ENTREPRENEURSHIP IN CYBERSPACE: WHAT DO WE KNOW?

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Abstract

**Purpose** – The purpose of the paper is to analyze the specific features of entrepreneurship in cyberspace compared to basic models of entrepreneurship.

**Design/methodology/approach** – Systemic, teleological, deontological and hermeneutic analysis, limited case studies.

**Findings** – Conclusions are drawn on new qualities of entrepreneurship in cyberspace and a novel approach needed to study and understand it.

**Research limitations/implications** – The paper represents work in progress and surveys a rapidly developing field. Case studies mentioned in the paper are limited with respect to the scope of the paper and are only instrumental for illustrating different aspects of entrepreneurship in cyberspace.

**Practical implications** – The paper presents the theoretical framework for further study of the entrepreneurship in cyberspace, as well as basic material for classroom use. Further research of the entrepreneurship in cyberspace as a distinct social phenomenon is envisaged.

**Originality/Value** – Over the last two decades IC1’s, and especially cyberspace technologies, have significantly modified the start of new businesses and entrepreneurial processes. Although not dependent on technological breakthroughs, the cyberspace has...
multiple direct effects on new products and services, which are at the focus of this article. Direct and indirect effects of cyberspace on the start of the businesses are analyzed, along with the advanced transformation business models in cyberspace and novel value creation approach. The paper is among the first studies of entrepreneurship in cyberspace as a distinct social phenomenon. No similar studies have been undertaken in the Baltics before, while the US and European management studies have been limited to specific case studies, without presenting a general theoretical framework.

**Keywords:** entrepreneurship, e-entrepreneurship, cyberspace, social impact of technology.

**Research type:** The paper presents conceptual considerations on entrepreneurship in cyberspace, as well as limited case studies on specific entrepreneurial successes enabled by cyberspace.

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**Introduction**

Since the 1973 publication of the now classic paper „Technical entrepreneurship: what do we know?” by prof. Arnold C. Cooper (1973), a new form of entrepreneurship has gained increasing recognition. Although prof. Cooper did not discuss technological entrepreneurship as a discrete phenomenon, he did recognize that the birth of new, high-technology ventures had both substantial economic impact, as well as specific context. The cyberspace revolution, followed by the electronic social media revolution, have proven these points definitively. Currently, technology-based firms dominate the new startup creation, as well as the creation of socio-economic value. They are also increasingly differentiating themselves from other businesses in many distinct ways.

New technologies have enabled both new business vehicles and new forms of businesses, while at the same time have increased the accessibility of launching the global business venture to anyone with a computer and internet access. Technological considerations and instruments, especially online instruments are now basically at the root of every new business venture (Paliulis et al, 2007).

This paper aims at surveying the main features of entrepreneurship in cyberspace, and its principal features compared to the non-technological entrepreneurial ventures. The paper seeks to identify the differentiating drivers, as well as the new business models and value creation offered by cyberspace. These may be especially important for regional development and overall facilitation of entrepreneurship in current turbulent economic conditions. Increasingly, cyberspace entrepreneurship looks like the most accessible form of entrepreneurship for vulnerable social groups, such as the disabled or the elderly. Considerations for cyberspace entrepreneurship shall also be public policies enabling the entrepreneurs to take advantage of technology shall be made, along with the deeper scientific inquiry and study thereof.
The article employs the methods of systemic, teleological, deontological and hermeneutic analysis. Limited case studies are also provided.

1. Main features of entrepreneurship in cyberspace

Modern day entrepreneurs face a very different context from what their peers faced just ten years ago. The global information flows, global networks, interwoven economies, as well as new information and communication technologies have radically changed the opportunities available to entrepreneurs, the methods employed for launching business ventures and the challenges they face (Roberts, 2001).

Especially in the past two decades technological entrepreneurship has become de facto global (Friedman, 2007). Products and services placed online are immediately available to users irrespective of their geographical location and time zone. This is well illustrated by the case of the creators of the first Lithuanian children’s interactive e-book “„Pelytė smailytė ir gelbėtojai“. Launched on Apple iPad platform, the book is a result of collaboration between two different industries – publisher Realverus and web services provider Gaumina (VZ, 2011). Within the first month was purchased by customers from all over the globe, including such countries as Saudi Arabia and Singapore (Baubinas, 2011).

