true representation of what a site offers, what matters is the image that exists in the minds of the potential traveler.

According to Gartner (2001), the images displayed by tourism destinations consist of three interdependent components: a) the cognitive element which includes the assessment of the characteristics of the tourism destination b) the affective element related to a group of motives which we are trying to associate the destination with, and c) the conative element where the effort focuses on the link to the previous two items. All these together will form the process of making the purchase decision.

"The potential tourists (Cooper and Fletcher, 1993) are likely to have developed a series of images on the trip. This image is framed by their idea of: a) the destination, b) the term “holiday”, c) the means of transport to be used, d) the tour operator or travel agent, and e) for themselves." The products are of personal and social importance to the buyer. They are characterized as symbols of personal characteristics and goals, symbols of social relevance and achievement (Vitouladiti, 2000).

Consequently, behind the image that every potential tourist has for each country there is a series of motives (Cooper et al, 1993; Vitouladiti, 2000). It could be said that the relationship and the sum of these motives form an overall stimulation, which fits with the image each destination has, creates certain attitude to the prospective tourist and leads to the purchase decision.

A review of the literature on motivations reveals that people travel because they are being "pushed" (push motives) in making the journey from the inner psychological forces and "pulled" by external forces of the destination attributes (pull motives) (Crompton, 1979; Uysal and Jurowski, 1994; Dann, 1996; Yoon and Uysal, 2005). Chon (1991, 1992) supported that the construction of primary images is based on ‘push’ and ‘pull’ factors related to a tourism destination. The satisfaction from the visit and experience of the journey, based on all the above, will give us a positive primary image and contribute to destination loyalty. The primary positive image and the degree of customer loyalty are depicted on the intention to revisit the destination and the recommendations to others (Oppermann, 2000; Yoon and Uysal, 2005). Arguably, providing information connecting the positive primary image with customer loyalty is of high importance to the tourism marketing managers.

2.1. Models of tourist-consumer behavior - Purchase decision and tourism destination image

The marketing managers must know not only the various segments of the tourist market and the different variables that influence the tourists' behavior, but also the process that leads to the final purchase decision from the prospective tourist.

One of the various models of tourism consumer behavior is that of Schmoll (1977). This model is based on the traditional approaches in consumer behavior of Howarth-Sheth and Nicosia (1969 and 1966 in Cooper et al, 1993). This model was the first to introduce, a long time ago, the variable of the image in its context.

Specifically, the Schmoll model (Cooper et al, 1993) argues, as mentioned, that the motives, desires, needs and expectations are the key variables that influence decisively the travel behavior. These variables, in turn, are influenced by the travel stimuli, the confidence the prospective tourist has in the travel business, the image of the destination from a previous travel experience, as well as issues of time and cost.

The content of this classic model shows that the final decision (meaning the choice of destination, time travel, type of accommodation, travel company, etc.) is the result of a process that includes the fields mentioned below:

1. Travel stimuli: They include external stimuli, which are derived from: a) advertising campaigns, promotional processes, b) printed travel material, tourist offices' brochures, c) discussions and opinions of people who have already obtained travel experiences (i.e. organic image, requested and unsolicited), d) suggestions and information from travel agencies (i.e. projected image).

2. Personal and social factors determining travel behavior: They include the motivations, needs, desires which are shaped by personality, values and the socio-economic status of potential tourists and the market segment they belong to.

3. External variables: They include the confidence that the prospective tourist has in travel companies designing the product and service and in those distributing it. Also they include the image formed by tourists for various destinations and services (i.e. naïve or secondary image) as well as the already

acquired travel experiences. Moreover, they include subjective and objective assessments of the tourists on the risks contained in the tourism process and the obstacles relevant to the time and cost.

4. Services features of the destination: This field includes first of all the attractions of the destination and the facilities and services it offers. Also, it includes the number and quality of travel information that a tourist can receive on a tourist destination (e.g. organic and projected image), the type and quality of accommodation provided and the possibility of travel arrangements. All these are taken into consideration by the potential tourist to test the relation between the costs required and the value of the product offered.

Destination image plays two important roles in behaviours: (1) to influence the destination choice decision-making process and (2) to condition the after-decision-making behaviours including participation (on-site experience), evaluation (satisfaction) and future behavioural intentions (intention to revisit and willingness to recommend) (Ashworth and Goodall, 1988; Cooper, Fletcher, Gilbert and Wanhill, 1993; Bigne et al., 2001; Lee et al., 2005; Mansfeld, 1992 in Shin, 2009).

2.2. Travel purchase decision and tourism destination image

Travel stimuli, external factors, personal and social characteristics that determine the behavior, as well as characteristics and features of services offered in a destination, initially affect and create the desire to travel, but at the same time, create a variety of reasons that function in favor or against this desire.

Shortly after, the prospective travelers begin the information search process, during which they utilize and discuss the information received from the media, the tour operators and travel agents.

The information collected, in conjunction with variables such as the destination image formed by the prospective purchaser, is judged, evaluated and lead in assessing and comparing alternative travel proposals, which affect both the package tour or/and the tourism product and the travel company offering it. Factors such as, cost and value relation, image formed (in a secondary level at this stage), time, risk, etc. play a key role in shaping the final purchase decision.

The value of the Schmoll model is that it introduces the concept of the image in various stages of the process. Specifically, it incorporates to the external variables the image with previous travel experience, where together with other variables influence the formation of travel desire, the information seeking, the evaluation of alternatives and the making of the final decision.

Regarding travel stimuli, experience is incorporated in them in the form of proposals and experiences of other travelers (unsolicited and requested organic) in conjunction with the projected image, (meaning the image formed by a deliberate effort to promote products and services of a destination from travel and tourism businesses).

Therefore, it becomes reasonably clear, that the tourism marketing managers must know not only the possible ways of market segmentation or the determinants of behavior, but mostly, that the image formed at various levels as unsolicited and requested organic, projected and secondary, interacts with all the above, leads to purchase decisions, which in turn lead to the visit that shapes the primary image.

3. Human Resources - Services, tourism destination image and marketing

It is argued that some destinations rely on the human element and its image, projecting it as an integral part of the tourism experience (Baum, Hearns and Devine, 2008). Especially the people who work in tourism are an inextricable part of the destination's image. Their appearance, behavior, knowledge of their subject, friendly disposition, attitude etc. have a strong influence on the perception and image that the customer will form for the services and vacations purchased (Middleton, 2001). From the above statements results that another aspect of behavior, apart from the kind that concerns the visitors, is the behavior that concerns the human resources of the destination in the form of the tourism employees.

