

# Internet Technology in Startup Businesses and Their Contribution to the Development of Entrepreneurship in Greece

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This paper examines the impact of Internet technology on emerging businesses and its contribution to the development of entrepreneurship in Greece. It emphasizes the importance of start-ups in the business ecosystem and the creation of favorable conditions for the development of innovative business ideas. In addition, a theoretical approach of basic concepts of the ecosystem of the startups is carried out which, in combination with the quantitative research that follows, attempts to answer the question whether the development of Internet technology affects entrepreneurship in Greece currently and in the future.

*Keywords:* entrepreneurship, innovation, Internet, startup ecosystem, technology

## Literature Review

### Theoretical Approach to Internet Technology

The Internet can be defined as a global-wide network, consisting of a multitude of other smaller computer networks that are in constant communication through a common communication protocol called Transmission Control Protocol (TCP) or Internet Protocol (IP). Thus, through the use of the Internet, users have the ability to browse the extended frames of a chaotic information base (Raptis, 2018, p. 16).

Nowadays country's entry into the Information Society (IS) consist of a key strategic choice achieving sustained economic growth and convergence with the economies of our European partners. Development of Information Society has the potential transform Europa into a society and economy where advanced technologies will be used for the improvement of living and working condition off all citizens (Delitheou, 2011, pp. 48-50).

As perceived full access to all the information provided by the web combined with the rational management, each unit management is able to make better decisions regarding the strategies followed and, in general, its policies of actuation and operation.

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The additional development of the Internet and the even greater familiarity of both businesses and consumers with regard to its use will contribute to even greater growth and development of businesses, while giving them the opportunity to strengthen their competitive advantage compared to other similar and non-business enterprises acting both nationally and globally (Potts, 2014; Bridgwater, 2016).

### **Theoretical Approach to Startup Businesses and Innovation**

The term “startup business” has been particularly concerned with the academic and business community because of the difficulty of creating a generally accepted definition. Scientists and entrepreneurs (Steve Black, Paul Graham) have given various definitions from time to time that identify some key features of a new enterprise (Christopoulou, 2018, p. 5).

According to Neil Blumenthal, co-founder and co-managing director of Warby Parker, “the newbie is a company trying to solve a problem where the solution is not obvious and success is not guaranteed” (EDCi 2016). Because of this, entrepreneurs should see opportunities in situations where others are at risk. Rapid information has the effect of shortening the life span of opportunities, and entrepreneurs should be alert to any innovation that could be introduced into the market even before demand exists (Trimi & Berbegal-Mirabent, 2012, p. 451).

But what is innovative nowadays? According to the Oslo Manual, innovation is defined as the production process of a new or significantly improved and sophisticated product or service, the implementation of a new process, a new marketing method, and even a new business strategy followed. In the context of the above conceptual approach to innovation, the business unit that has made any innovations during its activity is regarded as an innovation (Manual, 2005, p. 18).

### **Theoretical Approach to Entrepreneurship**

Entrepreneurship is a complex concept and cannot be easily understood or assigned to a single definition. This is perceived by observing that in the last few years, more and more academics and entrepreneurs are engaged in and are trying to attribute the concept of entrepreneurship.

In 1890, Alfred Marshall was the first scholar who recognized the importance of entrepreneurship in the production process. In particular, Alfred Marshall, in his work *Principles of Economics*, recognized that there are four factors in the production process, which are land, capital, labor, and organization. The first three factors are coordinated by the fourth, the organization. Entrepreneurship is therefore the driving force of the organization or, in other words, the productive factor that establishes economic thinking and combines the other three factors for the production process.

Later, Gartner (1988, pp. 11-32), through his behavioral view, pointed out that entrepreneurship should investigate more about what someone is doing and not who is doing it. Thus, entrepreneurship is defined as the phenomenon of establishing a business.

Nowadays, most scholars follow the theory of Shane and Venkataraman (2000, pp. 217-226) which considers entrepreneurship as a distinct field of study of business opportunities, human resources, which they wish to exploit and, at the same time, a process of discovery and their exploitation (Kakouris, 2013, p. 8).