Entrepreneurship in cyberspace generally has two distinct manifestations:
- As a technological extension to a non-technological business (e.g. a restaurant launches an online ordering system for take-away service or a traditional retailer launches an online shop, e.g. the web venture of the biggest Lithuanian groceries retailer Maxima: www.e-maxima.lt);
- As a technology based business venture, where technology is the vehicle or enabler of the whole venture (e.g. technology enabled clothing exchange: www.manodrabuziai.lt, as well as its German: www.kleiderkreisel.de and UK centric: www.friendlyfashion.co.uk portals).

Information and communication technology (ICT) based businesses and other technology based business ventures may either depend on new product breakthroughs, or mostly on providing ‘enabling’ services and products to very many branches of industry, including their own. They do this by creating new products and services that are cheaper, more convenient and better than previous products, but which are not expressly ICT or high-tech products (Duening, 2007). A good example of such non-breakthrough but better product is electronic and interactive books. Potential for technology adoption in non-technological businesses is huge and so are the entrepreneurial opportunities. Moreover, many traditional technologies are swiftly converging with ICTs to produce completely new products and services, e.g. IP-TV.

Some ICT based products and services, e.g. Facebook (www.facebook.com) – biggest global social networking website, differentiate themselves in providing a new experience and an additional way to communicate, rather than something completely new.
Cyberspace also offers unrivaled access to information on both sides of the interaction. Internet is well recognized as almost limitless source of information, accessible for very small consideration or no charge at all. For consumers it offers possibility to learn about goods and services and compare different propositions easily form the comfort of their own home. It also allows consolidation of consumer information, easy sharing of good and bad experiences, augmenting consumer power for group buys. On the other end of the interaction, the internet offers very significant possibilities to learn about and from your customers. This is implemented through interactive elements of the world wide web. Modern internet browsing technologies, such as cookies, beacons, user browsing and purchase history, social network disclosures allow target advertising and sales, tailored to the needs and traits of the specific individual (Chaffey et al, 2009).

At the business end, the cyberspace also eliminated most of the physical limitations, such as high street locations, warehousing and display spaces, limited business hours and dependence on the sales staff performance. Early limitations of cyberspace business, such as limited payments and delivery infrastructures are also mostly irrelevant now, although some perceptions about the cyber-business (such as insecurity of online transactions) persist in less technologically receptive societies or due to digital divide.

Irrelevance of the physical location applies to both business and consumer. For consumers in rural areas the offer is the same as for city consumers. Equally, prime business may be run from remote and inexpensive areas, rather that maintaining storefronts in the urban centers. Common misconception among the fresh entrepreneurs is that remotely located entrepreneurs are severely disadvantaged compared to those inside or near major urban hubs and markets. While proximity to the urban and knowledge hubs offers some advantages in terms of leveraging the network effects (Silicon Valley is the best known example of the location leveraged network effects (Saxenian, 1994)), the cyberspace has enabled accessibility even from remote and peripheral locations (Thierstein, Wilhelm, 2001).

More informed consumers have enabled whole set of new cyberspace businesses, such as comparison shopping (e.g. Nextag: www.nextag.com or Bizrate: www.bizrate.com), group purchases (e.g. Groupon: www.groupon.com). While on the other end, businesses learning more about the consumers is the basic value proposition of Google or even Facebook.

2. Differentiating Drivers of Entrepreneurship in Cyberspace

Regardless of the manifestation, the primary force acting on technological entrepreneurship is the rapid pace of technological change and adoption of the internet into all spheres of social life. Facebook was overwhelmingly adopted by many new businesses over the last two years. At the same time it recently exceeded 500 million of registered users. There are many factors that produce this dynamism, however the most important are:

- Network effect;
– Globalization;
– Technologization of social processes;
– Ultra low barriers of entry.

Network effects and their importance to entrepreneurial success were recognized long before the cyberspace revolution. It is the cyberspace revolution and emerging technologies, which have amplified the network effects to the new quality level and even allowed new businesses to capitalize on the cyberspace facilitated network effect (Lipnack, Stamps 1994).