Tourism is a service industry, which depends very much on the quality of hospitality offered by employees at several kinds of enterprises (Vogt and Fesenmaier, 1995). The hospitality industry consists of enterprises that provide services and their personnel that constitute their more important asset. The creativity of the personnel, its ability and its work, moves the company (Stoner, 1989). The personnel can give a company the competitive advantage with the abilities and its performance (KPMG, Klynveld Peat Marwick Goerdeler, 2005).

The human resources are responsible for the service offered and play the main role in the successful operation of tourism businesses and the subsequent development of the region. No clever or persuasive advertising promotion can compensate for poor quality of service. According to Berry and Parasuraman

(1991), the essence of service marketing is that the service and its quality are its foundation.

The issue of the human factor is so important to the field of tourism that Zeithaml and Berry (1996) argue that people who work in the tourism industry are able to create and project a positive or negative image. Also, Christou (2002) emphasizes that every employee in every tourist business transfers a destination image to the visitor. They are image carriers.

As Zeithaml and Bitner (1996) support, employees in tourism industry are its living and breathing advertisements and images. The employees represent in the eyes of the customer the company itself and its services.

Hoffman and Bateson (1997) support that the human factor is "the public face, the image of" the entire business entity. Therefore, the main factor that makes the difference for the experience of the guest and can justifiably be regarded as perhaps the most essential element in configuring the primary image is the human resources and quality of service it offers.

According to Vitouladiti (2013) strategic plans for personnel development are vital, since good human resources management practices can deliver profitability at several levels (for the enterprises and the region). Enterprises should go to great efforts to hire properly qualified staff so as to provide better quality of offered services. As Dedousopoulos (2007) and Vitouladiti (2013) state, enterprises require personnel that is able to deal with people and have adequate social skills as well as technical ones. Also, Asonitou (2013) indicates the importance of “softer” knowledge such as personal and interpersonal skills.

There is a strong relation between the quality of provided services, guests’ satisfaction and success of service companies. Employees constitute the link to that process as they are the ones who offer the service to the guests. It is obvious that employees have an important role, as they interact with guests; they can influence their first impressions and throughout promote the company image. Therefore, it is clear how the human factor in the service and more specifically in hospitality industries constitutes the basic factor of quality (Becker and Wellins, 1990). According to McCain et al. (2005), quality is based on three aspects which are observed by customers and are related to the employees’ attitude, expertise and behaviour.

3.1 Expectations and tourism destination image - Services offered, satisfaction and customer loyalty

The fundamental concepts of satisfaction, expectations, customer loyalty and their correlation are the essence of modern marketing, because they exclusively concern the focal point of this scientific field, which is the customer, his/her needs and desires.

Satisfaction can be defined as the total emotional reaction of consumers towards a product or service. Yuan and Jang (2008) argue that ensuring consumer satisfaction should have a special place in services marketing because satisfaction links consumption with procedures concerning after sales behavior such as attitudes changes, repeat purchase, positive word of mouth publicity and loyalty to a brand or identity.

The study of customer satisfaction is also directly connected with the issue of expectations. Initially, expectations are based on the secondary or naive image. Then, after the visit, if expectations do not "fit" the actual performance of the product and service offered, then the tourists-consumers will maximize the ascertained inconsistency, which will have a negative impact on their satisfaction (Bosque, Martin and Collado, 2006).

All the above point to the inherent dynamic of the primary image, and the knowledge that ultimately arises from it, which relates to the improved supply of tourism services and maximized likelihood of attracting repeating and loyal customers.

In specialized literature there have been several approaches to the subject of customer loyalty. There is a consensus that the consumer is loyal to a product or a brand when he repeatedly buys the product and service, has positive attitude towards it, and recommends it to relatives and friends. The repetition of this behavior and the development of positive attitudes are the result of consumer satisfaction by the service or product/brand and contribute to a better level of profitability (Campo and Yague, 2008).

Bigne, Sanchez and Sanchez (2001) support that improved and therefore positive tourism image is a prerequisite for perceived quality, customer satisfaction (evaluation of the stay), intention to repeat visit, recommendation to friends (future behavior), and dedication to the destination and services offered.

4. Tourism marketing planning and tourism destination image

Marketing planning is a key factor of success for a business or an organization, particularly when considering that the business environment becomes increasingly competitive and more complex (Kehagias, 2001). According to Vitouladiti (2000) the method of developing a marketing program, tends to, initially, clarify the mission of the institution or organization or enterprise, conduct a diagnostic study of the environment, set the goals, establish strategy, prepare the action plan and implement, monitor and control the process.

The definition of a strategy for a marketing plan is based on a series of policies, on a series of firm decisions for elements concerning the target market, product, price, distribution, public relations, advertising and promotion altogether. All the above elements interact with the image (Vitouladiti, 2014). The development, therefore, of a marketing plan, either at regional or national level will have to take into account the correlations of the strategy elements with the image parameter in order to be more effective. If the marketing program does not contain the element of realistic information, provided by the primary image and the proposals of the target market itself, its implementation will be hindered.

5. Marketing management and tourism destination image

As management evolved and changed its focus, from internal (the needs of the company) to external (the needs of the market), the concept "marketing management" was introduced in order to give emphasis to the priority marketing takes over other operational activities. According to Kotler (2000), marketing management can be defined as the process of analyzing, planning, executing and controlling the activities of marketing, with a view to facilitating and expediting transactions with clients profitably for both parties.

When it comes to management in tourism, which concerns the marketing activity, is defined as "the process of determining the marketing objectives, taking into account the available resources of the tourism organization and the opportunities that exist in the market, the planning as well as the implementation of the marketing activities necessary to achieve the objectives» (Moutinho 1989, p. 259, in Vassiliadis, 2009)

The objectives of tourism marketing management include (Vassiliadis, 2009):

- Correction of an existing image (image changing)
- Enhancing an ailing factor that is essential for the successful development of the image
- Attracting new target groups
- Increase the share of specific target groups
- Increase the number of overnights
- Better allocation of overnights at certain times
- Increase the length of stay of visitors
- Attracting visitors who fall into certain age categories

- Better distribution of arrivals showing a particular category, which is the goal of operational activities
- Increase in turnover and profits
- Setting social objectives, etc.