It is commonly believed that in modern democracies, decision-makers regardless level (central, regional, and local), include development issues among the primary concerns for achieving great degree of citizens' prosperity.

In order this prosperity to be achieved apart from the traditional tools, methods, and procedures, they are also “employed” innovative strategies, policies, means and measures, modern enterprises, actions of integration in knowledge society, etc.

The relative strategy usually focuses in a series of pillars “adjusted” to the particular conditions. Indicatively, the following are being mentioned:

Creation of start-up non-profit companies functioning as enterprises accelerators (advises, provision of infrastructure without charge, loans, supportive actions for the creation of patents, support of scientific and technological laboratories, etc.).

Usual subject areas of action are environment, adjustment to climate change, sustainable transportation, buildings energy upgrade, creation of “smart city” (with the involvement of local authorities, enterprises and higher educational institutes, etc.), knowledge economy, better management of human resources, etc.

Apart from the above, new enterprises may also aim at the creation of enterprises of fibrotic networks, easy access to Internet through electric power network, establishment of heat sensors, filters for air quality control, exploitation of solid or liquid wastes, creation of Internet of things, etc.

To sum up, entrepreneurship is a conceivable, dynamic process by which individuals continuously identify the economic opportunities that occur and exploit them to sell products and goods, but also create by applying innovative ideas with which they are not only pursuing the exploitation of economic opportunities but are also attracted they take the risk and like to see their premonition confirmed (Alexidi, 2014, p. 9).

## **Startup Entrepreneurship**

### **Digital Startup Entrepreneurship in Greece**

Nowadays, Greece has made significant progress towards the emergence and development of startup entrepreneurship and innovation. However, to achieve this goal, more and more intensive efforts are needed by all actors involved in the Greek business ecosystem, with the Greek government being the most important.

Greece is lagging behind in digital new-generation entrepreneurship vis-à-vis other European cities, as shown by the European Digital Cities Index. This indicator, which describes several cities across Europe that support digital entrepreneurs, places Athens in 56th place among 60 European cities both in terms of the startup and the readiness of start-ups for their next step (scale up, a stage which is indispensable for their viability (EDCi, 2016).

2020 will be the year of entry of 5G, which will become the Trojan Horse for the implementation of a new technological revolution that comes in the form of a tsunami. The predictions for 2018 by Gartner’s American Technical Advisory show that the world will be united with a huge smart digital grid that will allow people, devices, content, and services to interact. Artificial Intelligence is the biggest modern revolution since electricity came to our lives and with the emergence of 5G networks, the so-called Internet of Things will eventually be attained, according to Gartner’s forecasts (BBVA, 2017).

The future of Greece depends on its ability to establish sustainable growth through job creation. A report that does not focus on public policies needed to bring about changes in the economic ecosystem of Greece, but to cultivate a business culture that will showcase entrepreneurs and innovative ideas by exploiting the opportunities of the 4th Industrial Revolution.

### The Ecosystem of Start-ups

One of the key and important issues that every startup business is concerned with is the search for financial tools. In order to encourage an idea to be implemented in business, an ecosystem for start-ups should be organized and built up to provide material and intangible resources.

This ecosystem is formed by people, start-ups of all stages and by various types of organizations in a physical and/or virtual location, interacting as a system that aims to create new start-ups. These organizations consist of universities, financial institutions, support organizations (such as incubators, accelerators, and collaborative sites), research organizations, service organizations (such as legal, financial services, etc.) and large companies (Start up Common, 2019).