Network effect from a purely technical standpoint is tantamount to the Metcalfe’s Law, which refers to telecommunications network and postulates that the value of a telecommunications network is proportional to the square of the number of users of the network. In entrepreneurial world the network effect has social and instrumental aspects to it. Social aspect of the network effect is best explained through the concept of social capital. Any modern business is part of a complex networked social environment and depends on the social capital accumulated by the entrepreneur within such environment. Social capital therefore necessitates and justifies the importance for an entrepreneur to be involved and to maintain strong networks. Networks are not self-perpetuating, they need to be created and nurtured and they are only facilitated (but not created) by technology. As a minimum the network requires purpose, members, and links. Members and links are physical, purpose and relationships are intangible. Large part of the entrepreneurial success lies in the diversity and reach of the available networks. Real value-adding networks are based on perceptions of potential or actual value-adding contributions to a network by its human members, i.e. value is becoming social function. Social networks are also complex, primarily because they are personal, not institutional, i.e. they are rarely fixed to a specific business venture (Barringer, Ireland, 2009).

Instrumental aspect of the network effect is also expressed through the “strength of weak ties”. This offers another way to measure the value of an entrepreneurial network. “Strength of weak ties”, allows taking advantage of not only those to whom direct connections exist, but also those who are connected to distant members of your own network. Entire business models based on such networks have been implemented and are reasonably successful. In most cases it effects itself as the amplifying force on the dissemination of business information, whether marketing information or other business related information, or alternatively as a drawing force to use the same tools (Anderson et al, 2007). Viral marketing owes much to the instrumental aspect of the network effect and is best proof that it works. Even cyber-pioneers, such as Microsoft owe much of their success to the instrumental aspect of the network effect. Cyberspace has an inherent tendency to create technological monopolies. The reason why most of the world’s computers run Microsoft operating systems is because everyone else does. Likewise, Facebook is the most popular because that is where all our friends are (Prahalad, Krishnan, 2008).

While network effects are independent from cyberspace, due to global connectivity and 24/7/365 reach thereof has further amplified the network effect. Such instant, global and inexpensive spread of the information in many instances created new qualities, such
as significant technological innovations through increased research transparency or even new model of innovation based on distributed information contribution (e.g. open source software). Cyberspace facilitated network effect has spawned new dedicated technological platforms for professional business networking (such as LinkedIn: www.linkedin.com or Plaxo: www.plaxo.com). It must also be noted that on the negative side, the network effect amplifies the negative or undesirable information as well. Piracy of digital information is a demonstration of such adversity.

Globalization is another key driver of entrepreneurship in cyberspace. Globalization plays direct role through international trade, where national businesses must adopt international market standards and requirements, and indirect role through worker and working place mobility. Although globalization is a major factor of technological development and entrepreneurship, it is interesting to note that it was technology that has enabled the infrastructure for global trade in the first place (Friedman, 2007). The Internet has enabled the connectivity to the global workforce, as well as e-work and e-services. New technology-based economy has achieved relatively unimpeded flow of money, talent, capital, and goods across national borders. As it was already noted, geographical location is increasingly irrelevant for the online economy. The past two decades have produced enormous changes not only in technology, but also in where the technical work is performed and who is performing it. The trend of business process outsourcing is already a history. Now technology is increasingly becoming independent of geographical locations and swiftly moving to the cloud. Cloud-based technologies surely offer new entrepreneurial opportunities and creative applications, such as Google Apps-based third party applications (www.google.com/apps/intl/en/business/marketplace.html).

Technology is increasingly intruding into most social processes, including very intimate processes such as dating or healthcare. Such technologization of social processes is ever increasing and offers many new and unique business opportunities. Electronic health (e-health) systems are revolutionizing the way in which patients interact with physicians and vice versa.

Basic features of the cyberspace businesses already lower barriers to entry. However currently available online commerce platforms, such as Ebay (www.ebay.com), virtually eliminate them. Most of the current cyberspace giants, such as Google, Skype or Facebook were launched by students with the only resources being their own intellect and work. Global success of Lithuanian cyber-champion GetJar (www.getjar.com) is a proof that neither lack of capital, nor peripheral location deters great opportunities.

3. New Cyber Startup Models

Counter intuitively, following established business models is increasingly of lesser value for cyber entrepreneurs. For example, Google did not have a business model to start with, neither did Facebook. This did not deter them from becoming the biggest advertising platforms. Both Google and Facebook concentrated on making a great
product that would have a huge audience. Both assumed that so long as they have the former, the revenue would follow. This approach is also changing the whole science of business valuation.