It is obvious that among the first objectives of the tourism marketing management are those that concern the image factor and especially the correction of the existing one or even the enhancement of an ailing one. In order to achieve these objectives the importance of using the characteristics of the primary image emerges, since it reveals the customer's needs and their actual evaluation of the destination. The primary image is offering suggestions from the target markets on those factors that need improvement in order to create the destination image which will be in accordance with their needs.

Also, a careful study of the above objectives clearly suggests that the tourism marketing management includes the administration of demand, the cost-effective management of customer relationships and markets and therefore the determination of goals based on specific market segments. The issue of the destination image, as it discussed in this study, is either directly or indirectly linked to the materialization of these objectives.

6. Tourism destination marketing and image

In an attempt to define the concept of destination marketing, Kotler (1998) supports that it is an integral part of developing and maintaining demand and popularity of a particular region. Also, Buhalis (2000), highlights that the tourism destination marketing helps achieve the objectives of tourism policy, which has to be coordinated with the strategic plan for development of the region.

In destination marketing, positioning is an important tool of communication with the market. According to Kotler (1991) the positioning is essentially the act of image creation and offered value, so that the target market could understand and evaluate the destination and its features in comparison to the competition. Chacko (1997) argues that the purpose of positioning is to create a special place in the minds of potential customers. A place that will give rise to images of the destination in the minds of customers, pictures that will, in turn, differentiate a destination from the competition and make it an area that can meet their needs and desires.

The main reasons requiring the implementation of tourism destination marketing as suggested by several authors (King and Hyde, 1984; Wilson and Gilligan, 1997; Kozak and Rimmington, 1998) are:

- The implementation of the marketing functions primarily allows the detection of the strengths and weaknesses of a tourism destination image, and also the identification of opportunities and threats (SWOT analysis). Their study, in relation to the characteristics of the target market, suggests ways of tackling problems and improving the image characteristics, which the target clientele would desire.
- Fierce competition that exists due to the presence of a huge number of tourism destinations and the high rate of information for tourists. Marketing, as it is known, is trying to trigger and direct the potential demand. It is therefore the ideal way to deal with competition, identify and exploit our comparative advantages.
- Addressing the instability which can be caused by political, social, economic events. The tourism sector is particularly sensitive to these kinds of changes and events. Marketing helps us early identify possible changes or to remedy any negative impressions from political events.
- Identifying solutions to problems associated with seasonality and strong demand fluctuations.
- Projects have a limited "lifespan" and are dependent on the time factor. The use of a marketing mentality, through the continuity it imposes, creates the conditions for and stimulates continuous improvement, adaptation to specific circumstances and bearing of innovative ideas.
- In marketing plans, through processing and analyzing of alternatives for achieving the objectives, the economics of each solution are taken into account. Their comparison, from this perspective promotes the implementation of the basic economic principle.
- The results of the implementation of the marketing plan for a tourism destination spread and strengthen all businesses operating in it. They create economies of scale and try to unify the efforts of private and public sectors in the same direction.

Therefore, the creation of a reinforcing image for the destination, an image that has the potential to diversify the tourism supply from the competition and create positioning opportunities within the tourist market is of great importance. In other words, an image that will have the advantages of the primary and will act as an effective promotional tool designed to create a brand name and identity for the destination.

The ability to create such an image could give the destination's stakeholders the opportunity to approach other more specialized tour operators (specialists), handling higher quality tourism, and achieve up to a point, of course, the disengagement from those of mass tourism.

7. Market segmentation and tourism destination image

The functions of marketing give the possibility to create the tourism products and services incorporating such characteristics which meet specific needs and desires. The above finding alone is sufficient to indicate the need for market segmentation, particularly the need for an effective one.

A product's design and development should be based on research and analysis (Calantone and Mazanec, 1991; Hu and Ritchie, 1993; Baker, Hozier and Rogers 1994; Ritchie, 1996). This is crucial when this research is based on the primary image that the target market has shaped after the visit. This is a dynamic process of marketing research that will allow the managers to utilize the target markets' image perception and develop tourism services capable of meeting the increased needs of a demand that becomes more and more exigent due to the intense competition.

In conclusion, the segmentation process can offer the necessary information which will contribute to decide the setting of the objectives. This, in turn, provides the background for decisions relating to the elaboration of strategies, the coordination of all elements of marketing mix, including the management of a tourism region image.

8. Characteristics of secondary and primary tourism destination image - Correlations with the functions of tourism marketing and destination choice

Given that the choice of a holiday destination contains a percentage of risk, secondary sources of information and the image emerging from these play an important role in the formation of images of competing destinations that will be evaluated and considered as alternatives by the prospective tourist-consumer, during the decision making process. Mansfeld (1992) suggests that, although not documented in research, it is accepted that the secondary sources of information satisfy three basic functions during the destination choice: a) to minimize the risk involved in the decision, b) to create a destination image and c) to act as a mechanism for evaluating the decision, ex post (after the visit).

Given the fact that tourism services are not tangible, images become more important than reality. The secondary images of destinations, projected through the media, will impact significantly on the consumers' perception.

The projected features, expected benefits and symbolisms or psychological characteristics which tourists-consumers associate with a particular destination and its services, will contribute to this impact. As a result, secondary images will affect the positioning of the tourism product or service and eventually the consumer behavior. The final act will be the choice of destination and the actual visit.

The above reveal the power and importance as well as the complexity of the secondary image as the source contributing dramatically to the destination choice.

Obviously, the formation of the secondary image through the several promotional tools is not enough. This procedure needs information and opinions of the target-market itself for those features of the destination (infrastructure, superstructure, services, attractions, etc.) that their "consumption" would result in either a positive or negative change of the image in the mind of the visitor.

Furthermore, it needs information that would help to stay current with the desires and expectations of visitors. Those information that will emerge after the visit, and concern the primary image, are the data that can effectively guide the tourism destination managers.

In conclusion the primary image is significant due to the following reasons:

a) It shows the real and pragmatic dimensions of tourism image in many levels (destination, product, package tour, etc.)

b) It is the basis for creating a convincing advertising campaign, strong branding, integrated marketing process and improvement in tourism supply.

c) It becomes in turn an information source for other potential travelers, and transforms to another type of image. Specifically, the secondary image, which will have relied on realistic data.

d) It becomes also an element of advertising in promotional brochures of travel businesses. Specifically, it is transformed to an induced image, in terms of a secondary one, but again having relied on realistic data.