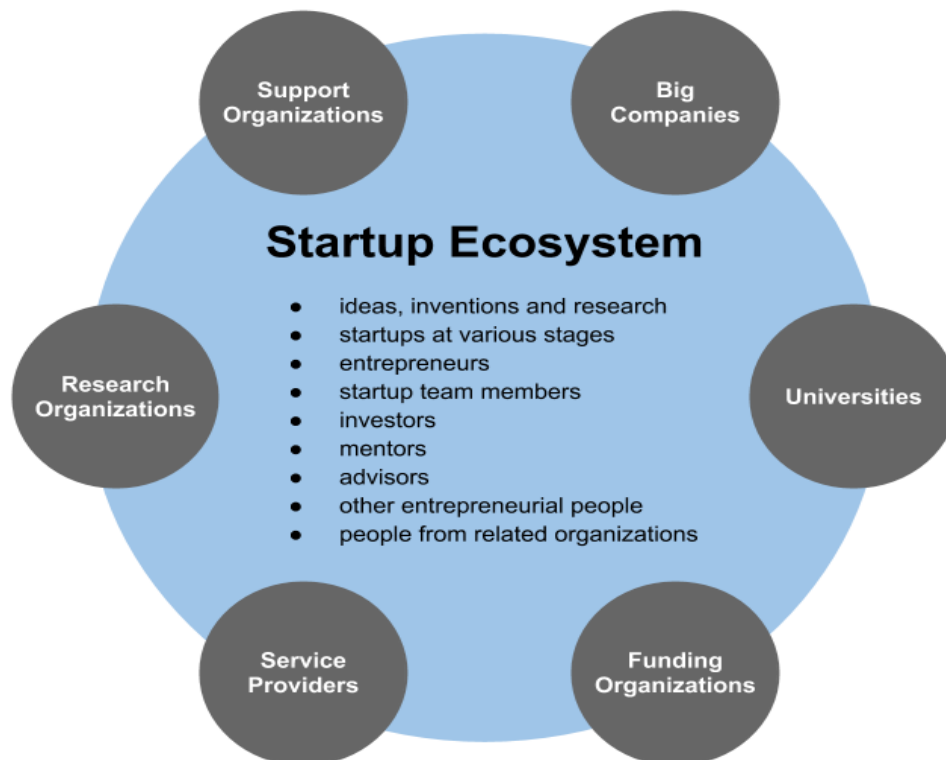


Figure 1. Startup ecosystem (Source: Start up Commons, 2019).

According to the European Digital City Index (EDCi), which provides information about strengths and weaknesses of local ecosystems, the European city that holds the leading EDCi, indicating that it has the most modern and digital ecosystem of start-ups in Europe, is London, with Stockholm and Amsterdam following. Athens, on the other hand, holds a staggering 50th place in the 60 countries (Christopoulou, 2018, p. 35).

In order to normalize these at European level, Startup Europa coordinates EU's work on interconnecting all ecosystems of start-ups with a view to the coherence of the various EU initiatives through a link between regional national ministries, innovation actors, and other stakeholders. In particular, over the last two years, 14 programs have been funded to bridge entrepreneurs of start-ups within the European Eco-system. The above programs were immediately implemented in 700 startups, bringing them into contact with investors, accelerators, entrepreneurs, corporate networks, universities, and the media.

In this way, Startup Europa provides through the integrated ecosystem networks the ground for a structured and efficient development of European enterprises and entrepreneurs (Startup Europa).

### Methodology

The research case to be explored is a research part of the hypothetical question “The Internet Affects the Progress and Evolution of Startup Businesses”.

Before examining the research case, we distinguish two sub-variables. On the one hand, we have the independent variable, the Internet and, on the other hand, dependent variables, entrepreneurship and innovation. The issue that we will be concerned with is the correlation of the independent variable with our two dependent variables.

For primary data collection on the correlation of Internet use with entrepreneurship and innovation in the business sector, a primary survey with a closed-ended questionnaire was sent between May 17 and May 21, which was sent to 170 people via e-mail.

In conclusion, in conjunction with the secondary research conducted earlier, the research case aims to answer the following research questions:

- ⇒ Does the Internet contribute to innovative business ideas?
- ⇒ Does the Internet contribute to entrepreneurship?

### Quantitative Research Results

#### Research Results

This section presents the results of primary research by topic theme for readership facilitation. First, we will look at the demographics of the respondents. In particular, Table 1 shows the results on the demographic profile of the 170 participants in the survey. Sixty-eight point eight ( $n = 117$ ) percent of the participants were male and 31.2% ( $n = 53$ ) were women. With regard to the age distribution of the sample, 61.2% ( $n = 104$ ) were aged 26 to 35, 15.3% ( $n = 26$ ) were 18 to 25 and 15.3% ( $n = 26$ ) were aged 36 to 45. A lower participation was observed in subjects aged 46 to 55 ( $n = 6$ , 3.5%), over 55 years ( $n = 3$ , 1.8%) and subjects under 18 years of age ( $n = 5$ , 2.9%).