Although not a result of the cyberspace age per se, the concept of lean startup is largely enabled by cyberspace technology. Cyberspace enables setting up an online venture with minimal or even zero cost. Existing global technological business platforms, such as Ebay, Amazon, or more specialized – such as Etsy (www.etsy.com) for arts and crafts sales enable setting up the electronic stores in minutes and virtually at no fixed cost (and especially no sunk cost). Overheads for running this business largely amount to Internet access expense. Existing online tools such as Google Apps, Google marketing tools (Adsense and Adwords) also offer very affordable marketing solutions for emerging business. Equally, unsuccessful startups are able to fail fast, without producing significant socio-economic burden on the entrepreneur and enabling him/her to reset and restart with another startup. Such lean cyber-startup model had been put at the heart of many student entrepreneurship initiatives, such as Startup Weekend (startupweekend.org) or 3 Day Startup (3DS) (www.3dstartup.org).

Minimal investment both reduces risks, allows swift adaptation or even winding up of the venture in case it is not successful. A further evolution of this is the passive startup model, which suggests setting up product or service websites and mounting presence online, without having the actual product or service ready. This approach enables market gauging and customer response research, which are crucial prior to launching an actual product. In case passive startup means fail to generate market interest it is assumed that the product or service is not marketable, while in case of market interest, the entrepreneur swiftly follows with the actual product or service.

Both the lean startup and passive startup models offer significant economic benefits, especially in terms of risk minimization, efficient use of limited resources and delivery of products and services, which fill an actual market demand.

Yet another business model is provided by emerging virtual spaces. Virtual goods can be bought and sold in virtual markets (such as World of Warcraft or Second Life), but can make real money for entrepreneurs in the real life (Vitzthum, 2009). Such virtual virtues have challenged many aspects of the traditional business establishment from business ethics to taxation. They also enable virtual startups and virtual business models, which have no analogues in the real world (e.g. virtual blacksmith selling magical weaponry), but are rather based on fantasy opportunities.

4. New Models for Cyber Startup Valuation and New Entrepreneurial Strategies

The latest wave of cyber-entrepreneurs-billionaires has also been riding a wave of rather novel approach to enterprise valuation. While traditionally reliant on discounted cash flow and other finance methods, the cyber-entrepreneurs have largely discarded them. Instead, the valuations of new cyber-ventures are based on the strategic valuation
of user base or audience and the disruption potential that the venture bears to the incumbents (Hering, Olbrich, 2006).

This approach is the least mathematical of the techniques for determining valuation, nevertheless the one most often used. It basically relies on yet another manifestation of the network effect. It can be illustrated through a rather straightforward technique that relies on identifying a key metric within an industry, and on identifying industry comparables that have had a definitive valuation because of being acquired or having executed a recent equity sale. In the cyberspace the most common key metric is “active members” or audience (Mero, 2007). Facebook sold equity to Microsoft in 2007, where Microsoft purchased a 1.6% equity stake in Facebook for 240 million USD. Simple arithmetic calculates that that places the value of Facebook at 15 billion USD in 2007 (Stone, 2007).

The number of active members that Facebook had at the time of this valuation was 50 million. This can be used to determine the relative cash value of each member. In other words, the 15 billion USD valuation places the value of each member at 300 USD. Companies in similar industries can now use the same multiple (i.e., 300 USD per active member) to develop a reasonable valuation. It is noteworthy that free cash flow of the Facebook in 2007 was negative.

Valuations may vary depending on which comparable a venture chooses to use in generating the value of each active member. In general, owners of a venture will want to choose the comparable that gives them the greatest value, while potential investors will argue for the comparable that gives the venture the least current value. Since, there is no such thing as an “absolute” or “true” venture value, especially for ventures where all the money is yet to be earned, it all depends on the argument that can be made for the specific metric and comparable baseline for calculating valuation.