9. Significance of the primary image for the functions of tourism marketing, for the assessment of tourism supply, and for the regional economic development

The characteristics of the primary image, as presented and discussed, would have multiple and recurring benefits for tourism marketing implementation, for the evaluation of tourism supply and in general for a more efficient formulation of regional tourism development approaches. Specifically:

- The effective planning of the tourism marketing as well as the promotional mix. All planning and development activities for the destination (pricing policy, marketing and promotion policy) would be anchored to the real possibilities and characteristics of the tourism supply (as these would appear through the eyes of the customer). A fact that would lead to a reliable depiction of tourism supply characteristics.

- The processing of the primary image, the way it would have been indicated by the target market, the identification of the features for which the destination stands out, and their integration into the various commercial sources of advertising will give another perspective on the implementation of tourism marketing.
- The commercial sources of advertising will highlight those elements that the customer has designated as advantages, and their "consumption" is a plus for the vacation.
- The commercial sources of advertising will become, through the image formation cycle, distributors of positive, realistic, and competing images serving as the secondary sources of image formation, where the next visitors are expected to base their expectations. These expectations will not be far from reality; hence their likely fulfillment will contribute to customer loyalty and satisfaction and will reinforce the process.
- The positive and realistic portrayal of elements of tourism supply and visitors' satisfaction will contribute, after returning to the place of residence, to the distribution of positive information about the destination.
- Potential visitors would have greater confidence in the projected image used as a basis to develop their expectations. This reliable and realistic image would greatly help to avoid the mismatch between expectations and actual product performance. Therefore, it would contribute to a more positive evaluation of the experience and satisfaction.
- The positive evaluation of experience and increase in satisfaction, in turn, could lead to customer loyalty (Bosque, Martin and Collado, 2006). Customer loyalty is expressed through the development of positive attitudes and motivations, with repeated purchases and with very positive word of mouth publicity, a powerful source for the creation of the secondary or naive image. Studies have shown that word-of-mouth seems to be the only information source which has a significant influence on all image dimensions and that it can be used to develop a competitive advantage for a destination (Kaplanidou and Vogt, 2003, in Dermetzopoulos et al, 2009). Consequently, the marketing managers must seek, with the help of scientific research, effective ways to maximize the satisfaction of important target markets and enhance customer loyalty. Repeat customers are expected to

enhance the financial results and improve the viability prospects of the destination.

Furthermore, the recording of the primary image would contribute to the identification of differentiating elements from similar tourism destinations that could easily substitute a tourism place and in finding those characteristics that would support the development of a brand identity. Additionally, they could indicate improvements in tourism supply, thereby offering substantial growth in the region and assist on the effective preparation of strategies and goals for regional tourism planning and development.

The elements of image can also be used in attempts to attract investments in tourism services and products.

10. Concluding remarks

From the above review results that the approach of the concept of consumer behavior, human resources in relation to destination image in the context of tourism marketing, offers dynamics and knowledge on the process of decision making, marketing management and regional economic planning.

Marketing evolves and marketers are asked to synthesize a variety of information in order to create the most effective strategies. A holistic marketing approach needs to take into account all the stakeholders and their opinions, ideas and images formed regarding the destination. We need to look and understand the past to formulate the future of a destination in a sustainable manner that will safeguard it for the next generations.

It can be argued that in the 21st century it will not be the physical goods or services that are the most important product but rather knowledge and the ability to manage this knowledge. The talk now is of the "knowledge age" rather than the "information age" (Asonitou and Hassall, 2008). The knowledge which results from the correlation and the interactions of these concepts proves the necessity of a conceptual context construction in the future and the implementation of research procedures.

The potential contribution of this article is to synthesize the review of different scientific views on the subject of destination image in relation to consumer behavior, human resources and the context of tourism marketing in an attempt to invite more attention to these conceptual issues and provoke future research.

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FUNDING AND SPONSORING INNOVATIVE ENTREPRENEURIAL PRACTICES AND ICTS IN THE GREEK TOURISM SECTOR

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Abstract

Despite the crisis, Greece experiences a vibrant start-up scene and the increased number of mentoring and incubation solutions available to startups in Greece, makes room for the entrepreneurs to grasp opportunities and to develop their ideas and services before moving to a bigger scale abroad. This paper address the issue of the funding and sponsoring innovative entrepreneurial practices and ICTs in the Greek tourism sector and argues for an active participation of governments, communities and academic institutions in building a healthy environment for startups and application of new technologies. It seems that Greece is getting into a new phase, where an entrepreneurial information sharing culture is spreading in the country and an entrepreneurial community and ecosystem is emerging, demanding a sound, healthy and supportive environment to flourish.

JEL Classification: M31, M37, Z100

Key Words: Start-ups, Entrepreneurship, Incubators, ICTs, Tourism.

1. Introduction

Entrepreneurship is both a management discipline and a process; as a management discipline it certainly deals with high uncertainty (Leckart, 2012) and in such cases, such as the conditions Greece faces, traditional forecasting models may fail and managers are required to act as entrepreneurs. However, the tools of general management are different from the tools of entrepreneurial management and training and education are required. Entrepreneurial aspirations are not enough for an individual to start a business. To do so, a proper motivation is required. Entrepreneurship is also a process by which individuals, either on their own or inside organizations, pursue opportunities without regard to the resources they currently control (Stevenson, 1983). According to

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a recent research in the context of GEM (2013) in Greece, two types of entrepreneurial motives were identified;

a) Opportunity Entrepreneurship, which refers to the entrepreneurship motivated by the exploitation of opportunities, and

b) Necessity Entrepreneurship, which refers to the entrepreneurship motivated by the absence of other employment options. During 2003-2007, i.e. times of economic prosperity in Greece, opportunity entrepreneurship exhibited an increasing trend, while a clearly decreasing one characterized necessity entrepreneurship. This trend appears to be reversed since 2008, that is in the economic crisis years. In the latter period the rate of nascent entrepreneurs driven by necessity is larger compared to previous years.

Greece has the highest percentage of necessity entrepreneurs in Europe (MIC Greece, 2014). Unemployment has reached 27.4% in December 2014 which means that 1.3 million people are out of work. In comparison, the same figure four years earlier was 11.5%. Young unemployment for people 15- 24 was 57.4% and for people 25-34, who are the most probable to participate in startups, 34% (EL.STAT., 2013). The rise of unemployment caused by the continuous waves of dismissals makes it imperative to provide incentives for the creation of startups, the remedy to joblessness. This can be achieved in many ways, such as subsidies for recently redundant personnel, career orientation seminars, etc, since there are many experienced business people available and their knowledge can definitely be beneficiary to first time entrepreneurs who possess only technical skills.