Finally, 53.5% ( $n = 91$ ) of the participants were bachelor graduates, 22.4% ( $n = 38$ ) were postgraduates and 13.5% ( $n = 23$ ) were high school graduates. We had lower participation from college graduates ( $n = 13$ , 7.6%) and Ph.D. graduates ( $n = 2$ , 1.2%).

In the first thematic section, the answers given concern the contribution of Internet use to entrepreneurship. Table 2 gives results on whether the Internet has helped entrepreneurship in general and whether the Internet is helping to increase the number of start-up companies that are active. Of the 170 participants, 106 (62.4%) consider that the Internet has greatly helped entrepreneurship and 19.4% ( $n = 33$ ) consider the Internet to have been an absolute help for entrepreneurship. On the other hand, just 1.8% ( $n = 3$ ) consider that the Internet has little helped entrepreneurship.

In addition, we can note that 55.9% ( $n = 95$ ) of the participants believe that the Internet is a great contributor to number increase of start-up companies that are active and 27.1% ( $n = 46$ ) of the participants believe that the Internet contributes fully to the growth of the number of start-ups of companies that are active, while only one person feels that the Internet’s contribution to the increase in the number of start-up companies that are active is low.

In Figure 2, we see that a percentage ( $n = 170$ ) 45.9% ( $n = 78$ ) believes that the rise of entrepreneurship on the Internet is due to the low cost of setting up the company, 27.6% ( $n = 47$ ) believe that the rise of Internet entrepreneurship is due to easy access to international markets and 14.1% ( $n = 24$ ) believe that the rise of Internet entrepreneurship is due to customer service. A smaller percentage of respondents said the observed rise was due to new business models ( $n = 10$ , 5.9%) and new products and services ( $n = 9$ , 5.3%).

Table 1  
*Demographics of Respondents*

		<i>n</i>	%
Sex	Male	117	68.8
	Female	53	31.2
Age	Up to 18 years old	5	2.9
	18-25 years old	26	15.3
	26-35 years old	104	61.2
	36-45 years old	26	15.3
	46-55 years old	6	3.5
	Over 55 years old	3	1.8
Education	High school	23	13.5
	Vocational Institution	13	7.6
	Bachelor	91	53.5
	Master	38	22.4
	Ph.D.	2	1.2
	Other	3	1.8

Table 2  
*Results if the Internet Has Helped Entrepreneurship and Whether It Has Contributed to Increasing Start-ups*

		Not at all	A little	Fairly	Greatly	Absolutely
How much do you think the Internet has helped entrepreneurship in general?	<i>n</i>	0	3	28	106	33
	%	0	1.8	16.5	62.4	19.4
How much do you think the Internet is helping to increase the number of start-up companies that are active?	<i>n</i>	0	1	28	95	46
	%	0	0.6	16.5	55.9	27.1