In January 2011 Facebook raised 1.5 billion USD in a Goldman Sachs-led financing round, which valued the company at 50 billion USD. In addition to Goldman Sachs’ 450 million USD investment, venture capital firms Digital Sky Technologies put up 50 million USD and other investors contributed another 1 billion USD to purchase stake in the company. This Facebook valuation is about 25 times its 2010 revenue. The company had revenue of 1.2 billion USD and the profit of 355 million USD in the first three quarters of 2010, up from 777 million USD in 2009. The profit of slightly more than 200 million USD was recorded for all of 2009. Already several weeks after the above 1.5 billion financing round, which based Facebook at a 50 billion USD valuation in January 2010, secondary exchange SharesPost Inc. has valued Facebook at 82.9 billion USD through Facebook equity sales closed through it, i.e. the valuation has jumped by more than 40 percent since mid-December 2010. Valuation of the Facebook is soaring as the markets and advertisers pay for the attention of the Facebook user base, which exceeded 500 million people. Advertising spending on Facebook is expected to more than double to 4.05 billion USD in 2011 (Bloomberg, 2011). Facebook’s estimated worth is still dwarfed by Google, the world’s biggest cyberspace company, which is worth 192 billion USD.
SharesPost, a marketplace for private company shares, bases value on such criteria as transactions, research estimates and venture-funding rounds. Facebook and other Web 2.5 ventures, gather resources from users themselves in order to build a community based strategic value. Once the user base is built, only then the entrepreneurs try to determine how to develop a profitable business model. This is especially true for Twitter, operator of mini-blogging platform, which has no revenue whatsoever, nevertheless is strategically valued at few billions USD.

Overall, not generating free cash flow, but generating strategic value from membership explosion or from proximity, or even intimacy with the users are primary criteria for valuation of cyber ventures. This is major contrast to non-cyberspace ventures, where free cash flow remains the prevailing valuation method. Availability of private capital and alternative valuation, also significantly reduces or at least postpones the desirability of the IPOs for the cyber technology ventures (Yoon-Jun, 2008; Rozens, 2009).

Conclusions

ICTs have changed business in many ways. Over the last two decades ICTs, and especially cyberspace technologies, have also significantly modified the start of new businesses and entrepreneurial processes.

Although not dependent on technological breakthroughs, the cyberspace has multiple direct effects on new products and services. These are: independence from physical factors, new ways for human communication, unrivaled access to information, and lowering of entry barriers. Indirectly the cyberspace has launched the self-perpetuation of globalization, amplified network effects and intruded into most social processes. The cyberspace ventures are now increasingly differentiating in their business models and value creation approach. Cyberspace has facilitated the lean approach to startups, also enabled passive and virtual startups. Moreover, cyber-startups are increasingly generating value from their strategic relationships with their users and even directly allow users to influence value of the venture.

Analysis of the key features and aspects of the cyberspace entrepreneurship conclusively suggests that it is substantially different from the basic entrepreneurship premises and even from the technological entrepreneurship in non-cyberspace related fields, therefore deserves separate scientific inquiry. It is also appropriate to design specialized courses on entrepreneurship in cyberspace into the university curriculum.

Further studies of the specific cyberspace entrepreneurial phenomena identified in this paper will be necessary for fully understanding them and accelerating the adoption of the cyberspace entrepreneurship, as well as for designing specific public policies for dealing with and facilitating the cyberspace entrepreneurship.
Literature


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VERSŁUMAS ELEKTRONINĖJE ERDVĖJE:
KĄ MES ŽINOME?

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Naujos technologijos atvėrė kelius tiek naujoms verslo formoms, tiek visiškai naujoms verslo šakoms. Technologijos taip pat gerokai padidino galimybes kiekvienam, turinčiam kompiuterį ir prieigą prie interneto, pradėti globalūs verslą. Technologinii instrumentai ir tinklo galimybės yra priimamos ir panaudojamos net ir visiškai tradicinėse verslo srityse, tokiose, kaip, pavyzdžiui, ūkis.

Straipsnyje analizuojamos pagrindinės verslumo elektroninėje erdvėje savybės ir skirtumai, palyginti su tradicinė verslumo samprata. Mokslinėje literatūroje verslumas nagrinėjamas atsietai nuo technologijų ir konteksto, o tai, autorius nuomone, neleidžia atskleisti verslumų elektroninėje erdvėje ypatumų. Straipsnyje analizuojami verslumo elektroninėje erdvėje diferencijuojantys skirtumai, specifiniai elektroninio verslumo modeliai ir vertės grandinės. Akcentuojama, kad verslumas elektroninėje erdvėje yra priemianusia verslumo forma, ypač tinkama socialiai atskirtoms visuomenės grupėms. Verslumas elektroninėje erdvėje realizuojamas daug lengviau nei fizinėje erdvėje, kadangi itin sumažinami ekonominių įjimų į rinką trukdžiai, sukuriama rinka nusipynus, namudiniams ir pan. produktams ir paslaugoms.
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**Raktažodžiai:** verslumas, e.verslumas, elektroninė erdvė, technologijų socialiniai aspektai.