Undoubtedly, entry in the business arena is always a difficult decision, which depends on several factors. Some of these factors are cultural, as they refer to general perceptions that hold about entrepreneurial activity in a society in a given period. Other factors concern the entrepreneur's personal characteristics. Particular emphasis is placed on the way the entrepreneur evaluates his/her own capabilities and experience as well as on the personal drive required to pursue a new activity, despite the potentially high uncertainty. Cultural, together with personal factors, can be considered to determine entrepreneurial aspirations.

However, the assessment of the entrepreneurial environment by the Greek experts in all the other dimensions is negative. Particularly discouraging appear the experts' assessment of the entrepreneurial culture and the entry barriers to the local markets that new businesses face. This reliance of Greeks on the public sector has very deep roots as many Greeks believed that being a public servant offers security, great career prospects and a relaxed environment to work in. These beliefs and aspirations however, were never met, since the public sector was severely affected by the austerity measures through layoffs and salary reductions. Nowadays, working in the public sector is unattractive and Greeks seek new opportunities either in the private sector or even abroad.

Small and medium-sized enterprises play a significant role in the Greek economy (Piperopoulos, 2009). SMEs are the backbone of economic growth and job creation in the society (Winborg & Landström, 2001; Ebben & Johnson, 2006). Consequently, SMEs financing has always been of great interest for the entire society, including practitioners and academics. The success of SMEs mainly depends "on the entrepreneurs' ability to identify and access sufficient sources and levels of capital" (Neeley and Van Auken, 2009, p.399) and for this reason "one of the most important decisions that entrepreneurs make is financing the operations of their enterprises" (Carter and Van Auken, 2005, p.129). For funding SMEs and their growth there are two main options for raising funds – internally or externally. When it comes to internally funded resources, the enterprise can choose to use its own savings, the cash flow of the enterprise or retained earnings. If the enterprise decides on resorting to externally funded resources, it can choose between equity, such as funding resources from venture capitalists, business angels, private equity placement or debt, such as bank loans. However, in spite of many funding options, SMEs encounter a large variety of problems in their search for funds to support their business ideas or for the development or growth of their enterprises.

As Piperopoulos (2009) mentions: "Greece did not industrialize and build a national innovation system in line with Western European countries as a result of incorrect choices created by various governments, with unstable political environment, the lacking of a culture encouraging joint efforts and cooperation, the narrowness of investors and businessmen interested only in maximizing personal profits with minimum effort and the lack of coherent, unionized long-run economic growth and strategic policies".

This paper address the issue of the funding and sponsoring innovative entrepreneurial practices and ICTs in SMEs in the Greek tourism sector and argues for an active participation of governments, communities and academic institutions in building a healthy environment for startups and application of new technologies. Successful examples are presented from the highly important for Greece tourist sector, as well as suggestions for a new entrepreneurial information sharing culture.

2. Start ups and funding options in the Greek institutional environment

Entrepreneurs try through startups to implement a new business model or offer an alternative to common practices in some industries. Early-Stage Entrepreneurial Activity, i.e. start-up activity in each country, is the primary indicator of entrepreneurship in the context of the GEM (2013). A startup is a human institution designed to create a new product or service under conditions of extreme uncertainty (Ries, 2011). The several phases that a new endeavor goes through bear several risk factors that lead to a high overall risk and eventually to a high failure rate, especially in the early stages (Fini et al, 2009; Gelderen et al., 2005). A startup is a vehicle to introduce innovative products and services, a temporary organization formed to search for a repeatable and scalable business model (Blank, 2010). A startup can take many forms; it may be a company, a spinoff from a multinational corporation or even a small team of people not represented by a legal entity. An organization can be a startup only for a specific time (typically there is a timeframe up to 5 years for the success of the venture), as the startup usually either grows to an established company or fails to succeed and halts operations.

Funding is crucial to startups and affects to a large extent the growth of the company. There is a big problem of raising capital, since unlike large business finance, the high risk of startups is unbearable for banks and certain investment firms (Denis, 2004). As a startup proceeds through several stages and its business model becomes more concrete, different funding options are available (Davila, Foster, & Gupta, 2003). The following figure represents the size of capital different investors can offer to web startups over time. This is a general representation that may vary according to the growth of the company.

The initial capital required for a startup called seed capital, also known as seed money, is usually limited because the startup is still in a conceptual stage. Seed money can be used for market research and product development until the company can start generating income. At the beginning, a startup is funded by the founders' own assets or by small investments made by their families and friends. While there is a high risk in this first stage, the size of the investment is bearable for individuals with no or little experience. The use of one's own assets is also a way for entrepreneurs to signal their commitment to their startup (Conti et al., 2011).

Another resource of seed capital is angel investment. Angel investors fill in the gap between family and friends and venture capital (VC). They can provide startups with funds up to a few hundred thousand Euros, but they still have to

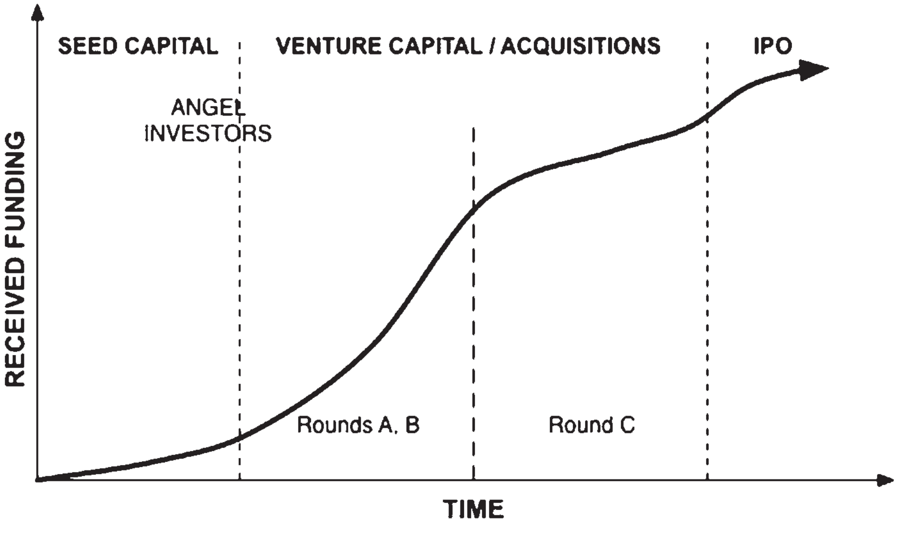

Figure 1: Stages of startup financing (Davila, Foster, and Gupta, 2003).

deal with high risk. Since they are investing their own capital and not pooled funds, they become extremely active partners of the companies they invest in. Growing further requires that startups receive new rounds of financing. Venture capital (VC) firms can provide companies with bigger funds, again in return for equity.