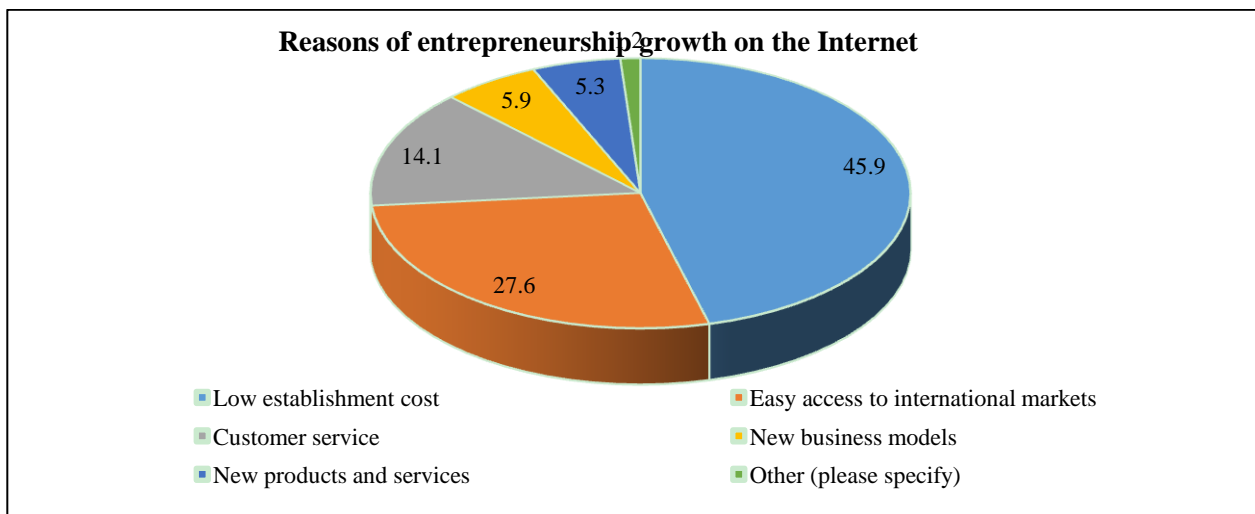


Figure 2. Circular diagram illustrating why Internet entrepreneurship is rising.

Figure 3 gives the results on what makes Internet entrepreneurship in Greece more profitable. Data analysis revealed that 34.1% ( $n = 58$ ) of respondents believe that increasing confidence of security and security in online transactions will make Internet entrepreneurship in Greece more profitable.

In addition, 26.5% ( $n = 42$ ) of the participants believe that in this direction the financing of new innovative online business activities can help and 20% ( $n = 34$ ) of the participants believe that gradual building of structures and culture for innovation has to be done. Finally, 18.8% ( $n = 32$ ) consider that the liberalization of e-commerce services between enterprises or state-owned enterprises would help the Internet entrepreneurship in Greece.

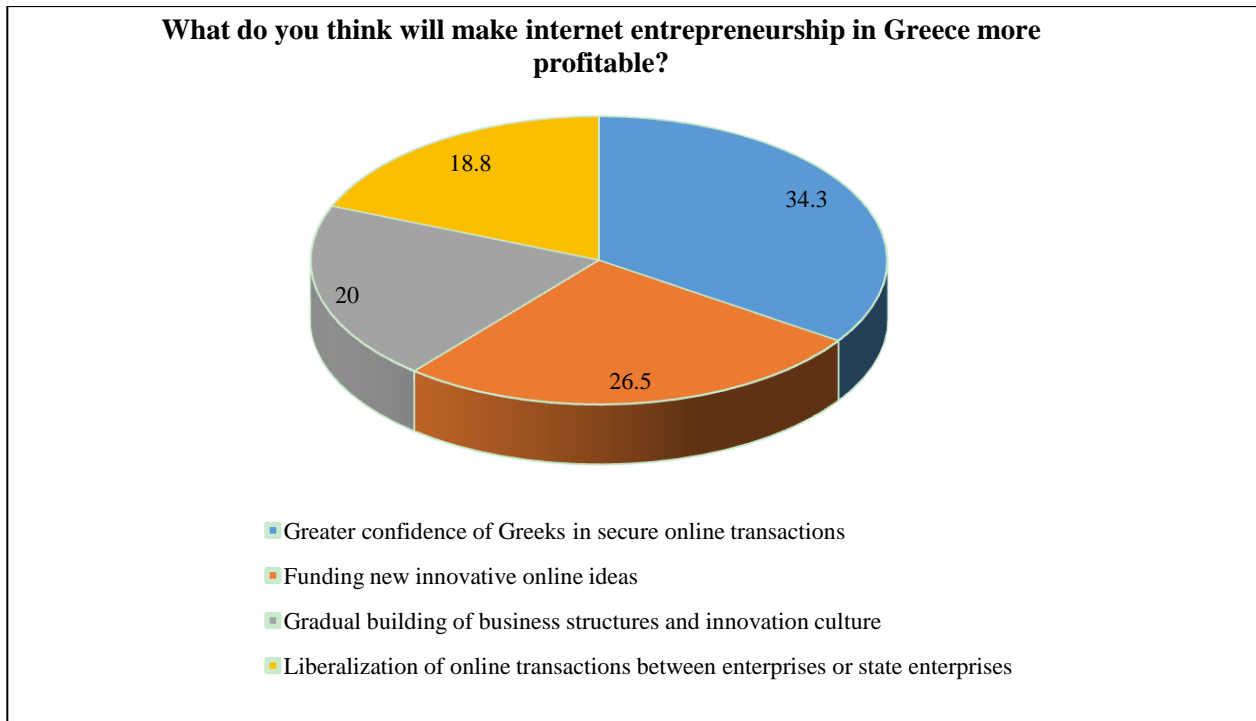


Figure 3. Circular diagram with the reasons why Internet entrepreneurship in Greece will be more profitable.

In the second thematic paragraph, we will present the results regarding the contribution of using the Internet to the entrepreneurship of innovative ideas. Figure 4 shows that 91.2% ( $n = 155$ ) of the participants agree that the use of innovative ideas on the Internet can positively affect entrepreneurship.

Important answers to entrepreneurship, innovation, and the Internet are taken from Table 3. Specifically, the analysis of the answers revealed that 87.7% ( $n = 149$ ) of the participants believe that if they had an innovative business idea, the Internet would play a very important role in its implementation. In addition, 69.4% ( $n = 118$ ) of the participants believe that the Internet, to a very large extent or to an absolute level, is a tool for developing the entrepreneurship and innovation of start-up companies.

Regarding whether the Internet is a tool for entrepreneurship and start-up innovation, 82.9% ( $n = 141$ ) think that the Internet is a very large or absolute tool for developing entrepreneurship and start-up innovation-up companies.

Finally, 79.4% ( $n = 135$ ) of the participants agree totally or very much that in the future, any innovative business idea that will exist will be directly related to the Internet.

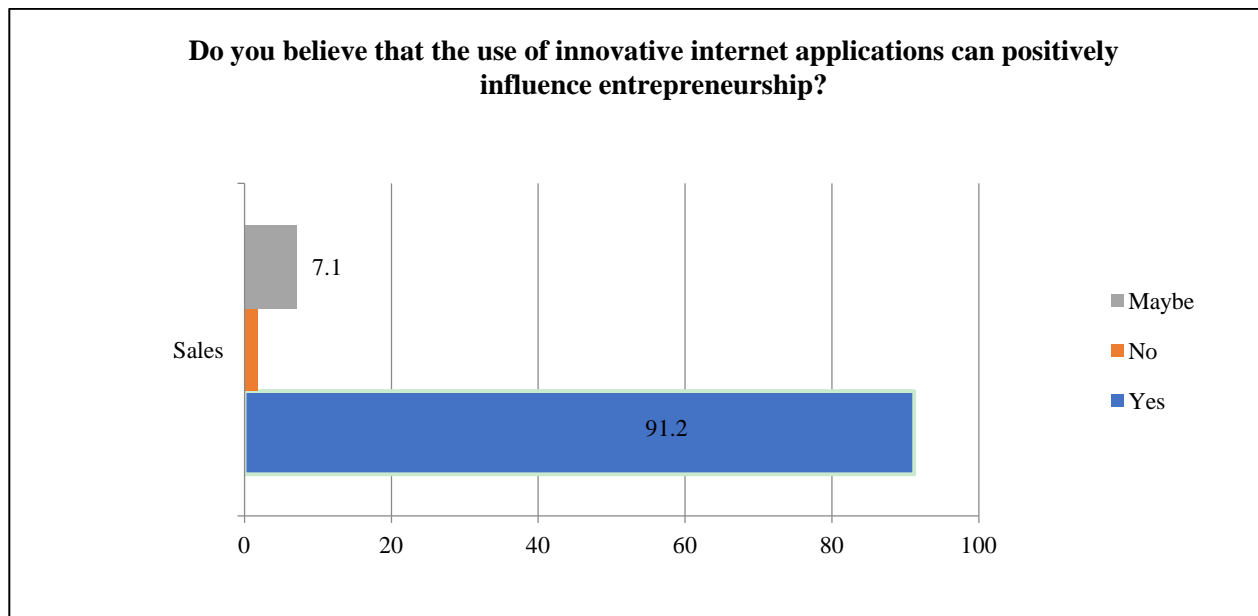


Figure 4. Chart on whether the use of innovative ideas on the Internet can positively affect entrepreneurship.