Studies have shown that VC contributes significantly to make companies more innovative (Kortum and Lerner, 2000; Hellmann and Puri, 2000). Unlike angel investors, VC firms do not invest their money but act as intermediaries between startups and funds raised from institutional investors, referred to as *limited partners*. Venture capitalists, the people who manage the funds, are referred to as *general partners*. Since there is a high failure rate for startups, venture capitalists diversify their overall investment by splitting it into several smaller ones with the prospect that a minority of the companies will have such growth that will compensate for the losses of the rest. Venture capitalists are interested in companies that have potentials for high growth by supporting them with their experience and coach them in their first stages (Davila et al., 2003). Venture capitalists are long-term investors, they expect return from their investment after 5-10 years, and their goal is a profitable exit from the company, as good exit opportunities are crucial, not only for investors but also for entrepreneurs, because they have an effect on the innovation strategy of the company (Schwienbacher, 2008; Maskimovic and Pichler, 2001).

During the last few years a new way of financing called crowdfunding has been developed. Crowdfunding is a collective effort by consumers who network and pool their money together in order to invest in and support efforts initiated by other people or organizations (Ordanini et al, 2011). Most crowdfunding platforms operate online and they are an interesting alternative to traditional financing opportunities, because in most cases they allow entrepreneurs to receive funding without the need to sell equity (Croudsourcing.org, 2012). Crowdfunding is a simplified and more standardized method than contractual agreements with business angels, which makes it more appealing to inexperienced entrepreneurs. Due to the smaller capital one can raise, crowdfunding can be used primarily for projects in early stage startups, enabling all to actively participate in this process.

Early-stage entrepreneurs in Greece do not appear to perceive entrepreneurial opportunities in their business environment- during the last 9 years the relative index of entrepreneurial opportunities in Greece never exceeded 30% and in 2012, the percentage of population that perceive entrepreneurial opportunities was just over 13% (GEM, 2013). Greece is a small market and does not offer any substantial VC funding; there are some available though, and the most famous amongst them are: *Alpha Ventures, Attica Ventures, Aims Management, IBG Management,* Metavallon, Igniter by Colab, Start Tech Ventures by Tsigos, Endeavour, The Open Fund, PJ Tech Catalyst by Piraeus Bank, Odyssey Venture Partners, TANEO, Attika Ventures, AIMS, Alpha Ventures, Oxygen Capital, Thermi Ventures, and Zerofund.

3. The role of Governments

Governments have the power to support startups in raising equity finance by intervening in two ways: directly or indirectly (Manigart and Beuselinck, 2001). Directly means that the governments participate in venture capital funds, or are actively involved in the companies. The granting of funds is typically done in the form of subsidies and loans. However, many researchers have raised their concerns about this practice and the interference of the government in a sector where privately owned funds are traditionally more efficient (Florida and Smith, 1993).

On the other hand, indirect support can be provided through a variety of measures. Governments set the ground for the existence of startup companies and the legal framework of a country and the types of companies one can found are of major importance. Flexible laws that minimize bureaucracy and increase efficiency is amongst the most common measures taken to support entrepreneurship. Government actions are implemented through regulations. The attraction of foreign skilled employees to transfer their knowledge and the ease of incorporation can boost entrepreneurial activity. Moreover, flexible labor laws make it easy to deal with the uncertainty of startups. Taxation is another serious issue for countries with troubled economies. The case of Ireland proves that countries can attract significant amount of foreign direct investment that will drive innovation even during recession (Walsh, 2003).

Entrepreneurial activity in Greece always involved receiving government funding. Funding was provided for years with the support of the European Union through several programs, but unfortunately, the criteria for companies to participate in the programs did not include contribution to innovation but were instead promoting uniformity and standardization in order to simplify financial audit; in some cases firms were created with vague business plans so that entrepreneurs would receive the funds (OECD, 2011, 2012; MIC Greece, 2014). Until the end of 2013, Greece had the lowest performance as regards the financial support for entrepreneurship and the availability of government programs intended to support entrepreneurial activities. Also, national experts evaluate in a negative way the general framework of national policies and legislation. Furthermore, as far as market dynamics are concerned, the Greek national experts believed that it tends to change with a high speed, a change that is stronger compared to other innovation countries (MIC Greece, 2014).

In Greece, the creation of a brand new enterprise takes 45 days and sixteen consecutive processes got to be satisfied, costing 69.6% of per capita income compared to four days and 4 processes and third cost in Kingdom of Denmark (Koutsoukis et al., 2012). The necessary obstacles for beginning a business include: 66% receiving the mandatory monetary suggests that (compared to 500th in EU27), fifty nine associate applicable business idea (compared to fifty one in EU27) associated forty fifth addressing an unmet social or ecological would like (compared to twenty first in EU27). The unmet social and ecological would like is that the highest altogether EU countries, it is very important and rather very important count for seventy fifth of the responses. According to a research by Daskalopoulou and Liargovas, 2008, the regional location of new firms is affected by government investment incentives and industry specific infrastructure (Devereux et al., 2007) have been verified in the case of service start-ups and tourism start-ups, respectively. While the regions of Attiki and Thessaloniki seem to hold a central position as regards the location of start-ups in Greece, overall results show that each industry tends to follow a different regional location pattern. The idiosyncratic nature of industries, developed through time via the interplay of a number of factors including history and policy, seems to be at play in their co-location dynamics.

Greece has been continuously convicted by the European Court for the huge delays in the disposal of legal cases and huge bureaucracy and corruption. It is extremely time consuming to deal with the public services. An action taken to make Greek more business friendly to new entrepreneurs was the introduction of One-Stop Shops in June 2010 (Law 3853/2010) in order to boost transparency and reduce bureaucracy. However, due to delays in the migration of existing data, the first One-Stop Shops started operating in April 2011. One-Stop Shops are a measure taken to simplify the registration of new companies capitalized at under €100000, a category of firms in which almost all web startups fall into, and of every corporate form. Greek authorities claim that the new procedure cuts the number of steps required from 11 to 1 and the required days from 38 to 1 or 2.