Table 3

Table Showing the Results of Entrepreneurial and Internet Innovation

		Not at all	A little	Fairly	Greatly	Absolutely
If you had an innovative business idea, how important role would the Internet play in its implementation;	n	0	2	19	95	54
	%	0.0	1.2	11.2	55.9	31.
Do you think the Internet is a source of inspiration for innovative business ideas?	n	0	4	48	90	28
	%	0.0	2.4	28.2	52.9	16.5
Do you think the Internet is a tool for developing entrepreneurship and innovation for start-up companies?	n	0	3	26	101	40
	%	0.0	1.8	15.3	59.4	23.5
Do you believe that in the future any innovative business idea will be directly related to the Internet?	n	3	1	30	68	67
	%	1.8	0.6	17.6	40.0	39.4

### Econometric Analysis

This section presents the results obtained by analyzing the data from the 170 respondents' answers to the survey. The results are presented in relation to the independent variable, Internet, as derived from the  $\chi^2$  control with the help of statistical software SPSS version 23.

From Table 4, a general conclusion is drawn that correlation and the interaction of innovative entrepreneurship with the Internet is important. More specifically, through the statistical representation, we conclude that:

- The Internet is such a source of inspiration for innovative business ideas.
- In addition, there is a very strong correlation between the Internet and innovative entrepreneurship as to the fact that the former is a very important lever for the development of the latter.
- Last but not least, there is a correlation of the Internet with the creation and implementation of future innovative business ideas as the Internet is appropriate for their creation and development in modern times.
- Finally, however, there is a very small correlation of innovative web applications to the extent that they have the potential to influence entrepreneurship in its evolution.



Table 4

*Table of Independent Variable, Internet and Entrepreneurship Innovation Results With SPSS Version 23*

		Internet
Do you believe that in the future any innovative business idea will be directly related to the Internet?	Pearson correlation	0.265**
	<i>Sig.</i> (2-tailed)	0.000
	<i>n</i>	170
Do you believe that the use of innovative web applications can positively affect entrepreneurship?	Pearson correlation	-0.083
	<i>Sig.</i> (2-tailed)	0.283
	<i>n</i>	170
If you had an innovative business idea, how important role would the web play in its implementation?	Pearson correlation	0.217**
	<i>Sig.</i> (2-tailed)	0.005
	<i>n</i>	170
Do you think the Internet is a source of inspiration for innovative business ideas?	Pearson correlation	0.398**
	<i>Sig.</i> (2-tailed)	0.000
	<i>n</i>	170
Do you think the Internet is a tool for developing entrepreneurship and innovation for start-up companies?	Pearson correlation	0.327**
	<i>Sig.</i> (2-tailed)	0.000
	<i>n</i>	170

### Conclusions

In the context of the above bibliographic as well as the research review, the extremely important role of the Internet in the impact of innovative products and the establishment of Startups has been identified. Additionally, it is perceived that the Internet provides each economic unit with a competitive advantage over its similarities, resulting in a prominent position in the business sector.

The Internet tool is a stimulating injection into Greek entrepreneurship since new businesses that do not have sufficient investment capital can start their business and apply their business innovative idea without the need for a high initial cost of setting up and operating.

Equally important are the findings of secondary research that show that the Internet plays an important role in technological revolution and in a change of mindset and culture in business, as the new data create business opportunities to exploit the available human resources.

To sum up, and taking into account primary and secondary research, we can say that the case, the Internet has an impact on the progress and development of entrepreneurship and innovation, but it is true that entrepreneurship and innovation will be further strengthened in the future developing investment initiatives and support structures to support it.

### Suggestions

Nowadays, more and more major investment opportunities are being created and several start-ups are seeking funding for their exploitation. However, more start-uppers' organization and serious preparation is needed before they reach the relevant investment funds to increase their chances of accepting their proposal.

Efforts for an integrated education for students and students on entrepreneurship and the concept of money would also contribute positively to the creation of entrepreneurial culture.

In addition, the Greek business ecosystem of start-ups will have to capitalize on Startup Europa in order to absorb larger investment funds and encourage new business models to raise Startups to make its economy more competitive.