4. The role of the Academic Institutions

The relation between Universities and innovation has been well documented in the academic literature over the years (Mowery and Sampat, 2006; Bania et al., 1993); in several countries the contribution of Universities to the national level of R&D is much higher than in the USA (World Economic Forum, 2010). The problem is that the universities in those countries often fail to commercialize their research. A first reason for that is, that universities in the USA are highly autonomous and competitive, while in most countries they are owned by the state. Moreover, in contrast to the USA where professors and researchers are offered several incentives to commercialize their ideas, in Europe it is more likely that they are penalized and stigmatized (Pruett et al, 2009; Goldfarb and Henrekson, 2003). Greece currently has approximately 100.000 students of Science, Technology, Engineering and Mathematics fields (STEM) in 150 departments in Universities and Technological Institutes. Still, Greece scores lower that the EU average in almost all categories about academic performance in the Summary Innovation Index (MIC Greece, 2014). Greek institutions focus more on research and have a very weak connection to the job market, although it seems that students are troubled about their future and ask for more practical skills (Franco et al, 2010). Nevertheless, academic departments in Greece try nowadays to inspire entrepreneurship, by creating academic programs that promote entrepreneurship and taking part in major events and entrepreneurial contests (Sahinidis et al, 2012).

5. The role of Communities

A common barrier that first time entrepreneurs face is the lack of certain competencies due to their inexperience. Luckily, entrepreneurs are generally willing to share their past experiences and the knowledge they acquired over the years with newcomers in the startup environment. The formation of communities has several benefits as they can be used as a means of supporting knowledge sharing as well as a mechanism to raise awareness around the actions of their members and achieve favorable treatment (Bimber, 1998). Networking contributes to the innovative capabilities of startups by exposing them to novel sources of ideas, enabling fast access to resources and enhancing the transfer of knowledge (Powell and Grodal, 2006). The innovation process also demands a selective collection, use, and dissemination of information, as well as an intensive interaction among multiple actors (Katsoni and Venetsanopoulou, 2013). Investors also benefit from communities as it becomes easier for them to search amongst several startups for new projects and companies to invest in. Historically, such technology hubs started from the USA but the last few years we see several new being formed in several cities across Europe, Athens being one of them (Schlaegel et al., 2013).

In order to minimize costs and facilitate knowledge sharing in a daily basis, entrepreneurs and developers of different startups sometimes work together in common spaces. Co-working, as this practice is called, is an effort to create a community of cafe-like collaboration spaces for developers, writers and independents (Aguiton and Cardon, 2007; Hoegl et al, 2007). There exist many co-working places in Greece, such as Colab and Colab@Herakleion and Colab@AIT, 123p, Thermi Link (@ Thessaloniki), Loft2work, Synergy Project, Openspace, The Archive, Camp. There exist also incubators where one can have free working space, consulting, support, access to business networks and a lot more, such as - Microsoft Innovation Center, EGG by Eurobank & Corallia, Start Tech Ventures. These co-working spaces also organize events, either for networking purposes, or/and for the education of the entrepreneurs. Private multinational companies as well as institutions and universities also support such events. Those events and gatherings are a great opportunity for startupers to ask questions and gain insights on several topics. Getting feedback is crucial for startups, even when it contains a lot of criticism. In Greece, there exist many events that promote entrepreneurship, start up activity and discussion, promotion of network with experienced entrepreneurs, such as: Startup Weekend Athens, Athens Startup Weekend University (for students), Open Coffee, TedX Athens, TechCrunch Athens Meetup.

Competitions by major firms and institutions are also organised, such as : Imagine Cup Greece from Microsoft Innovation Center(Only for students), Aegean Startups from University of Aegean and TANEO, Kainotomeis from Eurobank, I-bank, Innovation and Technology from the National Bank of Greece, Ennovation from AUEB and ELTRUN, Odysseies Kainotomias from University of Ioannina, Kainotomia from Nea Genia, Call to Innovation from TedX Athens, Make Innovation Work from Hellenic American Chamber, Hackathon and Wowzapp by Microsoft, Hatziioannou Entrepeneurship Contest. Hackathons are contests during which people involved in software development, such as programmers and project managers, get together to pitch, program and present an early working prototype of a software application after 24 or 48 hours (Leckart, 2012). Some hackathons have a specific theme or specific sets of technologies that need to be use, while some others are broader. The aforementioned description falls perfectly within the interest of venture capitalists; venture capitalists seek fresh ideas and new projects to invest in. Also, startups use hackathons as a mechanism to hire developers that have an entrepreneurial spirit.

6. A case study of ICT application in a Greek start up business in tourism

In tourism, the ability of destination organizations and businesses to select, to aggregate, and to distribute information to the right consumer at the right time and in the right place is critical. ICT-skilled tourism enterprises have huge opportunities to apply ICTs for communicating their offering, enhancing their visibility on the market and strengthening their competitiveness (Katsoni and Venetsanopoulou, 2013). Being able to integrate global knowledge and networks into local innovative processes is of crucial importance, and the existence of an absorptive capacity and learning atmosphere is therefore needed in a contemporary innovation system (Katsoni & Venetsanopoulou, 2013; Asheim and Isaksen, 2002).

ICTs are driving the innovation process by reducing distance and time constraints in inter-personal and inter-institutional contacts and by reducing the complexity of exchanging and acquiring information (Katsoni and Venetsanopoulou, 2013; Santinha et al, 2006). Furhtermore, innovation is not only about creative ideas that are turned into new services; it is also about adaptation, affordability and a set of activities aiming at satisfying needs; innovation includes all those aspects of conceptualisation, and development of creative ideas that will either improve or even create a new service outcome leading to higher tourist satisfaction, effective management strategies, and higher profits for firms (O'Reily, 2009). This comes either from new offerings or from cost savings that result from innovative processes (Pirnar et al, 2012). It therefore means that innovation and novelty in the travel industry refers to straightforward problem solving solutions, value adding operations and methods, as well as implementation of efficient ways and means by which producing and delivering the tourism product to customers makes it affordable for the company, while keeping customers happy.

Greek tourism businesses know how to move from the local market abroad and to cooperate closely with foreigners, both in terms of investments and knowledge exchange. The emergence also of innovative Web-based technologies has led to a reconfiguration of the environment in which tourism business is conducted. These fundamental technological shifts have a profound impact on the perception, consumption and construction of tourism spaces, and their local development outcomes (Katsoni and Venetsanopoulou, 2013). Tourism businesses cultivate a culture of innovation and one of the most important and successful examples of tourism start up activity, invested by Openfund is worth mentioning here, since its success has now gone far beyond the Greek borders.

Openfund was launched back in December 2012. Since then, they have made 10 investments: Incrediblue, Incrediblue is changing the way people experience holidays by enabling aspiring and experienced boaters to book unique boats, directly from their owners, by integrating the 3 key industries of Internet, Travel & Nautical Tourism, Workable, Locish, Dopios, Longaccess, Total Eclipse, The Singularity Lab, Discoveroom, plus a couple more pending announcement. They have already allocated €2.5 million in their first year and have just completed a small capital increase of €1.7 million, enabling dozens of entrepreneurs and a hundred great employees to build and market unique products that deliver value to thousands of customers. According to Jeremie Openfund II it seems to be three generic strategies to expand out of Greece.

(1) The immediately global business. If the service can be developed and delivered from anywhere to anywhere, as in some software-as-a-service (saas) models, it does not matter if you are in Greece and your user is in Ohio. The hard part is in devising something which appeals to users in distant regions with no need for localization. If you have that, regional offices are not needed, and strategic partnerships, if needed, can be built from afar. Dopios has a niche saas product, which meets a recurring need of companies around the world and can be equally useful to any mid-size employer of tech-savvy English-speaking people, whether in New York or in Helsinki. In such cases, international

associates are useful mainly in getting early feedback for the product, and in getting the (web-based) marketing campaigns right in each market. Beyond that, it is up to management to decipher signals from the web and react accordingly; but they can do that mostly from Greece.

(2) The plug-in route. If the venture is developing new technology in the narrow sense of 'technology' (e.g. a new recognition algorithm, such as that which drives BlindType and Fleksy) or an app that could be an enhancement of a dominant application (such as a Pinnatta to be added on a major communication platform like MSN or Skype), then growth may require that they become part of a global hub so that they can plug into the networks of coopetition there; and at some stage, to be acquired by a major US based player. To assist in such cases, our community may need good links to Silicon Valley players (investors or advisors). Sometimes the right hub may be Silicon Alley, or Silicon Roundabout, or Silicon Glen.

(3) The roll-out. Most marketplace models bring together groups of suppliers that are based in one location (country, city, or neighborhood) with local or international consumers as in the case of Dopios mentioned below. Many content providers, such as review sites, are also location-specific. So good 'hybrid startups' such as these will start in one or two locations, formulate a good version of the product by trial and error, and then roll out to more locations, one by one. In each location there will be need for marketing, sales and localization that can only be done in situ. Large companies can hire successful local executives to do this for them, but small ones when they attempt it, then they can only offer risky equity or bonuses; which means that they need to work with entrepreneurial types, not corporate officers.

To succeed in roll-outs, the community will need to exchange experiences, to share contacts in interesting markets, and to develop horizontal expertise that will be useful to several different ventures. This is the area where cooperation within the Greek startup community will be most critical. Entrepreneurs should think how their model fits into these three categories, and then plan for expansion accordingly. Investors and mentors should develop capabilities to be able to help them in each of these strategies.

A seed investment by Jeremie Openfund II of round €120,000 was given to the tourism firm Dopios, ("local" in Greek); Dopios is a community marketplace which brings locals and travellers together, and expands its operations in a number of international destinations. Its aim is to help tourists to find a local to connect who can show them around the destination. Dopios provides locals with an opportunity to meet new people and share the enthusiasm for the place they live, while making some money. At the same time, travellers get the unique chance to be treated like friends and experience a destination the way locals do.

Hundreds of experiences are already available in a dozen of destinations across Greece, next to Istanbul and San Francisco. Today, more international destinations open up, including London, Berlin, Barcelona and Buenos Aires, while locals are welcome to unlock their own city at Dopios. It is clear that the company is aiming for a global reach, out of a Greek base.

7. Conclusions

The Greek economy has experienced an unprecedented collapse after 2009, resulting in a GDP decrease by almost 25% (the greatest for any European country in peace time), unemployment of 27% and youth unemployment as high as 57%. For Greece to recover, the country needs to achieve high growth rates, and take advantage of ICTs, since the latter enables businesses and especially highly innovative startup companies to offer disruptive solutions with a global reach (Katsoni, 2011, Kavoura & Katsoni, 2013).

Governments, communities and academic institutions can participate actively in building a healthy environment for startups. As Brad Feld (2012) mentions, there are three frameworks that have been used in the past to explain how location relates to entrepreneurship (2012). The first framework is by exploiting external or agglomeration economies, where co-location creates a valuable knowledge pool for startups by the collection of talent in a certain area. The second framework, horizontal networks, refers to the information sharing culture, where cooperation between companies and the openness of the individuals creates a framework which focuses more on the sociological reasons behind the success of the ecosystems. Finally, the third framework, the creative class, includes the entrepreneurs, engineers and other individuals that contribute to the ecosystem who bring value by creating meaningful new forms. Florida (2002) argues that there is a strong tie between the creative class and innovation and that the culture developed by the creative class creates an incentive for those people to stay connected.

Although Greece is still not the country of choice for startups, for a variety of reasons, such as tax framework that is complex and volatile, bureaucracy, digital infrastructures which lag behind the EU average and the so obvious lack of access to capital, the author believes that there is potential for joint efforts and cooperation, in addition to considerable space for modernization of existing businesses. The Eurobarometer (2012) conjointly found that Greece has the very best share of second-generation entrepreneurs and Greece contains a significantly above average entrepreneurship rate, meaning business in start-up phases are growing. Greek startups also seek funding abroad due to the limited options in Greece but the increased number of mentoring and incubation solutions available to startups in Greece, makes room for the entrepreneurs to grasp opportunities and to develop their ideas and services before moving to a bigger scale abroad.

Cooperation between young people wanting to create their own business and game-changing innovators drawn from many disciplines such as technology, tourism and entertainment, design, the sciences, the humanities, the arts, NGOs, business and more, coming from around the country, seem to join internationally renowned speakers and research centers from Universities from south, central and north Europe by creating incubators and positively affecting interpersonal trust and the allocation of entrepreneurial action over newly emerging independent businesses and established organizations in society. It seems that Greece is getting into a new phase, where an entrepreneurial information sharing culture is spreading in the country and an entrepreneurial community and ecosystem is emerging, demanding a sound, healthy and supportive environment to flourish.

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